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**STUDIES IN AKAN SYNTAX, ACQUISITION, AND SENTENCE  
PROCESSING**

by

Kofi Korankye Saah

B.A. (Honours), University of Ghana, Legon (1979)

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A thesis presented to  
the School of Graduate Studies and Research  
in fulfillment of the thesis requirement for the degree of  
Doctor of Philosophy  
in Linguistics

Université d'Ottawa/University of Ottawa

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## Table of Contents

|  |     |
|--|-----|
| Abstract .....   | vi  |
| Acknowledgements .....   | vii |
| List of abbreviations.....   | x   |
| Part I: Studies in Akan Syntax.....  | 1   |
| Chapter 1: Introduction.....   | 2   |
| 1.1. Framework.....  | 2   |
| 1.1.1. Part I: The Syntax of Akan.....   | 3   |
| 1.1.2. Chapter 2: Sentence Structure in Akan.....  | 4   |
| 1.1.3. Chapter 3: In-Situ Wh-Questions.....  | 4   |
| 1.1.4. Chapter 4: Resumptive Pronouns.....   | 6   |
| 1.1.5. Chapter 5: Wh-Focusing: A non-movement analysis.....  | 6   |
| 1.1.6. Part II: Studies in Acquisition and Sentence<br>Processing .....  | 8   |
| 1.1.6.1. Chapter 6: Studies in the Acquisition of Resumptive<br>Pronouns, Wh-in-Situ and Wh-Binding/Linkage..... | 9   |
| 1.1.6.2. Chapter 7: Sentence Processing.....   | 10  |
| 1.1.7. A Note in the Akan Data.....  | 10  |
| Chapter 2: Sentence Structure in Akan.....   | 12  |
| 2.1 Introduction.....  | 12  |
| 2.1.1. Tense, Aspect, and Negation in Akan.....  | 14  |
| 2.1.2. Interactions Between Tense, Aspect, and Negation.....   | 19  |
| 2.2. An Analysis.....  | 25  |
| 2.3. Adverb Placement.....   | 34  |
| 2.3.1. Time Adverbials.....  | 35  |
| 2.3.2. Manner Adverbials.....  | 40  |

|  |     |
|--|-----|
| 2.3.3. Summary.....  | 44  |
| Chapter 3: Wh-in -Situ Questions.....                            | 45  |
| 3.1. Introduction.....   | 45  |
| 3.1.2. Wh-in-Situ in Akan.....                                   | 47  |
| 3.1.3. Subject Wh-in-Situ.....                                   | 52  |
| 3.1.4. Question Particles, Wh-in-Situ and Wh-Movement.....       | 58  |
| 3.1.5. Yes-No Question Formation in Akan.....                    | 59  |
| 3.1.5.1. The Question Intonation.....                            | 59  |
| 3.1.5.2. Yes-No Particles.....                                   | 61  |
| 3.1.5.3. QuPs and Wh-Movement: Baker (1970).....                 | 64  |
| 3.1.5.4. Clausal Typing and Wh-Movement: Cheng (1991).....       | 65  |
| 3.1.5.5. Clausal Typing and Wh-Questions in Akan.....            | 67  |
| 3.1.5.6. Summary.....  | 70  |
| 3.2. Interpretation of Wh-in-Situ.....                           | 70  |
| 3.2.1. Against LF Wh-Movement of in-situ Wh-words:               |     |
| Aoun and Li (1993).....  | 72  |
| 3.2.2. LF Movement of Wh-in-Situ.....                            | 75  |
| 3.2.3. Selectional Restrictions and Interpretation.....          | 75  |
| 3.2.4. Weak Crossover.....                                       | 78  |
| 3.2.5. Scope.....  | 81  |
| 3.3 Summary.....   | 86  |
| Chapter 4: Resumptive Pronouns in Akan.....                      | 87  |
| 4.1. Introduction.....   | 87  |
| 4.1.1. The Pronominal System of Akan.....                        | 89  |
| 4.1.2. A Note on Akan Verbal Morphology.....                     | 94  |
| 4.1.3. The Null Pronoun in Akan.....                             | 98  |
| 4.2. Construction Types in Which Resumptive Pronouns Appear..... | 101 |

|   |     |
|---|-----|
| 4.2.1. Focused Sentences .....  | 101 |
| 4.2.2. Focused Wh-Questions .....   | 104 |
| 4.2.3. Relative Clauses .....   | 105 |
| 4.2.4. Cleft Sentences .....  | 106 |
| 4.2.5. Clausal Positions in Which Resumptive Pronouns<br>Appear .....                   | 108 |
| 4.3. Resumptive Pronouns and Complementizers .....                                      | 114 |
| 4.4. An Analysis.....   | 117 |
| 4.4.1. Binding Resumptive Pronouns.....   | 117 |
| 4.4.2. Resumptive Pronouns in Akan: Base-Generated<br>Pronouns or Trace Spellouts?..... | 119 |
| 4.5. Resumptive Pronouns and Adjuncts.....  | 123 |
| Chapter 5: Wh-Focusing in Akan: A non-movement account.....                             | 130 |
| 5.1. Introduction.....  | 130 |
| 5.2. Focus Marking: A definition.....   | 131 |
| 5.2.1. Focus Marking in Akan.....   | 132 |
| 5.2.2. Wh-Words and Focus.....  | 135 |
| 5.3. An Analysis.....   | 139 |
| 5.3.1. The Composition of COMP in Akan.....   | 140 |
| 5.3.2. The Focus Markers (Complementizers) <b>na</b> and <b>de(ɛ)</b> ...               | 141 |
| 5.3.3. The Relative Clause Marker <b>a</b> .....  | 144 |
| 5.3.4. The <b>se</b> Complementizer.....  | 145 |
| 5.3.5. Summary.....   | 148 |
| 5.4. Determiners.....   | 151 |
| 5.4.1. The Determiner <b>nó</b> .....   | 152 |
| 5.5. The Structure of Relative Clauses.....   | 160 |
| 5.6. The Structure of Focused Wh-Questions.....   | 164 |

|  |     |
|--|-----|
| 5.7. Discussion .....  | 165 |
| 5.8. A Residual Issue.....   | 173 |
| 5.9. Summary .....   | 176 |
| Part II: Studies in Acquisition and Sentence Processing.....                         | 178 |
| Chapter 6: The Acquisition of Resumptive Pronouns, Wh-in-Situ<br>and Wh-Linkage..... | 179 |
| 6.1. Introduction.....   | 179 |
| 6.2. Experiments.....  | 179 |
| 6.2.1. Subjects.....   | 180 |
| 6.2.1.1. Production Test 1.....  | 180 |
| 6.2.1.2. Design.....   | 180 |
| 6.2.1.3. Results.....  | 182 |
| 6.2.2. Production Test 2.....  | 188 |
| 6.2.2.1. Design.....   | 188 |
| 6.2.2.2. Results.....  | 189 |
| 6.2.2.3. Summary.....  | 195 |
| 6.3. Wh-Binding/Linkage.....   | 197 |
| 6.3.1. Test 3: Question Response Task.....   | 198 |
| 6.3.2. Design.....   | 198 |
| 6.3.3. Results.....  | 209 |
| 6.4. Test 4: Sentence Judgement Task.....  | 216 |
| 6.4.1. Design.....   | 216 |
| 6.4.2. Results .....   | 219 |
| 6.4.3. Summary.....  | 224 |
| Chapter 7: Islands, Completeness, and Sentence Processing.....                       | 228 |
| 7.1. Introduction.....   | 228 |
| 7.1.1. Background to the Study.....  | 231 |

|   |     |
|---|-----|
| 7.2. Test 5: Scalar Judgement Task.....                       | 232 |
| 7.2.1. Design.....  | 233 |
| 7.2.2. Subjects.....  | 239 |
| 7.2.3. Results.....   | 239 |
| 7.3. Discussion .....   | 251 |
| 7.3.1. The Theta Reanalysis Constraint (Pritchett, 1992)..... | 252 |
| 7.3.2. The Completeness Constraints on Binding.....           | 256 |
| 7.4. On Learnability.....                                     | 261 |
| 7.5. Conclusion.....  | 262 |
| Appendix A: Materials for Production Test 1.....              | 263 |
| Appendix B: Materials for Production Test 2: Questioning..... | 265 |
| Appendix C: Materials for Test 3: Question Response Task..... | 266 |
| Appendix D: Materials for Test 4: Binary Judgement            |     |
| Task Based on Stories.....                                    | 271 |
| Appendix E: Materials for Scalar Judgement Task.....          | 275 |
| Bibliography.....   | 307 |

### *Abstract*

This is a two-part study that combines the study of several construction types in Akan with a psycholinguistic study. Part I is a syntactic study clause structure in Akan, interrogative sentences, resumptive pronouns and the issue of whether there is syntactic Wh-Movement in Akan. I argue that Akan is basically an in-situ language with regards to the placement of wh-words in questions. Questions with their question-words in pre-IP position are not the result of syntactic wh-movement: they are the result of the general focus marking process in the language which can affect any constituent in a sentence by base-generating it in [Spec, CP] and base-generating a resumptive pronoun (null or overt) in the corresponding argument position in the complement or comment clause/sentence. This analysis is based on such factors such as the absence of gaps, the use of resumptive pronouns even in positions such as the direct object position where movement is allowed, and the possibility of linking a wh-element into a position inside syntactic islands such as relative clauses, VP-complements, and temporal clauses.

Part II, deals with the acquisition of some of the structures discussed in Part I (in-situ wh-questions, the use of resumptive pronouns, and the sensitivity to the dichotomy between overt (animate) and null (inanimate) resumptive pronouns in the language. It also deals with issues of the processing of sentences involving long-distance dependencies. I argue, based on studies involving Akan and English, that islands constraints may be mimicked by processing principles though island constraints cannot be reduced to principles of sentence processing. It is suggested that a distinction should be made between parsing islands and processing islands and that while the two are not coextensive, they may overlap to a large extent in languages like English where the constraints hold, but not in a language like Akan where the constraints can be violated.

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To the Good Lord, all the people mentioned above, and others too numerous to mention, I say:

**Me da mo ase pii!                      Many thanks!**

**Merci beaucoup!**

### List of Abbreviations

|           |                                       |
|-----------|---------------------------------------|
| Ak.       | Akuapem                               |
| As.       | Asante                                |
| Fa.       | Fante (or Fantse)                     |
| Foc.      | Focus (marker)                        |
| CD.       | Clausal determiner                    |
| COMP      | Complementizer                        |
| Dec.      | Declarative                           |
| INDIC     | Indicative                            |
| Ov. Pron. | Overt pronoun                         |
| Ø-Pron    | Null pronoun                          |
| Poss.     | Possessive (morpheme)                 |
| QI.       | Question intonation                   |
| QP.       | Quantified phrase                     |
| QuP(s)    | Question particle(s)                  |
| Ques.     | Question                              |
| Rel.      | Relative clause complementizer/marker |
| Sp.       | Specificity marker                    |
| SUBJN.    | Subjunctive morpheme                  |
| Top.      | Topicalization                        |
| 3pl.      | 3rd person plural pronoun             |
| 3sg.      | 3rd person singular pronoun           |

To the memory of my parents

**Part I**  
**Studies in Akan Syntax**

## Chapter 1

### Introduction

#### 1.1. Framework

This is a two-part study which examines certain aspects of Akan syntax, their acquisition by Akan-speaking children, as well as the factors affecting the processing of structures involving long-distance dependencies. In Part I, I examine certain aspects of the syntax of the Akan language in the light of recent knowledge in the *Principles and Parameters* (commonly referred to as the *Government and Binding*) framework of generative grammar first articulated in Chomsky's 1979 Pisa lectures and modified as Chomsky (1981). In Part II, I present the results of a study of Akan children's acquisition of some of the structures discussed, such as, the use of overt (animate) and null (inanimate) pronouns and resumptive pronouns, wh-in-situ, and the neutralization of the animate/inanimate distinction in the use of overt and null (resumptive) pronouns in certain contexts — before adjuncts. I report the results of a study involving long-distance dependencies and employing the ambiguous question technique and examine the implications of the results for current theories of grammar and sentence processing.

Grammatical theory in the generative mode is in a state of flux at the present time. There is a gradual shift from the *Principles and Parameters/ Government and Binding* framework to the *Minimalist* programme in syntactic theory which was first postulated in Chomsky (1992), and expanded upon in subsequent works such as Lasnik (1993), Watanabe (1993), and the collection of papers edited by Bobaljik and Philips (1993), and Philips (1993). Though I do make references to some of these in this work, I will be working mainly in the *Principles and Parameters/Government and Binding* framework as espoused in Chomsky (1981, 1986, etc.), Pollock (1989), and many others.

The aim of this study is to present as much data on Akan as possible and in a readily accessible manner so that other researchers can interpret them in whatever framework/theory they are using without difficulty.

### **1.1.1 Part I: The Syntax of Akan**

Akan is a Kwa language (a member of the larger Niger-Congo group of languages) spoken in Ghana. By Akan, I am referring to the dialect cluster whose principal members include Fante (or Fantse), Akuapem, Asante, Agona, Bron, Wasa, Akyem, Kwahu, etc.<sup>1</sup>. It is sometimes referred to by the name one of its major dialects such as Fante or Twi and is spoken by nearly 40% of the population (196.) Census). Three of these dialects, Akuapem, Asante, and Fante have achieved literary status, their orthographies reflecting the peculiarities of their vocabulary and pronunciation (Dolphyne, 1988). It has been studied for a comparatively longer time than some of the other Ghanaian languages. Some of the early studies were undertaken by non-native speakers; notable among them are the Christian missionary, Rev. J. G. Christaller (1875), and the American linguist W. E. Welmers (1945, [1946]). These studies continue to be a rich source of information for current researchers, native and non-native speakers alike. Beginning from the second part of this century, studies of certain aspects of Akan syntax have been and continue to be undertaken by both native and non-native linguists using different theoretical approaches.

My primary aim in this project is to contribute to the discussion on Akan syntax and initiate psycholinguistic studies in the language (something, which to the best of my knowledge, has not been done before) and by so doing add to the

---

<sup>1</sup> Dolphyne (1988) points out that it was not until the 1950s that the name Akan began to be used as the name of the language. Before then, the name Twi was used to refer to the Asante and Akuapem dialects and people spoke of Twi and Fante as if they were different languages even though they are mutually intelligible.

current knowledge of the human linguistic system. I hope to test some of the current assumptions in the theory and discuss the similarities and differences between Akan and other natural languages in the setting of parameters.

### **1.1.1 Part I: Studies in Akan Syntax**

The study in this part will cover the following chapters and topics:

### **1.1.2 Chapter 2: Sentence Structure in Akan**

This chapter establishes the fact that Akan is basically an SVO language as shown in (1):

- (1) Ama huu abofra no.  
A. saw child the  
"Ama saw the child".

The tense and aspectual forms of Akan verbs, sentence negation, and adverb placement will be discussed and the structure of a typical simple sentence articulated using current ideas of the split INFL (see for example, Pollock 1989; Chomsky, 1989; Ouhalla, 1990; and Laka, 1989, 1990).

### **1.1.3 Chapter 3: In-Situ Wh-Questions**

Akan has two types of content or wh-questions: i) one in which the wh-word is in situ as in (2a), and ii) the other in which the wh-word is in clause-peripheral position as in (2b):

- (2) a. Kofi huu den?  
 K. saw what  
 "Kofi saw what?"
- b. Den na Kofi hui?  
 What Foc. K. saw it  
 "What (was it that) Kofi saw it?"

I show that unlike in English, sentences like (2a) are genuine questions seeking information, not *echo-question* that are used to get a speaker to repeat a statement. Based on the data and following Cheng's (1991) *Clausal Typing Hypothesis* (CTH), I argue that Akan is an in-situ wh-language and that the sentences of the type in (2b) do not result from syntactic wh-movement, rather, they are derived from the focus marking process in the language which is a non-movement operation.

I discuss the syntax and semantics of questions with wh-words in situ as exemplified by (1a), in the light of two current accounts in the *Government-Binding* framework that are diametrically opposed: i) the view, following the work of Huang (1982) in Chinese that assumes that there is an obligatory raising of the in-situ wh-element at LF (see also Watanabe 1992) to take scope and receive its interpretation, and ii) the other view proposed by Aoun and Li (1992) and Cole and Hermon (1994) that rejects LF wh-movement in favour of coindexation of the wh-elements in situ with a question (*Qu*) operator in Spec of Comp. I show that as far as current knowledge is concerned, LF movement of the in-situ wh-word best accounts for the Akan data.

#### 1.1.4 Chapter 4: Resumptive Pronouns

The use of resumptive pronouns (overt or null) somewhere inside an embedded or complement IP is obligatory in Akan relative clauses as in (3a) and questions with a wh-word in clause-peripheral position as in (3b):

- (3) a.   Abofra<sub>j</sub> a       Kofi   soma<sub>a</sub> no<sub>i</sub>   no ...  
          Child Rel. K.     sent   3sg   the  
          "The child that Kofi sent him/her ... "
- b.   Hen<sub>a</sub><sub>j</sub> na   Kofi     soma<sub>a</sub> no<sub>i</sub>   no?  
          Who  Foc. K.     sent   3sg.  the  
          "Who (was it that) Kofi sent him/her?"

Resumptive pronouns, as I will argue, are freely generated in Akan and are neither used to repair Subjacency violations nor are they spellouts of traces that result from illicit movement. They are pronouns occurring in open sentences that can be coindexed with operators occurring in A'-positions (i.e., Spec, CP).

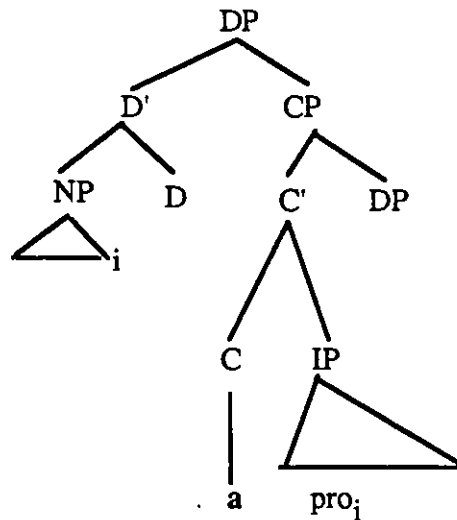
#### 1.1.5 Chapter 5: Wh-Focusing: A non-movement analysis

Akan questions with wh-words/phrases in clause-initial position exemplified by (2b) and (3b) have received two different analyses in the literature. One analysis favoured by Boadi (1990), sees questions with clause-initial wh-words/phrases as having undergone syntactic wh-movement. In this analysis, the view is taken that the wh-word/phrase is moved to COMP and that "the gap left by the moved Q-Word or Phrase is later filled by an anaphoric pronoun" (Boadi, *ibid.* p.78). The other viewpoint, articulated in Saah (1988, 1992), is that there is no

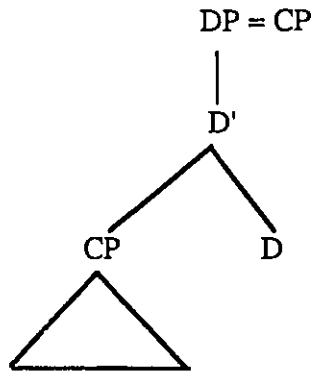
movement of the wh-word/phrase but that it is base-generated in that position and a resumptive pro(noun) also base-generated in situ. This is the "Non-movement analysis" and one that I will postulate and defend in this study.

This non-movement analysis is based on an array of factors such as the occurrence of resumptive pronouns (in structures involving questions with pre-IP wh-words, topicalized/cleft sentences, and relative clauses) even in environments where no grammatical principles are violated by wh-movement. I postulate the structures in (4) for relative clauses and focused wh-questions respectively. This is based on the DP analysis of NPs (Abney 1987) and is the result of the fact that relative clauses and some focused wh-questions may be modified by determiners in Akan.

(4) a.



b.



It will be shown that not all in-situ wh-questions have counterparts with the wh-word in pre-IP position (i.e., focused) and vice versa. This, I argue, arises from semantic and/or pragmatic factors.

### 1.1.6 Part II: Studies in Acquisition and Sentence Processing

This part of the thesis involves a report on studies conducted in the summer of 1992 and in 1993 on the acquisition of some of the structures discussed in Part I. The study was aimed at investigating children's knowledge of, and/or use of resumptive pronouns, and wh-in-situ questions. There was also a question response task involving the ambiguous question technique which was aimed at finding out children's sensitivity to wh-linkage in long-distance dependencies. The basic issues that such structures pose for acquisition theory are: i) Is there a default setting for *Move Alpha* in the syntax?, ii) Is the existence of wh-in-situ questions a

clue to a non-movement analysis of questions for the child? It is hoped that this study of Akan, a language with both in-situ wh-questions and questions with clause-peripheral wh-words will make it possible to attempt to answer these and other questions about acquisition.

#### **1.1.6.1 Chapter 6: Studies in the Acquisition of Resumptive Pronouns, Wh-in-Situ and Wh-Binding/Linkage**

The studies presented in this chapter establish the fact that by age 5;4, Akan-speaking children are aware of the animate/inanimate distinction in the use of overt and null (resumptive) pronouns in object position and the neutralization of this distinction before adjuncts. They are also aware of the two types of content questions in the language: wh-in-situ and questions with focused wh-words.

I try to answer the questions as to whether there is a default setting for *Move Alpha* in the syntax and whether the existence of wh-in-situ in Akan can provide us with a clue as to a non-movement analysis of questions for the child. The question and response task and a binary sentence judgement task which formed part of a battery of tests administered in this study produced conflicting results. Though it has been shown in Part I of this study that Akan, unlike English allows island violations, both the Akan adult and child subjects preferred to locate the wh-word in the main clause in questions that were potentially ambiguous between a top clause reading and a subordinate clause reading. They also judged acceptable sentences in the language that involved island violations as ungrammatical. In effect, they behaved like they were speaking a language like English in which these constraints hold. The results of these tests, as I point out, seem to suggest that the ambiguous question technique may not provide a proper measure of the competence grammar in children and that island constraints, though belonging to the competence (grammatical) level, may mimic parsing principles.

### 1.1.6.2 Chapter 7: Sentence Processing

The results of the tests discussed in chapter 6 have some implications for processing theory which I discuss in this chapter. A more sophisticated scalar judgement task discussed in this chapter establishes the fact that Akan is different from English in allowing island violations and that the similarity of the Akan subjects' results to that of the English results reported in the Goodluck et. al (1992) study does not reflect the subjects' competence grammar.

Current analyses of island constraints in the sentence processing literature such as Pritchett's (1992) *Theta Reanalysis Constraints* (TRC) and the *Completeness Constraint on Binding* (CCB) of Goodluck and Finney (1993) are discussed in an attempt to find explanations for the subjects' behaviour. The CCB is preferred as the one that best accounts for the results of both the English and Akan results and it is argued that the test results call for a dichotomy between parsing islands and competence islands and that though island constraints may operate to mimic processing principles, they cannot be reduced to principles of processing.

### 1.1.7 A Note on the Akan Data

The study of Akan syntax presented here is based primarily on my own intuitions as a native speaker of the language, on existing works by other writers, and oral and written texts (where possible) in the language. Whenever in doubt, I have sought the judgements of other native speakers of the language on the acceptability and/or interpretation of some of the sentences cited. I am a native speaker of the Agona dialect; I can however, speak the Asante, Akyem, Fante, and Akuapem dialects well. I learnt to read and write the last two in school. As a result

of my facility with the different dialects, I have tried to make the examples used here as representative of the Akan language as possible.

I have adopted the conventions of the unified Akan orthography of 1978 which dispenses with the spelling conventions that reflected the pronunciations of the three literary dialects. Sometimes, I include certain elements in parenthesis to indicate the different pronunciations found in the dialects, for example, **d(e)ɛn** "what", **de(ɛ)** — (a focus marker). Where I use a form or structure that is peculiar to a particular dialect, this is noted and the spelling is done to capture the pronunciation in the particular dialect.

Though Akan is a tone language and tone plays a lexical as well as a grammatical function in the language, I have not marked tone unless it is needed to distinguish between otherwise identical lexical or functional categories. The glosses are done in such a way that it is easy to identify each word in the sentence.

In making the English glosses of the Akan words, I have taken into account the fact that there is no one-to-one correspondence between words and expressions in one language and those of another. Sometimes an idea that may be expressed by a single word in English may be expressed by more than one word in Akan. Where it makes sense to give an item by item gloss of the words, I have done so. Where this is not possible, I have given a single word translation in English. In the same way, there are certain ideas that are expressed by more than one word in English for which Akan may have just one word and it does not make sense, as far as I am concerned, to give a word by word gloss in such cases.

## Chapter 2

### Sentence Structure in Akan

#### 2.1. Introduction

The main thrust of this chapter is to give an idea of the surface configuration of elements in a typical Akan sentence to make for easy comprehension of the discussion in the subsequent chapters.

The basic word order in Akan is SVO as in example (1a). Sentences such as those in (1b) and (1c) show that the words cannot be rearranged without destroying the grammaticality of the sentence. The reason for this is that the language lacks such coding devices as subject and object markers which allow languages such as Latin to change the ordering of words in a sentence while maintaining its grammaticality and preserving its meaning<sup>1</sup>, or other means of reordering such as are found, for example in V2 languages.

---

<sup>1</sup> Bresnan and Mchombo (1987) show that in Chichewa, a Bantu language spoken in parts of East Central Africa (e.g. Malawi, Mozambique, Zambia, Zimbabwe, etc.,) which has both Su[bject] and O[bject] markers (SM and OM), there is an interesting interaction between word order and verb morphology. For example, in the absence of an OM on the verb, the object immediately follows the verb as in (ia), and the subject may be re-ordered as in (ib); but when there is an OM, all the ordering in (ii) are possible:

- |       |    |  |
|-------|----|--|
| (i).  | a. | SuVO: Njuchi zi-ná-lúm-a                      alenje.<br>bees    SM-PAST-bite-INDIC    hunters<br>"The bees bit the hunters."    |
|       | b. | VOSu: Zínálúma alenje njuchi   |
| (ii). | a. | SuVO Njuchi zi-ná-wá lúm-a                      alenje.<br>bees    SM-PAST-OM-bite-INDIC hunters<br>"The bit them, the hunters." |
|       | b. | VOSu: Zínáwálúma alenje njuchi.  |
|       | c. | OVSu: Alenje zínáwálúma njuchi.  |
|       | d. | VSuO: Zínáwálúma njuchi alenje.  |
|       | e. | SuOV Njuchi alenje zínáwálúma.   |
|       | f. | OSuV: Alenje njuchi zínáwálúma.<br>(Bresnan & Mchombo, 1987: 744-745, exx. 3a, b & 4).   |

- (1) a. Kofi huu Ama.  
       K. saw A.  
       "Kofi saw Ama."
- b. \*Kofi Ama huu.  
       K. A. saw  
       "Kofi saw Ama."
- c. \*Huu Ama Kofi.  
       Saw A. K.  
       "Kofi saw Ama."

Constituents in a sentence can, however, be focused by being base-generated in a pre-IP position (i.e. Spec, CP) followed by a focus (Foc.) marker such as **na** and **de(ε)** as in (2). Whenever this happens, a resumptive pronoun is also base-generated in situ.

- (2) a. Ama<sub>i</sub> na Kofi huu no<sub>j</sub>.  
       A. Foc. K. saw her  
       "Ama Kofi saw her"/ "It was Ama that Kofi saw (and no  
       one else)."

---

Akan does not have such markers and as a result, word order cannot be varied the way it is done in the Chichewa examples above.

- b. Amaj de(ε) Kofi huu noj.  
 A. Foc. K. saw her  
 "(As for) **Ama** Kofi saw her (he may have seen others,  
 too)" <sup>2</sup>

I will return to these structures in chapter 5 where I discuss focus marking and questions with sentence/clause-initial wh-words. I will show that wh-words/phrases undergo the same kind of process as the NP **Ama** in (2), especially with the **na** focus marker and that such structures do not involve syntactic wh-movement.

### 2.1.1 Tense, Aspect and Negation in Akan

The inflected verb in Akan carries a number of affixes (as well as tone) to indicate tense, aspect, mood and negation. Consider the examples in (3) - (8) below:

- (3) a. ɔ - di akutu. [v' V+T]  
 S/he eat:Pres oranges  
 "S/he eats oranges".
- b. ɔ- n- di akutu. [v' Neg+V+T]  
 S/he:Neg:eat:Pres oranges  
 "S/he does not eat oranges."

---

<sup>2</sup> The two focus markers **na** and **de(ε)** have different semantic interpretations which will be discussed in chapter 5. It is this semantic difference that I have tried to capture in the translation of these sentences. I use bold type face for the focused constituents. Elements focused with the **na** focus marker are sometimes translated with the cleft construction: "It was ...; while those focused with **de(ε)** are translated with "As for ...." This distinction will be made clearer in chapter 5.



- b    ɔ-    re-   n-   di   akutu.                    [v' Asp+Neg+V]  
       S/he   Prog:Neg:eat   oranges  
       "S/he is not about to/will not eat oranges."
- c.    \*ɔ    n-   re-   di   akutu.                    \*[v' Neg+Asp+V]  
       S/he   Neg:Prog:eat   oranges
- (7) a.    ɔ    re-   be-   di   akutu.                    [v' Asp+Aux+V]  
       S/he   Prog:ImF:eat   oranges  
       "S/he is about to/coming to eat oranges."
- b.    ɔ    re-   n-   di   akutu.                    [v' Asp+Neg+V]  
       S/he   Prog:Neg:eat   oranges  
       "S/he is not about to/will not eat oranges."
- (8) a.    O -   be-   di   akutu.                    [v' Aux+V]  
       S/he   InF:eat oranges  
       "S/he will eat oranges."
- b.    ɔ-    re-   n-   di   akutu.                    [v' Asp+Neg+V]  
       S/he   Prog:Neg:eat   oranges  
       "S/he is not about to/will not eat oranges."

The examples in (3) - (8) show the range of affixes that can be attached to the verb. The verbal complex (V') on the right of each example indicates the linear ordering of the morphemes on the verb for each sentence. All the affixes are prefixes, except

for the Tense morpheme which may be expressed by tone for *present tense* and a vowel suffix for *past tense*. Sentence negation, as can be seen from the (b) examples is effected by affixing a nasal (always homorganic with the initial consonant) to the verb root/stem.

Writers such as Dolphyne (1987), Dolphyne & Kropp Dakubu (1988), and Clements (1982) differ in the analysis of tense and aspect in Akan. Dolphyne, and Dolphyne & Kropp Dakubu isolate ten tense/aspectual forms in the language. These are: *present/habitual, stative/continuative, past, perfect, progressive, immediate future, indefinite future, imperative I, imperative II, and consecutive*. Clements, on the other hand, isolates two 'pure' tense forms, *past* and *future*; and four 'pure' aspectual forms, *habitual, stative, imperfect, and perfect*. These combine to give the various tense/aspect forms in the language.

I will not discuss the relative merits and/or demerits of these analyses in this study. Instead, I will assume that there are two main tenses in the language — *past* and *present*, and two aspects — *progressive* and *perfective*. I take the view, following Spencer (1991:26), that tense has to do with the “reference to time of an event or state”. On this view, Akan can be seen as being similar to a language like English in distinguishing morphologically between a past tense and a non-past tense (i.e. present). Aspect on the other hand, I will assume to be dealing with the distinction between “an action that is completed (*completive* or *perfective* aspect) and one that is ongoing or unfinished or a state which has no endpoint (*imperfective*)” (ibid.).

I will also assume that there is no future tense per se in Akan but that there are ways of expressing future time/action (i.e. an action/event that is to take at a time posterior to the present time or time of the utterance). This is exemplified in (9):

- (9) a.   ɔ- re- bɛ-da.  
           3sg:Prog:Fut:sleep  
           “S/he is about to /coming to sleep”.
- b.   ɔ- bɛ-da.  
           3sg:Fut:sleep  
           “S/he will sleep.”
- c.   ɔ- re- kɔ-da.  
           3sg:Prog:Fut:sleep  
           “S/he is going to sleep.”

All the three sentences in (9) express events that are to take place at a time posterior to the time of the utterance. The three strategies employed in expressing a future event in the examples are: the use of, i) the Prog aspect **re** and the morpheme **bɛ** (which appears to be derived from the verb **bra** “come”) as in (9a); ii) **bɛ** only as in (9b); and iii) the Prog **re-** and the verb **kɔ** “go” as in (9c).

I will analyze the forms **bɛ** and **kɔ** as auxiliaries (Aux) that are used to express the future in Akan and will therefore gloss them as such in the rest of this study. The reasoning underlying this analysis stems from the verbal origins of these affixes and the fact that they can co-occur with other tense/aspectual affixes in the same verbal complex. It is the combination of the tense, aspectual, and auxiliary affixes that give the different tense/aspect forms the verb in Akan, as indicated for example, in Dolphyne (op. cit.).

The use of these auxiliaries for the future has semantic implications. Apart from indicating that the action described by the verb is imminent, (9a) also has the added meaning that the event/action will take place proximate to the speaker. The

sentence could therefore be interpreted as: “*S/he is about to/coming to sleep (here).*” This form is variously referred to as the *future ingressive* or *immediate future*. (9b), without the Prog morpheme, is non-committal as to when and where the event will take place. The use of the *kɔ* Aux in (9c) implies that the action will take place away from the speaker or place of utterance. This form is sometimes referred to as the *future egressive* tense (e.g. Dolphyne, *ibid.*).<sup>3</sup>

### 2.1.2 Interactions between Tense, Aspect and Negation

Aspect and (the present) tense combine to produce a *present perfect* adi “has eaten” but there is no *past perfect* form \**adii* “had eaten” in the language. For example:

- (10) a. Ama a- di akutu no.  
 A. Perf:eat orange the  
 “Ama has eaten the orange”
- b. Ama di- i akutu no.  
 A. eat:Pst orange the  
 “Ama ate the orange.”
- c. \*Ama a- di- i akutu no.  
 Ama Perf:eat:Pst orange the

---

<sup>3</sup> The morphemes *be/be*, and *ko/kɔ* are unique in the sense that unlike auxiliaries in languages like English, they can be used in imperative sentences as in:

- i. Beda “Come to bed” (i.e. near the speaker).  
 Come:sleep
- ii. Kɔda “Go to bed” (i.e. away from the speaker).

(10a) and (10b) are in the present perfect and simple past respectively. (10c) is not possible because of the combination of the perfective marker and the past tense. In other words, there is no past perfect form in the language. Both (10a) and (10b) can be used for a past action/event and speakers vary in their choice of one over the other. The negative form of these sentences are as in (11):

- (11) a. Ama a- n- di akutu.  
 A. Perf:Neg:eat orange  
 “Ama didn’t eat an orange”
- b. Ama a- n- di akutu nnera.  
 A. Perf: Neg: eat orange yesterday  
 “Ama didn’t eat an orange yesterday.”
- c. Ama n- di- i akutu.  
 A. Neg:eat:Pst orange  
 “Ama hasn’t eaten an orange.”
- d. \*Ama n- di- i akutu nnera.  
 A. Neg: eat:Pst orange yesterday  
 “Ama hasn’t eaten an orange yesterday.”
- e. Ama n- di- i akutu (ε)nne.  
 A. Neg: eat:Pst orange today  
 “Ama hasn’t eaten an orange today.”

Though the English translations show a distinction in tense and aspectual forms, (11a) and (11c) can be used in Akan with different temporal values or interpretations. The choice of one over the other may be determined by semantic/pragmatic factors in Akan. (11a), despite its perfective morphology can be used to imply “*It is not the case that Ama ate an orange.*” There is a note of finality in this usage. That is, it has a *completive* reading and the sentence can be modified by the past time adverbial **nnɛra** “yesterday” as in (11b). (11c), on the other hand, can be used to imply “*It is not the case that Ama has eaten the orange*”, despite its past tense morphology. This gives a suggestion that it is still possible/likely for her to eat the orange at a later time, (i.e. *Ama hasn’t eaten the orange yet but she will do so later*), something we do not get with (11a). Despite the fact that the verb bears the past tense morphology, it cannot be used with the past tense adverbial **nnɛra** “yesterday” as the ungrammatical (11d) shows. It is, however, possible to modify it with a present time adverbial such as (ɛ)**nne** “today” as in (11e).

The tense and aspectual forms may be neutralized under negation. Consider, for example, the sentences in (9) repeated here as (12). These sentences have the progressive morpheme **re** and the future ingressive morpheme **bɛ** in (12a), the indefinite future morpheme **bɛ** in (12b), and the progressive **re** and the future egressive morpheme **kɔ**.

- (12) a.   ɔ-       re-       bɛ-da.  
           3sg:   Prog: Fut: sleep  
           “S/he is about to /coming to sleep”.
- b.   ɔ-       bɛ- da.  
           3sg:   Fut: sleep  
           “S/he will sleep.”

c.      ɔ-      re-      kɔ- da.  
           3sg:    Prog: Fut: sleep  
           “S/he is going to sleep.”

When all these sentences are negated, it is possible to have the single structure in (13) in which the tense and aspectual forms manifested in (12) are neutralized:

(13)    ɔ-      re-      n-      da.  
           3sg:    Prog: Neg:    sleep  
           “S/he won't / is not going to/is not about to sleep.”

It is not clear what grammatical reason(s) or principle(s) account(s) for this. It appears to me, however, that what is important is the truth value of the statement encoded by the verb, once that is falsified, the temporal and/or directional factors associated with the event/action are irrelevant. These meanings are recoverable from the discourse context as the question and answer pairs in (14) demonstrate:

(14)    Ques: a.      ɔ-      re-      bɛ-      da?  
                           3sg:    Prog: Aux:    sleep  
                           “Is s/he is about to sleep?”

Ans:              Daabi, ɔ-      re- n-    da.  
                           No    3sg: Prog: Neg: sleep  
                           “No, s/he won't sleep.”

Ques: b.      ɔ-      bɛ- da?  
3sg:    Aux: sleep  
"Will s/he sleep?"

Ans:            Daabi, ɔ- re- n- da.  
No    3sg:Prog:Neg:sleep  
"No, s/he won't sleep."

Ques: c.      ɔ- re- kɔ- da?  
3sg:Prog:Aux:sleep  
"Is s/he going to sleep?"

Ans:            Daabi, ɔ- re- n- da.  
No    3sg:Prog:Neg:sleep  
"No, s/he won't sleep."

Though the answer remains the same for the different questions in (14), certain nuances of meaning may be recoverable from the auxiliaries in the questions that precede this answer. The answers to the questions in (14a, b, c) could, therefore, be interpreted as: "*No, s/he is not about to come to sleep*", "*No, s/he is not going to sleep*", and "*No, s/he won't sleep*" respectively.

The examples in (14) depict the neutralization of tense and aspect in the negative sentence stated earlier. This phenomenon is not peculiar to Akan. Payne (1985:160) states that such neutralizations are not infrequent in the languages of the world and that it may be the result of "the failure of negative paradigms to catch up

with developments in positive paradigms.” He cites languages like Komi (a Permian language spoken in the northwestern parts of the former USSR) in which the negative verb serves as the negative form corresponding to both present and future tenses and Logbara (or Lugbara, a Central Sudanic language spoken in Uganda and Zaire) in which in the negative, a past tense form is used to correspond to a positive one in the present or future. Ejike Eze (p.c.) informs me that in Igbo (another Kwa language spoken in Nigeria), the present, past and future are almost always marked morphologically but in negative sentences in the past, there is no such marking<sup>4</sup>.

It is possible to have versions of the negated Akan sentences in which the tense and aspectual distinctions are preserved. Such structures are common in the written form of the language and they may also be heard in deliberate speech and in songs<sup>5</sup>. For example:

- (15) a.   ɔ- re- n- bɛ-da.  
           3sg:Prog:Neg:Aux:sleep  
           “S/he is not coming to sleep.”
- b.   ɔ- n- bɛ- da.  
           3sg:Neg:Aux:sleep  
           “S/he won’t come to sleep.”

---

<sup>4</sup>There may be some semantic explanation(s) for this phenomenon instead of just the inability of one paradigm to catch up with the other. A discussion of this is, however, beyond the scope of this study.

<sup>5</sup> While working on this chapter, I was listening to an Akan song in which the sentence

ɔ- re- n- gyaɛ me.   “S/he won’t abandon/desert me”.  
 3sg: Prog: Neg: abandone me

was used frequently — a confirmation of the fact that these forms actually occur in the language.

- c.    ɔ- re- n- kɔ- da.  
           3sg:Prog:Neg:Aux:sleep  
           “S/he is not going to sleep.”

The presence of the future Auxes *bɛ* or *kɔ* in these negative sentences forces a reading in which the meanings of *ingressive* action (i.e., event to take place proximate to the speaker) and *egressive* action (event to take place away from the speaker) are prominent as shown in their English translations.<sup>6</sup>

## 2.2 An Analysis

The architecture of the sentence has changed considerably in the recent literature in generative grammar. Following from the work of Pollock (1989), Chomsky (1989), Ouhalla (1990), Laka (1989; 1990), among others, a split INFL in which such elements as Tense, Aspect, Aux, and Neg are functional heads which project their own phrases has been assumed. Languages are parameterized with

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<sup>6</sup> The Prog morpheme is usually represented in the orthography though it may not be phonetically realized in speech. One is likely to hear:

- |     |        |            |          |                               |
|-----|--------|------------|----------|-------------------------------|
| i.  | ɔnda   | instead of | ɔrenda   | “S/he won’t sleep.”           |
| ii. | ɔnbedɑ | instead of | ɔrenbedɑ | S/he won’t (come and) sleep.” |
| ii. | ɔnkɔdɑ | instead of | ɔrenkɔdɑ | “S/he won’t (go and) sleep.”  |

Some writers use the spoken form in writing. It is possible to say that the morpheme is not present at all in the derivation of (i) & (ii) or to say that it is present in D-Structure but unrealized in PF. I favour the second view because the same thing happens with affirmative sentences as well, e.g.:

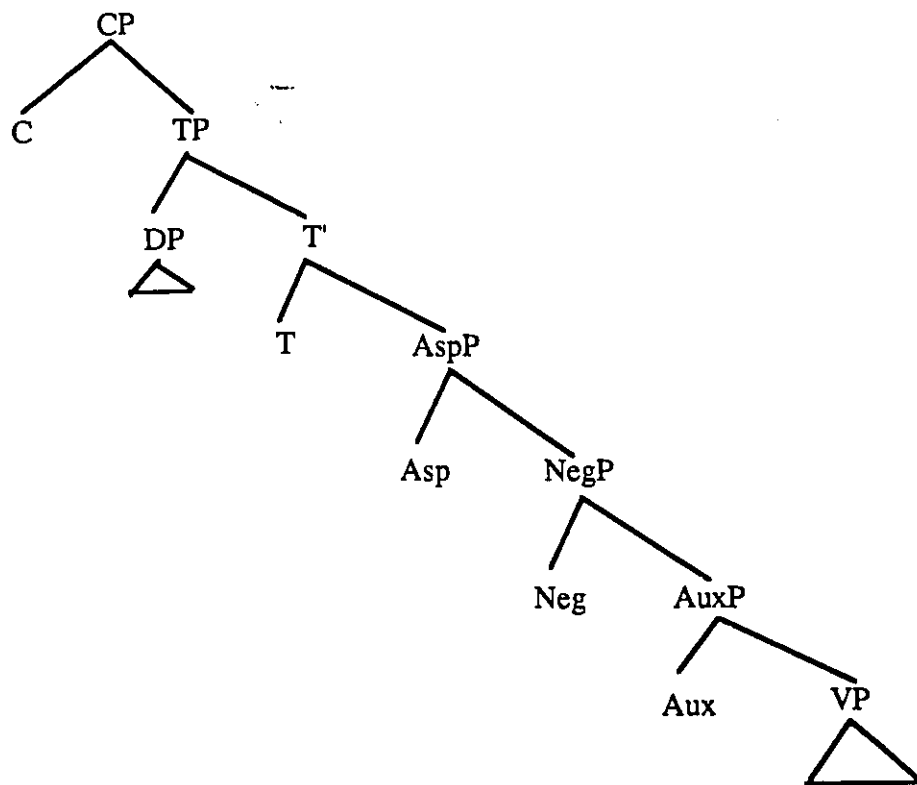
- |      |       |            |         |                         |
|------|-------|------------|---------|-------------------------|
| iii. | ɔkɔdɑ | instead of | ɔrekɔdɑ | “She’s going to sleep.” |
|------|-------|------------|---------|-------------------------|

where the Prog morpheme *re-* is not pronounced and the vowel of the 3sg pronoun is lengthened. In the absence of the Prog morpheme, the (nasal) Neg morpheme is slightly longer in duration than when it occurs in simple tenses.

respect to the position of these functional heads relation to each other in the sentence. For example, Ouhalla (ibid.) parameterizes languages into two: i) those like Italian in which Neg selects Tense as its complement, and ii) those like English in that Neg selects VP as its complement. These types of languages exist in the syntax as well as the morphology. I will follow these analyses and postulate that the Tense, Aspect and Neg morphemes in Akan project their own phrases.

Abstracting from this, I propose (16) as a simplified basic clause structure in Akan:

(16)



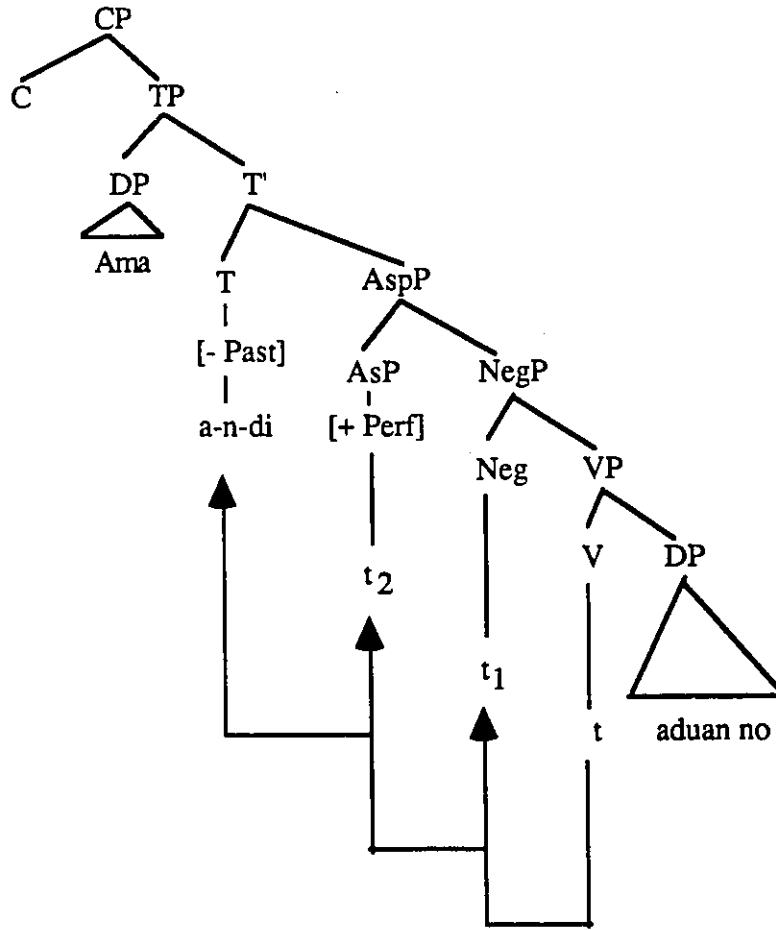
With the structure in (16), it is possible to account for how the verb receives the affixes discussed above in two ways: i) is to say that the affixes are lowered on to the verb — Affix-Lowering, as postulated by Chomsky (1981, 1989) for English, or ii) to say that the verb moves successive cyclically up the tree to receive the affixes — Verb-Movement/Raising, as in Pollock (1989), Ouhalla (1990).

The first option, Affix-Lowering, would involve potential ECP violations because the traces of the lowered affixes would fail to be antecedent-governed for lack of m-command. To remedy this would involve postulating an LF raising of the combined verbal complex up the tree to remove the resulting illegitimate traces (cf. Chomsky, 1989). This kind of analysis also goes against Chomsky's own (ibid.) "Principle of Least Effort" or economy principles (see Chomsky, 1989) which favour shorter derivations over longer ones. A derivation may be deemed to be long or short depending on the number of steps involved in it and lowering affixes on to a verb and then raising the verbal complex at LF to wipe out the illegitimate traces certainly will involve more steps than an analysis that can account for the same facts in one fell swoop.

The second alternative is to adopt an economy framework and assume that the verb must move up the tree to receive the Tense, Negation, Aspect, and Auxiliary affixes to create the verbal complexes shown in the examples in (3) - (8). According to this analysis, the derivation of a sentence like (17a) will be that in (17b):

- (17) a. Ama a- n- di aduan no.  
 A. Perf:Neg:eat food the  
 "Ama didn't eat the food."

b.



The verb *dí* “eat” moves up the tree to be marked for negation, leaving behind the trace *t*. The [Neg + V] complex then moves up the tree to receive the aspectual (Perf) morpheme, again leaving a trace *t*<sub>1</sub> behind. The combined structure then moves up to T to be marked for tense (which is non-past in this case) and leaves the trace *t*<sub>2</sub>. From there the fully inflected verb assigns nominative case to the DP in the Spec of TP. The traces are each antecedent-governed and therefore satisfy the ECP. Neg, it must be noted, does not block the movement of the verb or verbal

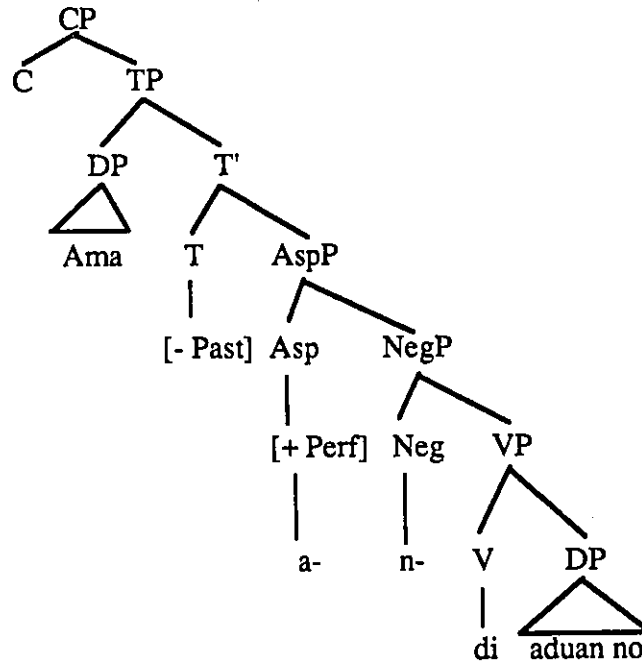
complex to or through it in the way that *not* does in English (cf. Pollock 1989, Chomsky, 1989).

A V-Raising account, as presented above, does not seem to be required for the language. Such an account has to be empirically motivated, but so far, I have not come across any evidence (like that used in Pollock, 1989; and Ouhalla, 1990 to argue for V-raising in English and French. See also Rivero, 1994 for such arguments for the languages of the Balkans, and Manfredi, 1988 for Abe) to suggest that this is the case in Akan. First, the affixes that express Tense, Aspect, Negation, and the Auxiliaries occur in a fixed order, adjacent to each other as exemplified in (3) - (8) and in the tree in (16). This order cannot be changed as the ungrammatical (5c) and (6c) show. Second, no element, such as an adverbial, can intervene between the verb stem and the affixes or between one affix and the other(s). This suggests that neither an Affix-Lowering nor a V-Raising account is needed to account for the verb inflection in Akan. Besides that, recent discussions in the literature (e.g., Halle and Marantz, 1993; Lasnik, 1994) have shown that there is an alternative to Affix-Lowering and/or V-Raising in accounting for how the verb receives inflectional morphemes in a variety of languages. This alternative, which is Morphological Merger, involves no movement and appears to be the one best suited for accounting for the Akan facts.

I will, therefore, assume, following Marantz (1984, 1988), Halle and Marantz (1993), and Lasnik (1994), that the inflected verb (verbal complex) in Akan is formed by a process of morphological merger by which the structurally adjacent Tns, Asp, Neg and Aux morphemes are joined to the verb in PF, thereby forming a sequence as they appear in the tree in (16). In other words, I follow the assumption that the verb stem picks up inflectional morphemes through "head merger under structural adjacency" which is a syntactic operation (Halle and Marantz, 1993: 166).

Based on this assumption, the derivation in (17b) is to be rejected in favour of the one in (17c) below:

(17) c.



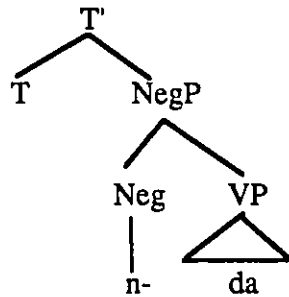
There appears to be a problem regarding the positioning of the Neg morpheme in Akan. Examples such as (18a) and (18b) show that it is possible for the Neg morpheme to have either the VP or the AuxP as its complement:

(18) a.   ɔ-   n-   da.  
          3sg:Neg:sleep  
          "S/he will not sleep."

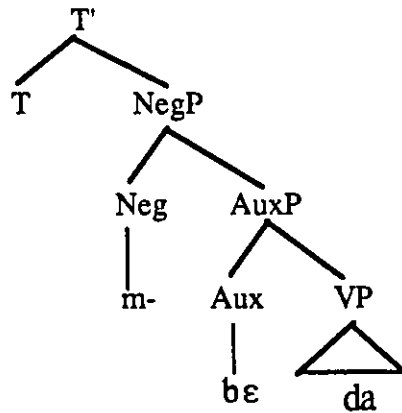
b.   ɔ-   m-   be-da.  
          3sg:Neg:Aux:sleep  
          "S/he will not (come to) sleep."

The examples may be given the partial tree representations in (19) which show a difference in the positioning of the Neg morpheme. In (19a) Neg selects VP as its complement and in (19b), it selects AuxP.

(19) a.



b.



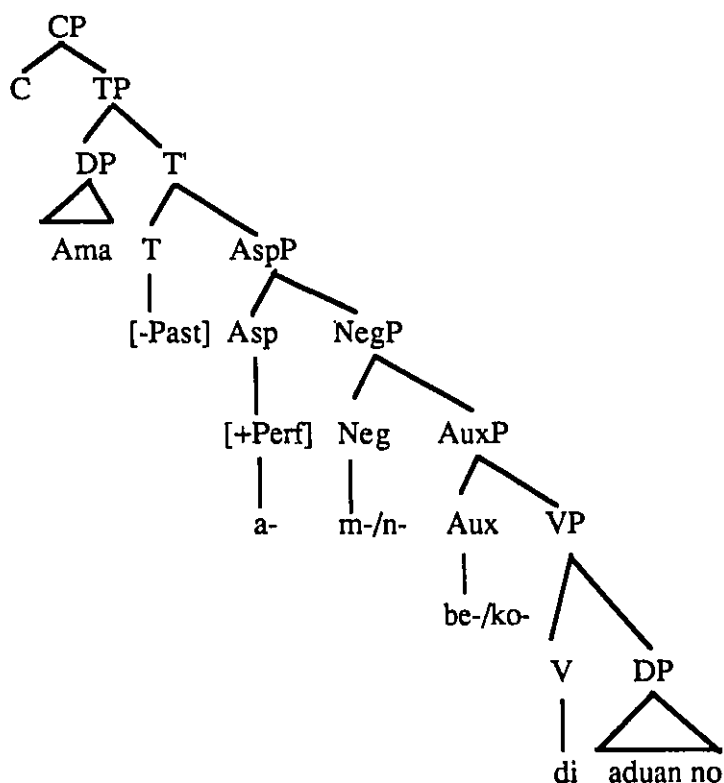
To account for the fact that the Neg morpheme may select either VP or AuxP as shown in (19), I follow the current views on functional heads (see Rivero, 1993 and the works cited) and consider any of the heads to be absent if it does not contain lexical material. In other words, such heads do not show up in PF after

morphological merger has taken place because they are not lexically represented. On such a view, the derivation in (17b), for instance, is explained: Aux is not represented in the structure because it contains no lexical material. This yields a structure in which Neg immediately precedes the verb (i.e. is a sister of VP).

In examples such as (20 a & b), Aux is present in the form of the morphemes **be/be** and **ko/ko** which intervene between the Neg morpheme and the VP. These sentences have the representation in (21).

- (20) a. Ama a- m- be- di aduan no.  
A. Perf:Neg:Aux:eat food the  
“Ama didn’t come to eat the food.”
- b. Ama a- n- ko- di aduan no.  
A. Perf:Neg:Aux:eat food the  
“Ama didn’t go to eat the food.”

(21)



The inflectional affixes, which are independent morphemes in their own right, merge with the verb stem yielding the complex (inflected) verbs **ambedi** "did not come to eat" and **ankodi** "did not go to eat" as in (20a, b).

All the verbal affixes in Akan, except Tense (which may be expressed by tone, especially for present tense, and a vowel suffix for past tense) may be absent in the sentence. The bare verb can only be used in cases of verb focusing (see example (23) below). Whenever the Asp(ectual) morpheme is present in the sentence, the verb lacks Tense. In such cases, the temporal values appear to be

derived from Asp<sup>7</sup>. The fact that all the affixes are prefixes, except Tense, does not pose any problem for the process of morphological merger as advocated for here. Those affixes that are prefixes will join to the left of the verb stem while those that are suffixes will join to the right of the verb stem. As Marantz puts it,

Morphemes determine their relative ordering within a word by morphological subcategorization features; affixes stipulate that they appear to the left or to the right of a stem of a certain type. Thus relations between morphemes are mapped onto left/right adjacency relations at phonological structure, and the order of morphemes within a word is generally fixed.

(Marantz, 1988: 258)

### 2.3 Adverb Placement

The syntax and semantics of adverbs has received considerable attention in the linguistic literature (e.g. Jackendoff, 1972; Bellert, 1977; Rivero, 1992, to mention a few). Some writers, starting with Pollock (1989) and Chomsky (1989) use the positioning of adverbs to argue for a particular structure of the sentence (i.e., IP) in

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<sup>7</sup> Marisa Rivero (p.c.) informs me that some sentences may lack Tense and that in such cases, temporal values derive from Aux which seems to contain modality and Aktionsart indicators. It seems to me that in Akan, what expresses the temporal value(s) is the Asp morpheme, not what I have labelled as Aux. The Asp morpheme a- combines with the bare verb to express an action completed in the present as in (i); it may also combine with Neg and the bare verb to indicate an action not completed/commenced in the past (ii):

- (i) Kofi a-ba. "Kofi has come".  
K. Perf:come
- (ii) Kofi a-m-ba. "Kofi did not come", (Not: "Kofi didn't come".)  
K. Perf:Neg:come

To express the English equivalent of "Kofi hasn't come", (iii) will be used:

- (iii) Kofi m-ba-e. "Kofi hasn't come", (not: "Kofi didn't come").

For a discussion of this and other issues, see Saah, (1994).

Universal Grammar. Pollock and Chomsky treat the word *not* in English, for example, as an adverb and account for the ungrammaticality of structures like the one in (22) in terms of the inability of the finite verb to raise across *not* in English while it is possible across other adverbs:

(22) \*John left not.

It appears that whether we analyze the Neg element in Akan as a preverbal adverb or not, it does not affect the analysis presented in this study because of its affixal nature and the fact that the Neg morpheme and the other elements that are attached to the verb, occur in a fixed order.

In the following sections, I will give a brief description of the positioning of two types of adverbs in the Akan sentence. The two are time and manner adverbials.

### 2.3.1 Time Adverbials

Time adverbials occur in the sentences like those exemplified in (23):

- (23) a. Kofi baa ha nnera/ anɔpa yi.  
 K. came here yesterday/ morning this  
 “Kofi came here yesterday/this morning.”
- b. Nnera/ anɔpa yi, Kofi baa ha.  
 Yesterday/morning this K. came here  
 “Yesterday/this morning, Kofi came here.”

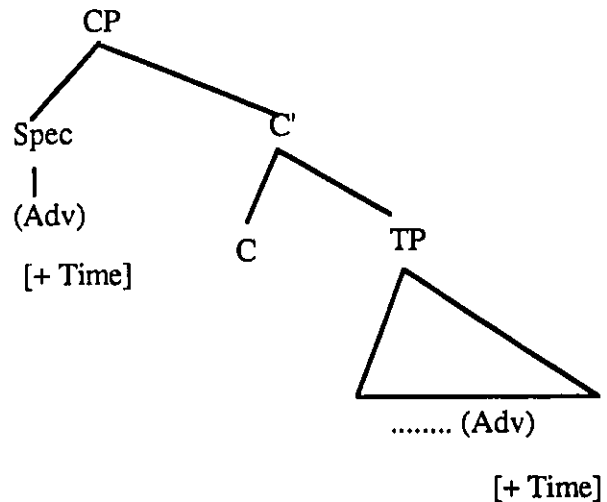
- c. Nnɛra/ anɔpa yi /nɔnɔwɔtwe na Kofi  
 Yesterday/morning this bells eight Foc K.  
 baa ha.  
 came here  
 “Yesterday/ this morning it was that Kofi  
 came here.”

The examples in (23) give interesting facts about time adverbials that can be summarized as follows:

- i) They generally occur in sentence-final position.
- ii) They can all appear in a topicalized position as in (23b) or in a focused position with the focus marker (FM) *na* attached to it as in (23c) <sup>8</sup>.

This means that time adverbials occur in the two positions indicated in (24):

(24)

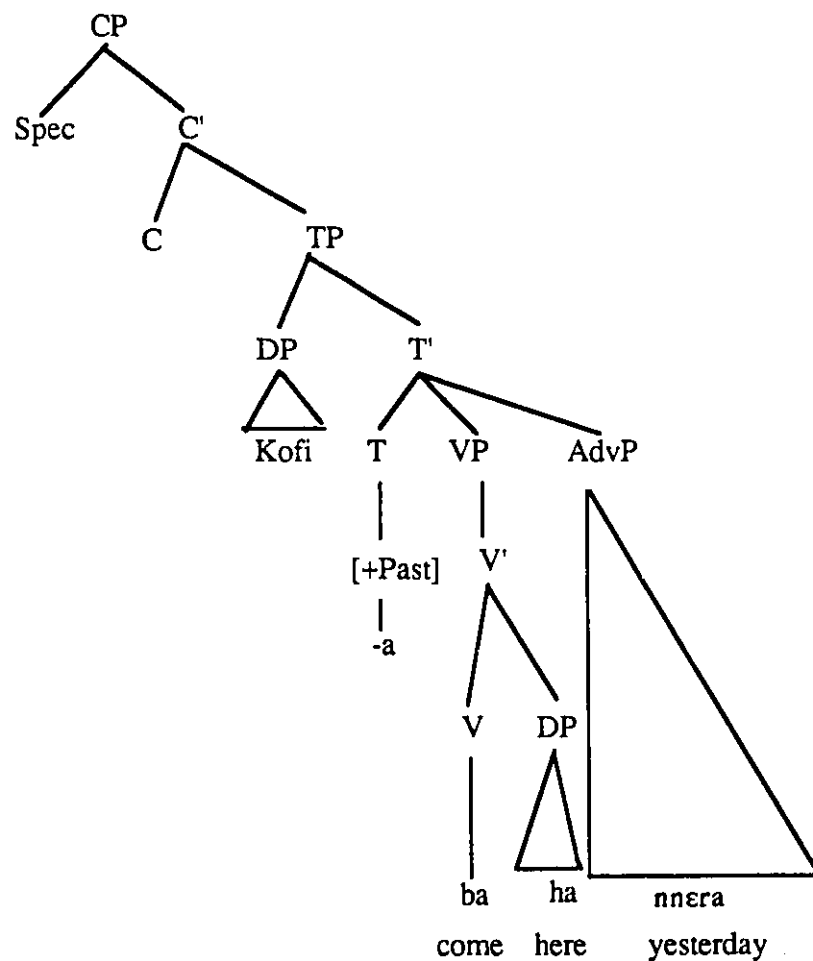


<sup>8</sup> The examples are acceptable with the *de(ɛ)* focus marker, howbeit with a different interpretation. For example:

Nnɛra dc(ɛ) Kofi baa ha. "(As for) yesterday, Kofi came here."  
 Yesterday Foc. K. came here

To account for the two positions of the time adverbs in the language as depicted in (24) I will make two assumptions. First, following Chomsky (1986) and Rivero (1992), I will assume that time adverbials (which refer to deitic points in time) are predicated of INFL (where INFL, in my analysis, is made up of the fully inflected verb as described in section 2.2. This means that the time adverbial is a syntactic adjunct to TP or AspP as indicated by Rivero (*ibid.*). On this assumption, one of the sentences in (23a), for example will have the representation in (25):

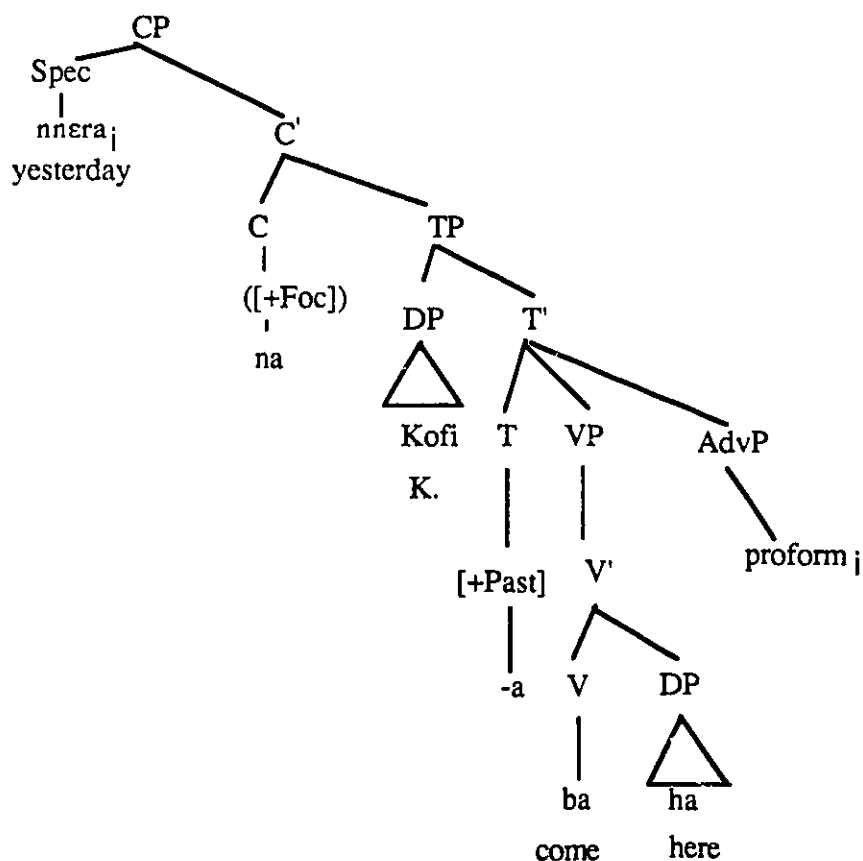
(25)



Second, I will assume that time adverbials, like other constituents in an Akan sentence, can be focused by being base-generated in [SPEC, CP] as described in Saah (1991; and chapter 5 of this work).

Talking about focus marking in Akan, I mentioned that a focused constituent is base-generated in [SPEC, CP] and a resumptive pronoun (overt or covert) base-generated in situ in the case of NPs/DPs. I will extend this analysis to adverbs by saying that a proform of the adverb is generated in situ but this proform is never phonetically realized. (23b) and (23c) can be accounted for in this way, the only difference between them being the absence of the focus marker in the former and its presence in the latter. Both sentences will be given the representation in (26):

(26)



It is interesting to note that when a verb or an adjective is focused, it is base-generated in [Spec, CP] as well as in situ. For example,

- (27) a. Ba na Kofi baa ha.  
 Come Foc K. came here  
 "Come Kofi came here." / "It was **come** that Kofi came here".
- b. Fε na εye fε.  
 Beautiful Foc. it is beautiful  
 "**Beautiful** it is beautiful" / "It is **beautiful** that it is (beautiful)"

(Boadi 1974:37, ex. 43, glosses mine)

As (27a) shows, the infinitive form of the verb is base-generated in the focused position (i.e. Spec, CP) and a form of the verb with the appropriate tense affix(es) generated in situ in the embedded IP. This is to be expected from the analysis outlined in this chapter. The verb in situ is within the IP where the tense and other inflectional categories are projected so it can receive these affixes through morphological merger. The focused verb, on the other hand, is not m-commanded by any such projections so it cannot receive tense and other affixes<sup>9</sup>.

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<sup>9</sup> The inflectional differences between antecedent verbs and in-situ verbs in Akan focused constructions is reminiscent of the differences between the inflections of antecedent verbs and elided verbs in English. The difference is that in Akan, the base or uninflected verb antecedes the inflected verb while in English, the opposite is the case as the following examples from Lasnik (1994: 21) show:

- i. a. John *slept*, and Mary will too.  
 b. John *slept*, and Mary will *sleep* too.

If there is negation in the sentence, this will only be possible in the complement IP as (23a) shows:

- (23) a. Ba de Kofi a- m- ba ha.  
 Come Foc K. Perf.Neg come here  
 “Come Kofi didn't come here”/ “It is come that Kofi didn't come here.”
- b. \*M-ba de Kofi (a- m-) ba ha.  
 Neg:come Foc K. Perf Neg come here

The sentence implies that Kofi did not come here, but he might have done something else. As can be seen from the example, the verb in the embedded IP carries the aspect and negation affixes while the focused verb does not.

### 2.3.2 Manner Adverbials

Syntactically, manner adverbials behave differently from time adverbials with respect to their position(s) in sentences. They occur in such examples as (29):

- (29) a. Wɔ kasa brɛoo/ deneenen/ nyansa mu.  
 They speak slow(ly)/ loudly/ wisdom in  
 “They speak slowly/loudly/wisely.”
- b. \*Brɛoo/ abufuw mu na wɔ kasa.  
 Slowly/ angrily Foc. they speak  
 “They speak slowly/angrily.”

- 
- ii. a. John *sleeps* (every afternoon), and Mary should too.  
 b. John *sleeps* (every afternoon), and Mary should *sleep* too.

- c.    Wɔ    de    abufuw/nyansa    kasa.  
       They take anger /wisdom    speak  
       "‘They speak angrily/ wisely’"
- d.    \*Wɔ   de    brɛoo/ deneenen    kasa.  
       They take slow(ly)/loudly   speak  
       "‘They speak slowly/loudly.’"

The examples in (29) show that while all the adverbs of manner can appear in sentence-final position (i.e., after the VP); some like **abufuw** "anger" can occur in a position after the subject DP. In this position they appear as the complements of the verb **de** "take/with" and before the VP. Some manner adverbs like **brɛoo** "slowly" and **deneenen** "loudly" cannot occur in the **de+Adv** construction.

It is possible to subdivide the manner adverbials into two as in (30):

- |         |                    |    |                     |
|---------|--------------------|----|---------------------|
| (30) a. | abufuw "anger"     | b. | brɛoo "slowly"      |
|         | nyansa "wisdom"    |    | bɔkɔɔ "softly"      |
|         | ahɔɔden "strength" |    | basaa "haphazardly" |
|         | anigye "happiness" |    | deneenen "loudly"   |

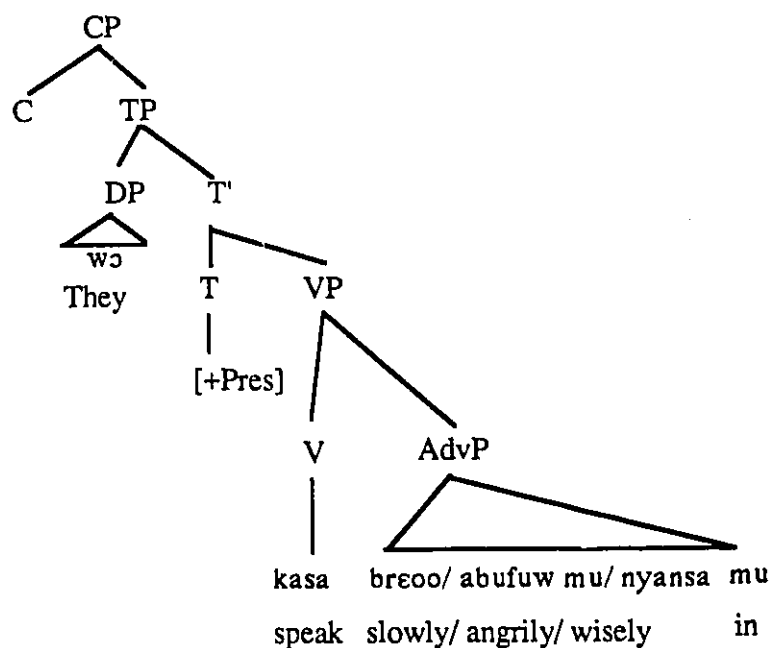
Those in the (a) group are basically nouns that are used as adverbs and they are the ones that can occur in the structures exemplified in (24a,b). Note that when used after the verb, these adverbials are followed by postpositions such as **mu** "in"/"in the manner of" **so** "on"/"in the manner of" etc. in the language. Those in the (b) group may be regarded as the 'true' manner adverbials in the language and they can only occur after the verb.

I will assume that the manner adverbials in Akan, like their counterparts in other languages, are base-generated VP-internally as subcategorized complements of V<sup>0</sup> as shown in the structure in (31) which is adapted from Rivero (1992: 7):

(31) [VP [V' V<sup>0</sup> AdvP]]

The sentence in (29a), for instance, will have the abbreviated representation in (32):

(32)



Regarding the example in (29c), I assume, without discussion, that it involves a serial verb construction (SVC) in which the manner adverbial is the complement of the verb *de* "take"/"with". The verb *dè* can be used to mean "take, use, with", etc., depending on the meaning expressed by the second verb in the construction. As has been noted in the literature (e.g. Christaller, 1875; Lord, 1982;

etc.), it is used to mark an NP as *Instrument*, *Patient*, and *Comitative* as in the examples in (33 a, b, c) respectively:

- (33) a. Ama de safe buee dan no.  
A. DE key opened door the  
"Ama opened the door with the key."
- b. ə- de aduan no sii gya so.  
3sg:DE food the put fire on  
"S/he put food on the fire."
- c. Kofi de Adwoa kɔɔ sene.  
K. DE A. went cinema.  
"Kofi took Adwoa to the cinema."

It is possible to assume that the verb *de* "take/with" projects a functional phrase (i.e. a Kase Phrase, KP, see Déchaine, 1993) above TP or AspP and that it assigns the *Instrument*, *Patient* or *Comitative* case to its complement. The verb *dè*, as Lord (1982) rightly points out, has lost many of its original semantic and syntactic properties. It cannot inflect for tense/aspect; it does not usually occur as an independent verb; and when negated, a suppletive form *mfá* "not take" is realized. It appears that its main function in the language now is as a case-marking preposition which has the general meaning of "with/take". It is not surprising that the adverbials that are used in the *de*-constructions belong to the (a) class in (30). This class is made up of nouns that are used as adverbials.

### 2.3.3 Summary

In this chapter, I have given a brief introduction to the structure of the sentence in Akan. A lot of details have been omitted for lack of space. It has been shown that Akan is an SVO language and that verbal inflection is achieved by means of morphological merger which joins the inflectional affixes to the verb. I have not, discussed for example, issues involving subject and object placement in the language. One such idea is the VP-Internal Subject Hypothesis (see, for example, Belletti and Rizzi, 1981; Lasnik and Saito, 1992; Manzini, 1988, 1992; Koopman and Sportiche, 1990) which sees the subject of a sentence as being base-generated in the specifier position of the verb before being moved to the Spec of IP/TP. This kind of analysis may be extended to Akan but it is not my intention to do so here. Saah and Eze (1994), for example, provide a *Minimalist* account which sees both subjects and objects in Akan and Igbo as being base-generated VP-internally and then moved to the specifier positions of AgrSP and AgrOP to check agreement features.

## Chapter 3

### Wh-in-Situ Questions

#### 3.1. Introduction

There is a certain amount of variation among the languages of the world with respect to the surface forms of wh-questions. The *Principles and Parameters* framework of generative grammatical theory of Chomsky (1981; 1982, etc.) accounts for this diversity in terms of the setting of parameters for the rule of *Move  $\alpha$* . For some languages, *Move  $\alpha$*  must be obligatorily applied to move a wh-word or phrase to a clause-initial position in the syntax; for some it may not be applied. This produces two main patterns of languages with respect to the placement of wh-words, especially in structures involving a single wh-word/phrase: i) On one hand are languages like English in which syntactic movement of the wh-word or phrase to sentence- or clause-initial position is obligatory as is evident in the examples in (1). (1b) is ungrammatical as a genuine request for information but acceptable as an *echo-question*.

- (1) a. Who did Dinah see?  
b. \*Dinah saw who?

(ii) On the other end of the scale are those languages like Mandarin Chinese and Japanese (Lasnik and Saito, 1992; Cheng, 1991; Huang, 1982; and Aoun and Li, 1990) in which syntactic wh-movement does not occur. In such languages wh-words remain in the same syntactic position as non-questioned constituents which fulfill the same grammatical function would occur, that is, in situ. In Japanese, for example, it is not possible to have a counterpart for (2) in which the wh-word is moved to a clause-peripheral position:

- (2) John-wa nani-o kaimasita ka.  
 John-top what-acc bought Q  
 "What did John buy?"

(Lasnik & Saito, *ibid.* p.1, ex. 2)

There appears to be a third group of languages, those like French in which syntactic wh-movement is optional in direct questions. In this kind of language, wh-words/phrases may either appear in clause-initial position or remain in situ as shown in the examples in (3):

- (3) a. Qui as-tu vu?  
 b. Tu as vu qui?  
 "What did you see?"

Akan appears to be like French in that wh-words/ phrases may be placed in a pre-IP position or remain in situ. For example, in (4a) the wh-word **hena** "who" is in sentence-peripheral position followed by the focus marker **na** before the complement IP. A resumptive pronoun<sup>1</sup> is in object position after the verb **huu** "saw". In (4b), the wh-word is in situ, after the verb **huu** "saw".

- (4) a. Hena na wohuu no?  
 Who Foc you:saw him/ her  
 "Who you see him/her?"/ "Who did you see?"

---

<sup>1</sup> A full discussion of resumptive pronouns in Akan will be presented in chapter 4.

- b.      Wohuu hena?  
          You:saw who  
          "You saw who(m)?"<sup>2</sup>

Based on examples like those in (4a, b), Akan may be analyzed as an optional movement language, but as I will show in subsequent sections, it is an in-situ language like Mandarin Chinese, Japanese, and Egyptian Arabic (Cheng, 1991). I will show (in chapter 5) that those sentences in which the wh-word appears in clause-peripheral position are not the result of syntactic wh-movement but rather the focus marking rule in the language which can affect any constituent in both declarative and interrogative sentences.

In the following sections, I will: i) establish that unlike what happens in English, sentences like (4b) are genuine wh-questions requiring an answer; they are not *echo-questions*, ii) show that while most questions in Akan have both in situ and focused versions, there are some in which the wh-word/ phrase can only be either in situ or in a pre-IP position, and iii) discuss how wh-in-situ questions in Akan receive their interpretation in the light of recent discussions of that topic.

### 3.1.2 Wh-in-Situ in Akan

Wh-questions in Akan are introduced by the words/phrases like those in Table 1.

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<sup>2</sup> I will translate the Akan sentences into English with the wh-word in situ most of the time, e.g.:  
*You saw who*, instead of *Who did you see?*

The rationale for this will become clear when we begin to compare wh-in-situ questions with those with focused wh-words.

**Table 1: Akan Wh-words/ phrases<sup>3</sup>**

---

|  |                           |
|--|---------------------------|
| i. (ε)hena (Ak.); hae (As.); woana (Fa.) | "who"                     |
| ii. (ε)he (Ak., As.); hen(fa) (Fa.)      | "where"                   |
| iii. ahe (Ak. As.); ahen (Fa.)           | "how much/ how many"      |
| iv. sɛn (As.)                            | "how much; how many"      |
| v. den                                   | "what"                    |
| vi. aden                                 | "why"                     |
| vii. den ade (Ak., As.)                  | "what/ what thing/reason" |
| viii. bɛn (Ak., As.), eben (Fa.)         | "what/ which"             |

---

**Bɛn** "which/what", for example, is a kind of general purpose word that can be attached to any noun to turn it into a wh-phrase as in: **onipa bɛn**, "which person"; **ade bɛn** "what/which thing"; **asɛm bɛn** "what matter" (see Boadi 1990, and Saah 1983). The Fante version **eben** "which/what" precedes the noun it occurs with: **eben adze**, "what thing/ matter"; **eben nyimpa** "what/ which person"; **eben asɛm** "what matter", and so on. The question words and phrases may be used in examples like those in (5):

- (5) a. (ε)hena na ɔbaa ha?  
 Who Foc. 3sg:came here  
 "Who came here?"

---

<sup>3</sup> Where different versions of a particular sentence or form are given for the three major dialects, the following abbreviations (indicated in parentheses after each form) show the dialect(s) in which a particular form or forms occur: Ak. = Akuapem; As. = Asante; and Fa. = Fante.

- b. Wohuu hena wɔ hɔ?  
 You:saw who there  
 "You saw who there?"
- c. Den/den ade na Kofi tɔɔe?  
 What/what thing Foc. K. bought  
 "What (thing) did Kofi buy?"
- d. Kofi tɔɔ den/den ade?  
 K. bought what/what thing  
 "Kofi bought what (thing)?"
- e. Onipa ben na wohuu no?  
 Person which/what Foc. you:saw  
 "Who/which person did you see?"
- f. Wohuu onipa ben?  
 You:saw person which/what  
 "You saw who/which person?"

In a language like English, questions such as (4b, 5b, d, and f) which have their wh-elements in situ (i.e. in the same position as the questioned constituent) are usually analyzed as echo-questions. They are said to be used in reaction to someone's statement or to get an interlocutor to repeat a statement or part of it (Haegeman 1991: 278). In Akan, such sentences may only be analyzed as echo-

questions only in a very restricted context. For example, if in an altercation, A makes the statement in (6A), B could counter by uttering (6B):

(6) A: M'εbo wo!  
I:will beat you  
"I'll beat you up!"

B: Wobebo hena/ hae?  
You:will beat who  
"You'll beat who?"

B's reply (6B) is clearly challenging A to repeat his/her statement and could be analyzed as an echo-question.<sup>4</sup> In normal usage, however, such sentences are genuine wh-questions used to seek information<sup>5</sup>.

Every syntactic position (i.e. every constituent in a sentence), can be questioned in situ. For example:

(7) a. Wohuu hena? (Direct Object)  
You:saw who  
"You saw who?"

---

<sup>4</sup> If A is really spoiling for a fight, s/he will answer:  
Wo! "You".

<sup>5</sup> Wh-in-situ questions are used so frequently and in so many circumstances (oral and written) as to be dismissed as mere echo-questions. For example, in the *Language Guide* for beginners in Akan, 33 out of a total of 52 (i.e. 63%) of the wh-questions were wh-in-situ for the Fante and Akuapem versions.

- b. Kofi dii den?  
K. ate what  
"Kofi ate what?"
- (8) a. Wotɔɔ akutu maa hena? (Indirect Object)  
You:bought oranges gave who(m)  
"You bought oranges for who(m)?"
- b. Ama too ndwom kyerɛɛ hena?  
A. sang song show who(m)  
"Ama sang for who(m)?"
- (9) a. Wohyiaa Efua bere ben? (Temporal Adjunct)  
You:met E. time which  
"You met Efua when?"
- b. ɔfaa sika no wɔ he? (Locative Adjunct)  
3sg:took money the at where  
"S/he took the money where?"

While examples (10a, b) show that the direct and indirect objects respectively can be questioned in situ, and (10c) shows that both can be simultaneously questioned in situ. (11) involves an indirect question with an in situ wh-word.

- (10) a. Wokaa den kyereɛ no?  
 You: said what show him/her  
 "You said what to him/her?"
- b. Wokaa asem no kyereɛ hena?  
 You:told story the show who(m)  
 "You told the story to who(m)?"
- c. Wokaa den kyereɛ hena?  
 You:said what show who(m)  
 "You said what to who(m)?"
- (11) Obisaa Esi se [ohuu hena]?  
 3sg:asked E. that [she saw who]  
 "S/he asked Esi that [she saw who]?"

All these examples show how productive the phenomenon of in-situ wh-questions are in Akan. It is also possible to have subject wh-in-situ questions as I will demonstrate in the next section.

### 3.1.3 Subject Wh-in-Situ

Questions involving subjects pose some theoretical problems in a grammar that embodies the rule of *Move α*. In a language like English in which the wh-word must move obligatorily, it is easy to analyze the wh-words in (12) as having undergone syntactic movement:

- (12) a. Who will John see?  
b. Who do you think will see John?

In both examples, the effect of movement can be observed by looking at the representations in (13):

- (13) a. [<sub>CP</sub> Who<sub>i</sub> [<sub>IP</sub> will John see t<sub>i</sub>]]?  
b. Who<sub>i</sub> do you think [<sub>IP</sub> t<sub>i</sub> will see John]?

(12a) with the representation in (13a) involves the questioning of an object and (12b) represented in (13b) questions the subject in an embedded question. Both show that syntactic wh-movement is permitted in English and the effect of movement is clearly observable in the surface strings. But what happens in the case of a simple direct question involving a subject as in (14)?:

- (14) Who will see John?

The wh-word is in the 'normal' position for a subject, it does not show any sign of movement as far as the surface string shows. While we may say that the wh-word is in situ at S-structure, such sentences are said to have undergone *vacuous movement* by Chomsky (1986: 48-54).

In most of the Akan dialects (e.g. Akuapem, Asante, and Agona), it is not possible for the subject wh-word to occur without the focus marker in pre-IP position and a subject resumptive pronoun in the complement IP. In other words, these dialects do not allow subject wh-words to occur unfocused. For example,

- (15) a. \*Hena baa ha?  
 Who came here  
 "Who came here?"
- b. [CP Hena<sub>i</sub> na [IP ə<sub>i</sub>-baa ha?]]  
 Who Foc 3sg: came here  
 "Who came here?"

(15a) with the wh-word in situ is not licit in a majority of dialects<sup>6</sup>. (15b) is the only accepted form. In the Fante dialect, however, it is possible for the wh-word to occur unfocused. This can be seen in the following pairs of examples involving unfocused and focused wh-words:

- (16) a. Woana baa ha?  
 Who came here  
 "Who came here?"
- b. Woana<sub>i</sub> na [ ə<sub>i</sub>-baa ha]?  
 "Who came here?"

---

<sup>6</sup> The kind of structure in (15a) is only possible as part of a multiple interrogation as in:

- i. Hena na hena bəə no? "Who was hit by who?"  
 Who Foc who hit 3sg
- ii. Den na hena tse? "What was bought by who?"  
 What Foc. who bought

It seems to me that in cases of multiple interrogation, when one wh-element appears in Spec of CP, the other wh-element may appear in subject position of the complement IP without the focus marker (i. e. it is unfocused). In other words, only one wh-element can be focused at a time in structures involving multiple interrogation. This applies to all the dialects.

- (17) a. Woana bɔɔ kɔɔpɔw no?  
 Who broke cup the  
 "Who broke the cup/mug?"
- b. Woana<sub>i</sub> na [ɔ<sub>i</sub>-bɔɔ kɔɔpɔw no]?  
 Who Foc 3sg:broke cup the  
 "**Who** broke the cup/mug?"
- (18) a. Woana somaa wo wɔ mo hɔ?  
 Who sent you to my place  
 "Who sent you to me?"
- b. Woana<sub>i</sub> na [ɔ<sub>i</sub>-somaawo wɔ mo hɔ]?  
 Who Foc 3sg:sent you to my place  
 "**Who** sent you to me?"

The existence of pairs of sentences as in (16) - (18) is an indication of the fact that wh-words can be focused or unfocused in Fante.

There appears to be some differences in grammaticality judgements of the focused and unfocused subject wh-words based on the tense and/or aspect of the sentence. The few Fante speakers I have consulted differ on their acceptance of the following pairs of sentences:

- (19) a. Woana<sub>i</sub> na [ɔ<sub>i</sub>-robɔ abow no mu]?  
 Who Foc 3sg:is knocking door the in  
 "Who is knocking at the door?"

b. ?Woana robɔ abow no mu?  
 Who is:knocking door the in  
 "Who is knocking at the door?"

(20) a. Woana<sub>i</sub> na [ɔ<sub>i</sub>-refrɛ Ama]?  
 Who Foc 3sg:is calling A.  
 "Who is calling (for) Ama?"

b. ?Woana refrɛ Ama?  
 Who is:calling Ama  
 "Who is calling (for) Ama?"

Some speakers judge the (b) examples in (19) and (20) to be slightly unacceptable (or perhaps used on rare occasions) as compared to the (a) examples in (16) - (18). The only difference between the examples in (16) - (18) on one hand, and (19) - (20) on the other is the fact that in the former, the verb is in past tense (i.e., INFL is [+ past]) while in the latter it contains the progressive aspect *ro/re*<sup>7</sup>. I cannot offer any adequate explanation for this at the moment. I will assume, however, that the presence of the progressive aspect makes the (b) examples marginal for some Fante speakers.

---

<sup>7</sup> The vowel(s) in the aspectual markers and other particles such as the personal pronouns attached to the verb alternate between [+ATR] and [-ATR] depending on the nature of the vowels in the verb root in accordance with the Vowel Harmony rule in the language. This alternation accounts for the two forms of the 3rd person singular pronoun (o-ɔ-) as may be found in the data presented in this work.

Not all Akan wh-questions come in pairs, one with the wh-word in situ and the other in which the wh-word is focused. There are some questions for which the focused versions are not acceptable in the language. For example:

(21) a. Wɔfrɛ wo dɛn?  
They:call you what  
"What is your name?"

b. \*Dɛn na wɔfrɛ wo?  
What Foc they:call you  
"**What** do they call you?"

(22) a. Wo yere ne wo mba ho te dɛn?  
Your wife and your children health is what  
"How are your wife and children?"

b. \*Dɛn na wo yere ne wo mba ho te?  
What Foc your wife and your children health is  
"**How** are your wife and children?"

(23) a. Wimɔ beyɛ dɛn ndɛ?  
Sky will:be what today  
"What will the weather be like today?"

b. \*Dɛn na wimɔ beyɛ ndɛ?  
What Foc sky will:be today  
"**What** will the weather be today?"

The examples in (21) - (23) involve such routine questions as asking for a person's name (21); asking about their health (22); and inquiring about the weather (23). In each case the *wh*-word must remain in situ. The focused counterparts are ungrammatical. As I explain in chapter 5, the reason for this may be semantic/pragmatic. Though these sentences, like all questions are seeking for (new) information, this information is not expected to be contrasted with some other information of its kind thus a focused construction is not required. The focused structures are restricted to those circumstances where a contrastive reading is required. For example, a person can have only one name thus when asking for a person's name, one is not expecting the respondent to contrast it with other names, therefore, (21b) will not be felicitous.

#### **3.1.4 Question Particles, Wh-in-Situ and Wh-Movement**

Studies such as Baker (1970) and Cheng (1991) have sought to establish a link between the way languages form *yes-no* questions and the positioning of *wh*-elements. Baker (op. cit.) classifies languages into those that allow syntactic *wh*-movement and those that do not based on whether or not they have *yes-no* question particles and where these particles occur in the sentence. Cheng (op. cit.) approaches the correlation between the use of *yes-no* particles from a different angle. She sees the presence/absence of question particles as indicative of the fact that a language has or lacks syntactic *wh*-movement.

These analyses have some implications for the way in which *wh*-questions may be analyzed in Akan (and other languages) and I will therefore examine them to see which of them makes the right predictions about the language. Before I do that however, I present a brief description of the formation of *yes-no* questions in Akan in the following sections.

### 3.1.5 Yes-No Question Formation in Akan

Akan forms *yes-no* questions by means of either a question intonation or question particles (QuPs)<sup>8</sup>. Whichever the strategy used, word order as described in chapter 2 remains the same for the questions as it would be in the corresponding declarative sentences. No re-ordering of constituents such as Subject/Auxiliary Inversion takes place.

#### 3.1.5.1 The Question Intonation in Akan

The precise nature of the intonational contour associated with *yes-no* questions needs an in-depth investigation, something that is beyond the scope of this study. Saah (1983: 14), following Schachter and Fromkin (1968), described it as characterized by a slight raising of the general pitch levels of the sentence terminating in a sharp drop in the pitch of the last syllable of the sentence. Boadi (1990: 72) notes that the *yes-no* question intonation is characterized by "a downward glide tagged on to the pitch of the final segment". This final segment, according to him, is also lengthened. While the two descriptions of the question intonation may differ in certain details, they agree on the fact that there is a drop in the pitch of the final phonological segment, something which Schachter and Fromkin (*ibid.*, p.116) attribute to the presence of a "sentence-final interrogative morpheme that may be manifested by an extra-low tone". One thing that is certain is that the intonational contour of *yes-no* questions is clearly distinct from that of their declarative counterparts.

The only thing that would signal that there is a difference (indicated orthographically by the punctuation marks) between (24a) and (24b) below would

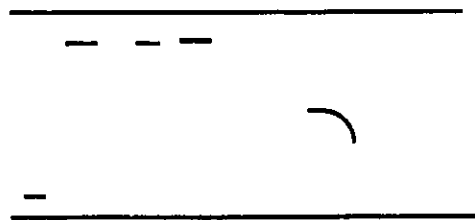
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<sup>8</sup> I will adopt the abbreviation QuP(s) for question particle(s) to avoid possible confusion with QP for quantified phrase.

be the absence of the question intonation (QI) in the former and its presence in the latter. This phonological difference contributes to the declarative reading of (24a) and the interrogative reading of (24b):

(24) a. Kòfí bedá há.  
 K. will:sleep here  
 "Kofi will sleep here."

b. Kòfí b'ε-dá há?



"Will Kofi sleep here today?"

(24b), adapted from Boadi (1990), gives a graphic depiction of the intonational contour associated with the *yes-no* questions. The high tones are depicted by the dashes below the upper line while those above the bottom line indicate the low tones. The symbol (↘) shows the downward glide in the pitch of the final segment. Though this final segment is a high tone, it is perceived as being much lower in pitch than the preceding high tones. This intonation contour is what distinguishes (24a) from (24b) phonologically; it is used to signify that the utterance in (24b) is a question.

### 3.1.5.2 Yes-no Particles

Akan has both sentence-initial and sentence-final *yes-no* question particles as shown in Table 2:

**Table 2: Yes-no Particles in Akan<sup>9</sup>**

| a. Sentence-initial particles | b. Sentence-final particles |
|-------------------------------|-----------------------------|
| i. sò (Ak.)                   | i. á                        |
| ii. àsó (Fa.)                 | ii. ànáà/ ànèè (Fa.)        |
| iii. ànà (Fa.)                | iii. àná (Ak.)              |
| iv. nky'ε (Fa.)               | iv. 'ε                      |

These particles are used in sentences like those in (25) and (26) which involve sentence-initial and sentence-final question particles respectively:

- (25) a. (So) wɔgye ahɔho wɔ saa sukuu yi mu? (Ak.)  
 QuP 3pl:admit foreigners at this school this in  
 "Are foreigners admitted into this school?"
- b. (Ana) neesfo ye edwuma Kwesida? (Fa.)  
 QuP nurses do work (on) Sunday  
 "Do nurses work on Sundays?"

<sup>9</sup> Due to the inadequacies of my word processor, it is not possible to put the tone marks directly above the IPA fonts such as ə and e.

- c. (Nkyɛ) ebeba me paati no? (Fa.)  
 QuP you:will come my party the  
 "Will you come to my party?"
- (26) a. Wɔbesesa ama me (a)?  
 3pl:will change (it) give me QuP  
 "Will they change it for me?"
- b. Memma wo sika (anaa)?  
 I:give you money QuP  
 "Shall I give you (some) money?"
- c. Woretwen Kofi (ana)? (Ak.)  
 You:are waiting K. QuP  
 "Are you waiting for Kofi?"
- d. Wo honam mu ε?  
 Your body inside QuP  
 "How are you?"
- e. Kofi ε?  
 K. QuP  
 "What about Kofi?"

The QuPs (sentence-initial or final) may be optional in most cases as indicated by the optional bracketing in (25) and (26a-c). When omitted, the Q-



(27a) has the sentence-initial QuP *so* and the sentence-final QuP *àná* both marking the sentence as a question and in (27b) *àná* and *à* are used simultaneously<sup>11</sup>. It is unclear what the import of having the same sentence doubly marked by a sentence-initial and a sentence-final QuP is. I can only conjecture, at this point, that this is done just for the sake of emphasis.

### 3.1.5.3 QuPs and Wh-movement: Baker (1970)

Baker (1970) discusses Greenberg's (1966) data on questions and tries to establish a correlation between the position of *yes-no* question particles (QuPs) and the presence or absence of syntactic movement of the *wh*-word/phrase in a particular language. He notes that the SOV languages in the data usually put their QuPs at the end of the sentence and none of them regularly moved other question words (i.e. *wh*-words) to sentence-initial position. From this he postulates that it is only those languages that put their *yes-no* QuPs in clause or sentence-initial position that would allow the movement of *wh*-words. Admitting some difficulty in the interpretation of the data from SVO languages, he states that "no language in the data simultaneously marked its *yes-no* question with a sentence-final particle and moved other question-words to sentence-initial position" (Baker, op. cit. p. 206-7).

There is a problem with this hypothesis as pointed out by Cheng (1991) who argues that the positioning of QuPs does not necessarily predict that a language will or will not have syntactic *wh*-movement. Her conclusion is based on the fact that there are languages like Hopi, Bahasa Indonesia and Hindi which have sentence-initial *yes-no* QuPs, but which do not have syntactic movement of *wh*-

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<sup>11</sup> In Saah (1983, 1987), I discuss the syntax and semantics of *yes-no* questions, the QuPs and the doubly marked *yes-no* questions. Since the main focus of this work is on *wh*-questions, I do not intend to elaborate on *yes-no* questions here.

words as Baker's hypothesis would suggest. If it were possible to use the placement of QuPs to predict syntactic movement of wh-words then the Akan data would be problematic. Not only does the language, which is SVO, have sentence-initial QuPs, but it also has sentence-final ones as shown in examples (25) and (26). Under Baker's hypothesis, it is not clear how we can make any prediction(s) about the relationship between the placement of *yes-no* QuPs and the movement of questioned constituents in Akan based on positioning of the QuPs alone.

#### 3.1.5.4 Clausal Typing and Wh-movement: Cheng (1991)

Cheng (1991) departs from Baker's use of the positioning of the QuPs to predict whether a language will or will not have syntactic wh-movement. Instead, she postulates the *Clausal Typing Hypothesis* (CTH) to establish a link between the use of QuPs to form *yes-no* questions and movement of wh-words in languages. The Clausal Typing Hypothesis is formulated as:

(28) Clausal Typing Hypothesis

Every clause needs to be typed. In the case of typing a wh-question, either a wh-particle in C<sup>0</sup> is used or else fronting of a wh-word to the Spec of C<sup>0</sup> is used, thereby typing a clause through C<sup>0</sup> by Spec-head agreement.

(Cheng, *op. cit.*, p.30, ex. 9)

According to the hypothesis, QuPs and wh-movement are used by languages to "type" a clause or sentence as interrogative. The languages she cites have particles which are used to type sentences as interrogative. They, therefore do not need to move a wh-word to indicate that a sentence or clause is interrogative. According to this hypothesis, a language like English, which does not have QuPs has to resort to

movement of the question word to type a sentence as interrogative<sup>12</sup>. No language in her data simultaneously marked sentences with QuPs and moved wh-words to a clause/sentence peripheral position, a fact that is attributable, according to Cheng, to the Principle of Economy of Derivation (Chomsky, 1989) in which a shorter derivation is preferred over a longer one. A derivation in which both a QuP and movement of a questioned constituent are used to type a sentence as a wh-question would not only be a longer but it would be superfluous as well.

Cheng suggests that there is a direct correlation between the positioning of wh-words in in-situ languages and the way such languages form *yes-no* questions. In-situ languages form their *yes-no* question by the use of "some morphologically overt element (particle, special inflection, or agreement), or morpho-phonological process (local tonal accent, generally occurring at one or other periphery of the clause" (ibid. p.20). Such a device, she asserts is sometimes used in forming wh-questions as well.

Some of the languages she examines (e.g. Hopi, Japanese and Korean), use the same particle for both *yes-no* questions and wh-questions; some (e.g. Mandarin Chinese and Navajo), use different particles for *yes-no* questions and wh-questions; and others (Amharic, Hindi, and Turkish) have particles for *yes-no* questions but none for wh-questions. She calls the particles used in wh-questions "wh-particles". She proposes that languages which have overt *yes-no* particles have wh-particles — overt or non-overt (ibid. p.24). While some of the languages in the data consistently have overt *yes-no* particles but non-overt wh-particles, not one of them uses an overt wh-particle without having an overt *yes-no* particle. Based on these facts, she states that "the presence of overt *yes-no* particles in a given language implies the presence of wh-particles (overt and non-overt)".

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<sup>12</sup> It is interesting to note that Subject/Aux Inversion which is used for English *yes-no* questions involves some kind of movement.

She makes the following generalization about languages regarding the presence of wh-particles (overt and non-overt) and the position of the wh-word:

- (28) In-situ languages have wh-particles. Languages with wh-particles are in-situ languages.

(ibid. p.24)

This generalization follows from the CTH. The wh-particles (overt or null) are used to type clauses and sentences as wh-questions just as those languages which lack particles use syntactic wh-movement to type a sentence as a wh-question. In an analysis based on the Principle of Economy of Derivation, it would be unexpected to have a language that uses a particle to type a sentence/clause as interrogative and simultaneously move the wh-word to initial position and these facts are borne out by the Akan data.

### 3.1.5.5 Clausal Typing and Wh-questions in Akan

The facts of Akan indicate that it is an in-situ language. Not only does it use morphologically overt particles and a special intonation to mark *yes-no* questions as discussed in sections 3.1.5.1 and 3.1.5.2, but it also leaves wh-elements in situ as found in examples like (8a) repeated here as (29):

- (29) Wotɔɔ akutu maa hena?  
You:bought oranges gave who(m)  
"You bought oranges for who(m)?"

Following Cheng, therefore, I will assume that the Akan *yes-no* QuPs in Table 2, like the QuPs in other languages have the main function of "typing" the

sentences/clauses in which they occur as interrogative. Their presence in Akan also implies that the language has a wh-particle (null in this case) that types sentences as wh-questions and as a result, the language leaves wh-words in situ. I will also assume that the null wh/typing- particle occurs in the C<sup>0</sup> position as in (30):

(30) [<sub>CP</sub> Wh<sub>i</sub> [<sub>C'</sub> ∅ [<sub>IP</sub> Wo huu hena<sub>i</sub>]]?

from where it licenses the wh-word in situ.

It must be noted that neither the sentence-initial QuP nor the sentence-final QuP can co-occur with a wh-word in the same sentence. Sentences like those in (31) are not possible in the language:

- (31) a.    \***So**    wohuu        **hena?**  
           QuP    you:saw        who  
           "Who did you see?"
- b.    \***So**    **hena** na        wohuu   no?  
           QuP    who Foc.        you:saw 3sg.  
           "**Who** you saw him/her?"
- c.    \***Wohuu** **hena** **ana?**  
           You:saw who QuP  
           "You saw who?"
- d.    \***Hena** na        wohuu        no **ana?**  
           Who    Foc.    you:saw        3sg QuP  
           "**Who** you saw him/her?"

None of the sentences in (31) is well-formed and the reason for the ungrammaticality of these structures is that they have been simultaneously typed as *yes-no* questions (by the *yes-no* QuPs) and *wh*-questions (with *wh*-words). Compare these examples with those in (32) and (33) which are marked by either a *yes-no* QuP or a *wh*-word:

(32) a.    **S o**    wohuu        no?  
             QuP   you:saw      3sg.  
             "Did you see him/her?"

            b.    Wohuu        no ana?  
             You:saw      3sg QuP  
             "Did you see him/her?"

(33) a.    Wohuu        **hena?**  
             You:saw      who  
             "You saw who?"

            b.    **Hena na**      wohuu no?  
             Who Foc.    you:saw 3sg.  
             "Who you saw him/her?"/ "Who did you see?"

The examples in (32) and (33) show that QuPs and *wh*-words in Akan are used independently of each other unlike what happens in languages like Japanese, Korean and Hopi, and Chinese, (Cheng, op. cit.), in which a *wh*-word may coexist with a question particle in the same sentence. The reason for this is that in the

languages cited above, wh-words may be used non-interrogatively (Cheng, *ibid.*; Cole and Hermon, 1994) while in Akan they are always used interrogatively.

### 3.1.5.6 Summary

So far it has been established that Akan is an in-situ language. It uses QuPs to type sentences as interrogative and thus does not need to syntactically move wh-words to pre-IP position to type sentences as interrogatives. It has been assumed, following Cheng (*op. cit.*) that wh-sentences have a null wh-particle which occurs in C<sup>0</sup> and licenses the in-situ wh-words.

### 3.2. Interpretation of in-situ Wh-words

Wh-words/phrases have been shown to behave like operators that bind variables. This fact is borne out by the Akan examples in (34) and (35):

(34) a. Kofi huu Ama.  
K. saw A.  
"Kofi saw Ama".

b. Kofi huu abofra no.  
K. saw child the  
"Kofi saw the child".

(35) a. Kofi huu hena?  
K. saw who  
"Kofi saw who"/ "Who did Kofi see?"

- b. Kofi huu abofra ben?  
 K. saw child which  
 "Kofi saw which child"/ "Which child did Kofi see?"

There is a contrast between the object NPs in (34) and (35). The NPs in (34), **Ama** ( a girl/woman's name) and **abofra no** "the child" have specific reference, but **hena** "who" and **abofra ben** "which child" in (35) lack specific reference. The two sentences can be paraphrased as:

- (36) a. For which x, x is human, is it the case that Kofi saw x?  
 b. For which x, x is a human child, is it the case that Kofi saw x?

In either case the wh-word/ phrase acts as an operator binding a variable x. As an operator, the wh-word/phrase has scope over the variable.

Since May (1985), the level of LF has been postulated as the level at which sentences such as (35) receive their interpretation. Wh-words, including in-situ ones, are assumed to raise at LF to take scope and be interpreted. Currently, there are two positions in the literature regarding the interpretation of in-situ wh-words. One viewpoint, taken by Chomsky (1973); Huang (1982), Lasnik and Saito (1984), Pesetsky (1987), Cheng (1991), and Watanabe (1992), to name a few, assumes that in-situ wh-words or phrases undergo obligatory movement at LF to the Spec of Comp to be interpreted properly.

Aoun and Li (1993), using a Baker- (1970) style analysis, on the other hand, propose that there is no such LF wh-movement of in-situ wh-elements even in languages like English as a result of the presence of a question morpheme (overt or abstract) in such structures. According to them, wh-elements in-situ at S-structure remain in situ at LF and that what really moves is a null *Qu* operator. Cole

and Hermon (1994), drawing inspiration from the Aoun and Li analysis, suggest that there is a process of *wh-indexing* of the Qu operator and the in-situ wh-word which is distinct from LF wh-movement.

I will examine these two positions and decide which of them best accounts for the Akan data in the next sections.

### 3.2.1 Against LF Wh-Movement: Aoun and Li (1993)

Aoun and Li base their arguments against LF raising of in-situ wh-words on the interaction of *only* with wh-elements as well as quantified phrases (QPs). According to them, *Only* can be associated with overt elements, not the traces of movement and this follows from Tancredi's (1990) *Principle of Lexical Association* (PLA) which states that:

- (37) An operator like *only* must be associated with a lexical constituent in its c-command domain.

According to their analysis, stated in very simple terms here, the well-formedness of sentences like (38) pose problems for any analysis that assumes that the in-situ wh-word moves to the Spec of Comp at LF. If the in-situ wh-words in the English and Chinese examples in (38a & b) were to move to [Spec, CP] in order to be interpreted properly, they would have to cross *only* and violate the PLA in the process. If, on the other hand, the wh-words do not raise at LF, nothing can rule out such sentences.

- (38) (= Aoun & Li , ex. 37)  
a. Who only likes what?

- b. Ta zhi xihuan shei?  
 he only like whom  
 "Who does he only like?"

While they dispense with LF wh-movement, Aoun and Li postulate movement of a null *Qu*-operator in order to account for the fact that Chinese wh-in-situ is subject to the ECP. Though Aoun and Li's analysis holds promise for an alternative account of the interpretation of wh-in-situ, it has some problems (see Cheng, 1991 for a discussion of some of these problems). Even Cole and Hermon (1994), who follow Aoun and Li in claiming that wh-in-situ in Ancash Quechua is better explained by wh-coindexation instead of LF wh-movement, point out that the analysis leaves a lot of important questions unanswered. These have to do with what determines LF wh-movement or coindexation of wh-in-situ; whether some languages exhibit coindexation and others, wh-movement; and the general licensing for wh-indexing as an alternative for wh-movement. I do not have answers to these questions at this point and will leave matters as they are.

Apart from the theory-internal problems mentioned above, it is not possible to test the explanatory power of Aoun and Li's analysis by constructing parallel examples to those in English and Chinese using the Akan equivalent of *only* which is **nko(aa)/ nkutoo**. This word can only be associated with NPs, not verbs or VPs as in (39):

- (39) a. ɔpɛ Efua nkutoo asem.  
 3sg:likes E. only matter  
 "S/he likes Efua only" (s/he does not like anyone else.)

- b. \*ɔpɛ nkutoo Efua asem.  
3sg:likes only E. matter

Since **nko(aa)/ nkutoo** "only" cannot be associated with the verb or a VP, it is not possible to get the kind of ambiguous reading that Aoun and Li postulate for the English and Chinese examples that they cite. The sentence has only one interpretation: *S/he only likes Efua and nobody else*<sup>13</sup>

It is also not possible to associate **nko(aa)/nkutoo** "only" with in-situ wh-words. For example, (40a) which has an in-situ wh-word **hena** "who" modified by **nko(aa)/ nkutoo** "only" is ungrammatical. (40b) has the wh-word and *only* occurring in a pre-IP position followed by the focus marker **na** is grammatical. This seems to suggest that a wh-word modified by the Akan equivalent of *only* requires focusing.

- (40) a. \*Wohuu hena nkutoo/nko(aa)?  
You:saw who only
- b. Hena; nkutoo/nko(aa) na wohuu no;?  
Who only Foc. you:saw 3sg.  
"Who only did you see?"/ "Who was it that you saw him/her only?"

---

<sup>13</sup> If a contrast is to be implied on the verb, a focus construction will be used as in:

- i. Pɛ na ɔpɛ Efua asem.  
Like Foc. 3sg:likes E. matter  
"S/he only likes Efua." (s/he doesn't love her.)

It is unclear what other tests could be performed to argue for wh-indexing as an alternative for LF movement of the in-situ wh-word in Akan. As a result of the problems with the wh-coindexation analysis, I will abandon it in favour of an LF wh-movement analysis.

### 3.2.2 LF Movement of Wh-in-Situ

Writers such as Pesetsky (1987), Cheng (1991), Lasnik and Saito (1992), Watanabe (1992) have adopted Huang's (1982) assumption that in-situ wh-words undergo movement/raising at the LF component of the grammar to take scope and be interpreted. The arguments for such a position have been based on interpretation and selectional restrictions, weak crossover effects, superiority effects, locality conditions and scope. In the following sections, I will examine some of these factors and see how they contribute to an argument in favour of LF raising of in-situ wh-words in Akan.

### 3.2.3 Selectional Restrictions and Interpretation

In a language like English, the scope of a wh-element is determined by overtly moving it to the Spec of Comp as shown in (41)

- (41) a. [CP<sub>1</sub> He wonders [CP<sub>2</sub> what<sub>i</sub> [you saw x<sub>i</sub>]]]?  
b. [CP<sub>1</sub> What<sub>i</sub> does [ he think [CP<sub>2</sub> you saw x<sub>i</sub>]]]?

The wh-word has embedded scope in (41a) and matrix scope in (41b). To derive the same kind of scope interpretation for a language like Chinese which has in-situ wh-elements, Huang (op. cit.; see also Aoun and Li . op. cit.), postulate a covert LF movement of the wh-word to the Spec of Comp. It is assumed that verbs like

*wonder* in (41a) select a [+wh] Comp and those like *think* select a [-wh] Comp and that this makes it possible to state the selectional requirements between verbs and their complements (see Aoun and Li, op. cit., p 201; and Cheng, 1991). These requirements are met in in-situ languages at LF after the raising of wh-elements as the following examples from Chinese show:

- (42) (= Aoun and Li, 1993, example 6)
- a. Ta xiang-zhidao ni maile shenme.  
 he wonder you bought what  
 "He wonders what you bought."
- b. Ta renwei ni maile shenme?  
 he think you bought what  
 "What does he think you bought?"

After LF raising of the in-situ wh-elements in (42), we get the configurations in (43) where the selectional requirements of the verbs *wonder* and *think* are met just as it is for the English examples seen in (41) above.

- (43) (= Aoun and Li, 1993, example 7)
- a. [CP<sub>1</sub> ta xiang-zhidao [CP<sub>2</sub> shenme<sub>i</sub> [ ni maile x<sub>i</sub>]]]  
 he wonder what you bought
- b. [CP<sub>1</sub> shenme<sub>i</sub> [ ta renwei [CP<sub>2</sub> ni maile x<sub>i</sub>]]]  
 what he think you bought

Now consider the following Akan examples using the equivalents of the verbs *ask* and *think*. The *wh*-word is in situ in both examples and in either case, an overt complementizer *se* must be present or the sentence will be ungrammatical.

- (44) a.    Obisae        se        wo huu den?  
           3sg:asked    that    you saw what  
           "S/he asked (that) you saw what?"
- b.    ɔdwene        se        wo huu den?  
           3sg:thinks    that    you saw what  
           "S/he thinks (that) you saw what?"

With LF raising of the *wh*-word we get:

- (45) a.    [CP<sub>1</sub> Den<sub>i</sub> [CP<sub>2</sub> obisae    se [IP wo hui *pro*<sub>i</sub>]]]<sup>14</sup>.  
           what                    3sg:asked that    you saw it
- b.    [CP<sub>1</sub> Obisae    se [CP<sub>2</sub> den<sub>i</sub> [IP wo huu *pro*<sub>i</sub>]]]  
           3sg:asked that            what    you saw
- c.    [CP<sub>1</sub> Den<sub>i</sub> [CP<sub>2</sub> ɔdwen    se [IP wo huu *pro*<sub>i</sub>]]]  
           what            3sg:thinks that    you saw it
- d.    [CP<sub>1</sub> ɔdwene        se [CP<sub>2</sub> den<sub>i</sub> [IP wo huu *pro*<sub>i</sub>]]]  
           3sg:thinks        that        what        you saw it

<sup>14</sup> I have omitted the focus marker *na* which usually follows a clause-initial *wh*-element from these LF representations.

The *wh*-element can be raised all the way to achieve matrix scope as in (45a and 45c); and embedded scope in (45b and 45d). Besides these examples, it is possible for the verbs *bisa* "ask" and *dwene* "think" to select an embedded *yes-no* question as in (46):

- (46) a.    Obisae        sɛ   wohuu    Ama?  
           3sg:asked    that you: saw  A.  
           "Did s/he ask whether you saw Ama?"/  
           "S/he asked: "Did you see Ama?"
- b.    ɔdwene       sɛ    wohuu    Ama?  
           3sg:thinks   that    you: saw A.  
           "Did s/he think if you saw Ama?"

Said with the appropriate question intonation as described in section 3.1.5.1, both of these sentences will be analyzed as having embedded *yes-no* questions. This shows that the verbs in question can select complements that are either *wh*-questions or *yes-no* questions. Based on this fact I follow Cheng (op. cit.) in calling into question the idea that LF *wh*-movement satisfies selection. It appears that the presence of the *wh*-words in (44) and the question intonation in (46) have the primary function of typing the clauses in which they occur as interrogative in the syntax. The LF movement of the *wh*-elements as shown in (55) will therefore be for the purposes of interpretation, not to satisfy selectional restrictions.

### 3.2.4 Weak Crossover

Crossover facts, weak crossover effects to be precise, have been used to argue for LF raising of in-situ wh-words. For example, both the sentences in (47) are grammatical in English,

- (47) a. Who loves his mother?  
b. Who does his mother love?

but any interpretation that construes *who* with *his* and the wh-trace as in (48b) will render the structure ungrammatical:

- (48) a. [<sub>CP</sub> Who<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> loves his<sub>i</sub> mother]]?  
b. \* [<sub>CP</sub> Who<sub>i</sub> [<sub>C'</sub> does [<sub>IP</sub> his<sub>i</sub> mother love t<sub>i</sub> ]]]?

The ungrammaticality is attributed to the *Leftness Condition* (see Chomsky, 1977; Koopman and Sportiche, 1982; Haegeman, 1991, etc.) which states that a wh-trace cannot be co-indexed with a pronoun to its left and/or the *Bijection Principle* (Koopman and Sportiche, op. cit.) which states that "every variable must be bound by exactly one operator and every operator must be bound by exactly one variable". In (48a) *who* binds wh-trace and both *who* and wh-trace bind *his*. Neither the *Leftness Condition* nor the *Bijection Principle* is violated. But in (48b) *who* binds wh-trace and *his*, wh-trace, however binds nothing. In other words, (48b) shows weak crossover effects after the LF movement. The same effect obtains after the LF raising of in-situ wh-elements.

Huang (op. cit.), Aoun and Li (op.cit.), and Cheng (ibid.) discuss the weak crossover effects that result from the LF raising of in-situ wh-elements. The same



indexed with the object resumptive pronoun **no** "him/her" and it is also co-indexed with the possessive pronoun **ne** "his/her". In effect the wh-operator is co-indexed with a pronoun to its left, a violation of the *Leftness Condition* and if we assume that the resumptive pronouns are variables by virtue of being co-indexed with the wh-operator, we can see a violation of the *Bijection Principle* because the wh-operator binds two of such variables. Only an interpretation in which the wh-word is not co-indexed with the possessive pronoun in (50b) will be grammatical. The fact that crossover effects result after LF raising of the in-situ wh-element as in (50b) is an indication that such wh-elements do in fact move at LF.

### 3.2.5 Scope

The standard assumption, since May (1985) has been that the logico-semantic (i.e. LF) representations of sentences should mirror their syntactic representations (see Haegemann, 1991). Under this assumption, wh-elements are treated as operators which move and bind variables. I will follow this practice and assume that the in-situ wh-words in Akan have to raise at LF to take scope and be interpreted. Some of the arguments for LF movement of in-situ wh-words have been discussed in the preceding sections and they will not be repeated here.

The next problem to be considered is where the moved/raised in-situ wh-element is adjoined at LF. Is it raised to the Spec of COMP or adjoined to IP. Cheng (1991) discusses Mahajan's (1990) proposal that LF movement of in-situ wh-words is similar to quantifier raising (QR) and that the moved wh-words are adjoined to IP where they are governed by a [+wh] C<sup>0</sup>. She, however, does not provide any solutions for the problems she raised about Mahajan's analysis and I do not have a(n) answer(s) to those problems either.

The other alternative worth considering is the one that postulates that the in-situ wh-word is adjoined to a [+wh] COMP at LF (see Lasnik and Saito, op. cit.).

To make this work, they make use of the *Empty Category Principle* (ECP) of Chomsky (1981); the notion of *proper government*, *government*, and a COMP-indexing algorithm. These are formulated in (51), (52), (53), and (54) respectively:

(51) **Empty Category Principle** (Chomsky, 1981):

A nonpronominal empty category must be properly governed.

(52) **Proper Government** (Lasnik & Saito, *ibid.* p. 14)

$\alpha$  *properly governs*  $\beta$  iff  $\alpha$  governs  $\beta$  and

a.  $\alpha$  is a lexical category  $X^0$  (lexical government), or

b.  $\alpha$  is coindexed with  $\beta$  (antecedent government).

(53) **Government** (Lasnik & Saito, *ibid.*):

$\alpha$  governs  $\beta$  iff every maximal projection dominating  $\alpha$  also dominates  $\beta$  and conversely.

(54) **COMP-indexing Algorithm** (Lasnik & Saito, *ibid.*):

[COMP ...  $X_i$ ...]  $\rightarrow$  [COMP ...  $X_i$  ...] <sub>$i$</sub>  if COMP dominates only  $i$ -indexed elements.

According to Lasnik and Saito's analysis, the subject-object asymmetry in examples like (55) can be explained by giving them the LF representations in (56):

(55) (= Lasnik & Saito, p. 16, ex. 81):

a. Who<sub>1</sub>  $t_I$  saw what

b. \*what<sub>1</sub> did who see  $t_I$

(56) (= Lasnik & Saito, op. cit. ex. 82):

- a. [S' [COMP what<sub>2</sub> [COMP who<sub>1</sub> ]<sub>1</sub> ]<sub>1</sub> [S [*t*<sub>1</sub> [VP saw *t*<sub>2</sub> ]]]
- b. \*[S' [COMP who<sub>2</sub> [COMP what<sub>1</sub> ]<sub>1</sub> ]<sub>1</sub> [S *t*<sub>2</sub> [VP saw *t*<sub>1</sub> ]]]

In the LF representation in (56a), *who* receives the index 1 at the level of COMP-indexing since it is the only wh-element in COMP at S-Structure. *What* is adjoined to COMP by LF movement/raising. The trace of *what*, *t*<sub>2</sub>, is properly (lexically) governed by the verb *saw*, satisfying the ECP. The trace *t*<sub>1</sub> is also properly (antecedent-) governed by COMP which has the same index as the trace and also governs the trace. S is not a maximal projection and no trace violates the ECP, thus the sentence is grammatical.

There are ECP violations in the representation in (56b) hence the ungrammaticality of that structure. The trace *t*<sub>1</sub> is lexically governed by the verb *saw* but *t*<sub>2</sub> is neither lexically governed nor antecedent-governed and the sentence is ruled out by the ECP. *t*<sub>2</sub> is not antecedent governed because the COMP has the index 1, not the index 2.

The Akan examples in (57) can be treated in similar fashion by being given the LF representation in (58):

- (57) a. Hena na ohuu den?  
 Who Foc. 3sg: saw what  
 "Who saw what?"
- b. Den na hena hui?  
 What Foc. who saw  
 "What did who see?"

- (58) a. [CP [COMP *Dɛn*<sub>2</sub> [COMP *hena*<sub>1</sub>]<sub>1</sub>]<sub>1</sub> [IP *ɔ*<sub>1</sub> [VP *hui pro*<sub>2</sub>]]<sup>16</sup>  
           what                  who                  3sg.  saw it
- b. [CP [COMP *Hena*<sub>2</sub> [COMP *dɛn*<sub>1</sub>]<sub>1</sub>]<sub>1</sub> [IP *o*<sub>2</sub> [VP *hui pro*<sub>1</sub>]]  
           who                  what                  3sg  saw it

Since *hena* "who" is already in COMP before LF raising of the in-situ wh-word, we assign it the index 1 in (58a) at the level of COMP-indexing. *Dɛn* "what" is adjoined to COMP after LF-raising and is assigned the index 2. The resumptive *pro* for *dɛn* "what" is properly (lexically) governed by the verb *huu* "saw", thus satisfying the ECP. The other resumptive pronoun *ɔ*<sub>1</sub> is also properly (antecedent-) governed by COMP with which it shares the same index 1. None of the resumptive pronouns in (58a) violate the ECP therefore the sentence is grammatical. In (58b), since *dɛn* "what" appears first in COMP before LF raising of the in-situ wh-word, it is assigned the index 1 at the level of COMP-indexing. *Hena* "who" is assigned the index 2 after being adjoined to COMP. The resumptive pronoun for *dɛn* "what", *pro*<sub>1</sub>, is properly (lexically-) governed by the verb *hui* "saw" and the ECP is not violated. The resumptive pronoun for *hena* "who", *o*<sub>2</sub> is neither antecedent-governed nor lexically-governed. It is not antecedent governed because it does not share the same index as COMP. The question we have to ask is: If it is not properly governed, why is it that the sentence is grammatical? The answer to this question can be found in the resumptive pronoun strategy in the language. As I

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<sup>16</sup> In adopting this kind of LF representation, I am making a number of assumptions in anticipation of the discussion in the next chapter. First, I am assuming, as stated earlier on that that the focus marker *na* may be [ $\pm$  wh] and that the in-situ wh-elements are adjoined to a [+wh] C<sup>0</sup>. I am also assuming, in anticipation of the discussion in the next chapter that resumptive pronouns (overt or null) are present at LF. This, I hope explains why (57b), unlike its English equivalent, is grammatical. As pronouns these elements need not be governed.

have already hinted in footnote 14, it seems to me that the resumptive pronouns (null and overt) are present at LF and since they are pronouns, the ECP need not apply to them. Nothing, however, prevents them from being coindexed with the wh-elements in COMP with which they share identical reference.

Embedded questions involving multiple interrogation can be analyzed in the same way. For example, the sentences in (59) may be given the LF representation in (60):

(59) a. Mary bisaa se hena na ohuu den?  
 M. asked that who Foc. 3sg: saw what  
 "Mary asked who saw what?"

b. Mary bisaa se den na hena hui?  
 M. asked that what Foc. who saw *pro*  
 "Mary asked what who saw?"

(60) a. [<sub>CP</sub> Mary bisaa se [<sub>CP</sub> den<sub>2</sub> [<sub>C'</sub> hena<sub>1</sub>]<sub>1</sub>]<sub>1</sub> [<sub>IP</sub> o<sub>1</sub> [<sub>VP</sub> hui  
 M. asked that what who 3sg saw  
*pro*<sub>2</sub>]]

it

b. [<sub>CP</sub> Mary bisaa se [<sub>CP</sub> [<sub>C'</sub> hena<sub>2</sub> [<sub>C'</sub> den<sub>1</sub>]<sub>1</sub>]<sub>1</sub> [<sub>IP</sub> o<sub>2</sub> [<sub>VP</sub> hui  
 M. asked that who what 3sg saw  
*pro*<sub>1</sub>]]

it

All of the *wh*-elements in (60) have embedded scope since they appear in the [Spec, CP] in the complement IP. The grammaticality of the sentences in (59) with their LF representations in (60) follows from the explanation given for the grammaticality of those in (57) and (58). Lasnik and Saito's account appears to be making the correct predictions about the LF movement and interpretation of in-situ *wh*-elements in Akan.

### 3.3. Summary

In this chapter, I have established the fact that Akan is an in-situ language. This is to be expected given that the language has *yes-no* QuPs which are used to type sentences as interrogative. Like other languages of its type, it does not need any movement strategy such as Subject/Aux Inversion, *wh*-movement or any other such mechanism in the syntax, to type sentences as interrogative. In-situ *wh*-words, however, have to move at LF to adjoin to the Spec of CP in a Lasnik and Saito style COMP-adjunction to take scope and be properly interpreted. This means that Akan differs syntactically from English-type languages in not having overt *wh*-movement but at the level of LF, it is similar to them in having movement of *wh*-phrases for the purposes of scope and interpretation.

## Chapter 4

### Resumptive Pronouns

#### 4.1 Introduction

In chapter 3, I mentioned the occurrence of resumptive pronouns in questions with IP-initial *wh*-words as well as in relative clauses in Akan. In view of the preponderance of these pronouns in the grammar of Akan, and the role they play in the analysis of the structures in which they occur, I will attempt a detailed discussion of their use in this chapter.

Resumptive pronouns, have been known variously in the literature as *recapitulating pronouns*, *returning pronouns*, and *reprise pronouns* (see Caskey 1990, p.275, fn 1, and references cited there). Syntactically, they behave as variables — elements that are bound and whose immediate binders are in an A'-position. While resumptive pronouns are somewhat marginal in a language like English, they play a much fuller role in the grammar of a lot of languages, for example, Welsh (Borsley, 1991), Irish (Borsley, *op. cit.*; McCloskey, 1990); Swedish (Engdahl 1985); Hebrew and Palestinian (Ur Shlonsky, 1990); Palauan (Georgopolous, 1991); Vata (Koopman and Sportiche, 1986), and creole languages (Caskey, *op. cit.*). In Akan, as we shall see in the discussion that follows, any time a noun phrase or an operator occurs in a clause/sentence-peripheral position (i.e., in A'-position), there is a resumptive pronoun (null or overt) somewhere in the complement sentence that is coindexed to it.

Languages show a certain amount of variation in the way resumptive pronouns are utilized. In some languages, for example, Hebrew, Swedish, Irish (see references cited above), and Tuki (Bilola, 1989), resumptive pronouns may freely alternate with gaps in certain argument positions and they may license parasitic gaps. The form of complementizers may dictate the presence or absence of

resumptive pronouns in some languages, for example, Irish (McCloskey, 1990), Sells (1984), and Shlonsky (1992); Hebrew (Borer, 1984); Standard Arabic (Shlonsky, *op. cit.*).

The use of resumptive pronouns has also been viewed as a sort of saving device that repairs the results of illicit movement from certain critical environments where a gap may violate such grammatical principles as the ECP or island constraints. Shlonsky (*op. cit.*, p.465), for example, argues that resumptive pronouns are employed as a 'last resort' device when some syntactic constraint blocks *wh*-movement thereby preventing the derivation of an A'-chain.

In this chapter, I will show that: i) there is no correlation between the form of complementizers and the presence or absence of resumptive pronouns in Akan, ii) resumptive pronouns in Akan do not license parasitic gaps, and iii) though Akan has both overt and null resumptive pronouns, the use of one or the other is driven by a general animacy condition on the occurrence of third person object pronouns in the language, thus what may appear to be gaps in certain structures are actually instances of the null resumptive pronouns with inanimate reference.

I will argue that resumptive pronouns are freely generated in Akan in all syntactic positions and that their use is a matter of parametric choice in the language. It is not necessarily a kind of rescuing device since resumptive pronouns occur even in environments where movement is not blocked by any syntactic principle. I will show that the occurrence of resumptive pronouns in the language argues for a non-movement analysis of the structures in which they occur, that is, resumptive pronouns are base-generated and coindexed with constituents occurring in A'-position. In other words, resumptive pronouns are ordinary pronouns in open sentences in the language (not trace spellouts) but they can be freely coindexed or linked with antecedents in A'-positions.

#### 4.1.1 The Pronominal System of Akan

Akan has a pronominal system in which pronouns are marked for the following features: person, number, gender and case. The following table shows the pronominal forms in the language:

(2)

| <b>A. Singular</b> |                      |                   |                   |
|--------------------|----------------------|-------------------|-------------------|
| <u>Person</u>      | <u>Citation Form</u> | <u>Nominative</u> | <u>Accusative</u> |
| 1                  | me                   | me                | me                |
| 2                  | wo                   | wo                | wo                |
| 3                  | ɔno (Animate)        | ɔ                 | no                |
|                    | ɛno (Inanimate)      | ɛ                 | no                |

| <b>B. Plural</b> |                   |     |     |
|------------------|-------------------|-----|-----|
| 1                | yɛn               | yɛn | yɛn |
| 2                | mo                | mo  | mo  |
| 3                | wɔn (Animate)     | wɔn | wɔn |
|                  | ɛɔnom (Inanimate) | ɛ   | no  |

The citation forms are used in emphatic or focused positions as in (3). The pronoun is focused in both (3a) and (3c) thus the citation/full form is used before the focus marker **na**:

- (3) a. **ɔno** na me pe no.  
 S/he Foc. I like him/her  
 “S/he (is the one that) I like him/her”.

b.    **ɛno**    na    me    pe    [e] .  
 It    Foc.    I    like    it  
 "It (is the one that) I like it".

In subject position of unfocused sentences, only the forms **o/ɔ** and **e/ɛ** which constitute the initial vowels of the full forms are used as in (4a & 4b). These forms cannot occur in focused positions as (4a' & 4b') show. They usually agree in vowel harmony with the vowel(s) of the root verb and this is reflected in the orthography. I analyze these forms as the nominative forms of the pronouns:

(4)    a.    **ɔ-**    baa    ha<sup>1</sup> .  
           S/he    came here  
           "S/he came here."

a'.    \***ɔ**    na    **ɔ-**    baa    ha.  
        3sg    Foc    3sg    came    here  
        "S/he (it was that) came here".

b.    **ɛ-**    ye    fe.  
        It    is    beautiful  
        "It is beautiful".

b'.    \***ɛ**    na    **ɛ-ye**    fe.  
        It    Foc.    it: is    beautiful  
        "It (is the one) I like it."

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<sup>1</sup> For easy identification of the individual elements, I will break from the normal orthographic conventions in Akan and separate the subject pronominal forms from the verbs.

In object position the form **no** is used for both the animate and non-animate personal pronouns without the **ɔ** and **ɛ** vowel prefixes. This form is, however, phonetically unrealized in sentence or clause-final position if it is understood to refer to a non-animate entity. For example:

- (5) a. Me huu Kofi.  
I saw K  
"I saw Kofi."
- b. Me huu no.  
I saw 3sg  
"I saw him".
- c. \*Me huu [e]  
"I saw him."
- (6) a. Me huu adaka no.  
I saw box the  
"I saw the box."
- b. Me huui [e].  
I saw it  
"I saw it".
- c. \*Me huu no  
I saw it

The overt pronoun **no** in (5b) can only be construed with an animate referent whose identity has already been established in previous discourse or by designation. The empty category (EC) in (5c) cannot be construed as having animate reference. In (6), since the entity being talked about in the (a) sentence is inanimate, only the EC (which is usually understood as "it/them" inanimate) is possible as the (b) example shows. The overt pronoun in (6c) is therefore ungrammatical in this context. Since both **no** and the EC are used only in object position of such unmarked sentences, I will analyze them as the accusative forms of the pronouns.

It must be noted that neither the nominative nor the accusative forms of the pronouns are clitics. One main reason for this is that unlike clitics, these forms can be conjoined with other pronouns or NPs. For example:

- (7)        a.        ɔ        ne        Kofi    kɔɔ    fie.  
                 S/he    and    K.        went    home  
                 "S/he and Kofi went home."

b. Kofi ne no kɔɔ fie<sup>2</sup>.  
 K. and s/he went home  
 “Kofi and him/her went home.”

c. Me huu Kofi ne no wɔ ho.  
 I saw K. and him at there  
 “I saw Kofi and him/her there.”

d. ɔ ne no baa ha.  
 S/he and him came here  
 “S/he and her/him came here.”

e. ɛ ne eyi na me pɛ [ɛ].  
 It and this Foc I like them  
 “This and that are the ones that I like.”

In (7a), ɔ “s/he” and a proper noun have been conjoined while in (7b) a proper noun and no “him/her” have been conjoined in that order. In (7e), ɛ “it” and eyi

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<sup>2</sup> It is interesting to note that when the pronouns are conjoined with other pronouns or NPs, the 3sg. pronoun is always **no** if it is the second of the conjuncts (i.e. if it comes after the conjunction). It does not matter if the whole conjoined structure is in subject or object position. I have no explanation for this at this stage but it is worth noting that a similar thing happens in some form of spoken English. For example:

Peter and him went away.

I owe this example to Paul Hirschbühler (p.c.). Marc Authier (p.c.) points out to me that the full paradigm is:

**Written style or formal speech:**  
 i. He and Peter went away.  
 ii. Peter and he went away.

**Informal speech:**  
 i. Him and Peter went away.  
 ii. Peter and him went away.

“this” have also been conjoined. This would not be possible if these forms were clitics (cf. Kayne 1975; Eze, 1994)<sup>3</sup>. On the basis of this, the forms  $\mathfrak{a}$  and  $\mathfrak{e}$  will be analyzed as case variants of the pronouns, not as clitics.

#### 4.1.2 A note on Akan Verbal Morphology

Akan verbs in the past tense exhibit two forms depending on whether they are followed by complements or adjuncts as shown in sentences (5b & 6b) repeated here as (8a, b) for convenience:

- (8) a. Me huu no.  
           I saw him/her  
           “I saw him/her.”
- b. Me hui [e].  
           I saw it  
           “I saw it”.

The verb that translates into English as “saw” has two forms: **huu** and **hui**. The former appears before the overt pronoun **no** “him/her” while the latter which has no overt object has the final vowel suffix **-i**. It is easy to be led into thinking that this extra suffix is an object marker (clitic) of some kind in Akan, but in an investigation with Marie Labelle (p.c.), we found no evidence to support this.

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<sup>3</sup> Felix Ameka (p.c.) informs me that in Ewe, another Kwa language spoken in the eastern parts of Ghana, and in Togo and Benin, it is not possible for the subject clitic to be conjoined as in (i):

(i) \*Me kplé Kofi "I and Kofi".  
       I and K.

but (ii) which involves what is termed the 'independent' form of the pronoun is possible:

(ii) Nye kplé wò. "I and you".  
       I and you

He notes that the impossibility of (i) follows from the clitic nature of the form **me**.

Akan verbs form a past tense by lengthening the final vowel of the stem if it is not followed by an object or an adjunct<sup>4</sup>. As Dolphyne (1988:94) points out, “where the verb is not immediately followed by an object or complement, a final low tone suffix -i/-e, which agrees with the vowel of the stem in being advanced or unadvanced occurs after the stem.” This explains the difference in the forms of the verb in (8). The suffix is not restricted to transitive verbs alone; it appears on the past tense forms of verbs such as *sere* “laugh” and *da* “sleep” which are normally analyzed as intransitive in a language like English. For example,

- (9) a. Esi serei.  
“Asi laughed”.
- b. Esi dae.  
“Asi slept”.

and on verbs that normally do not assign accusative case as in (10):

- (10) a. O-dui.  
“S/he arrived.”
- b. O-dwanei  
“S/he fled/ran away.”

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<sup>4</sup> Apart from the past tense, the other tense and aspectual markers are prefixes and the extra suffix does not appear on these forms when the verb has no object/complement.

The verbs in (9) and (10) do not have objects and as can be seen from the examples, they have the final vowel suffix just as the transitive verb in (8b) whose object is null. The final suffix disappears if an object or an adjunct is present as in (11):

- (11)
- a. Esi seree Kofi.  
E. laughed K.  
"Esi laughed at Kofi."
  - b. Esi daa dan no mu.  
E. slept room the in  
"Esi slept in the room."
  - c. Oduu Nkran anɔpa tutuutu.  
3sg:arrived Accra morning very early  
"S/he arrived in Accra very early in the morning."
  - d. Odwancee ntemntem.  
3sg: ran fast-fast  
"S/he ran (away) very fast."

The verbs in (11) are followed by either an NP (a, b, c) or an adverbial (d) and in each case the extra vowel suffix disappears.

Reduplicated verbs provide evidence that the extra vowel suffix is not an object marker. Such verbs are not normally used transitively in Akan. For example the verb *dii* "ate" can take an object as in (12a) but its reduplicated form *didii* "ate" cannot, as shown in (12b). The final vowel suffix can however show up on the

reduplicated verb as in (12c). The ungrammaticality of (12b) results from the transitive use of an otherwise intransitive form of the verb. It would, therefore, make no sense to say that the extra vowel in (12c), for example, is an object marker/clitic when this form cannot take an object.

- (12) a. Ama **dii** emo.  
 A. ate rice  
 "Ama ate rice."
- b. \*Ama **didii** emo.  
 A. ate-ate rice  
 "Ama ate rice."
- c. Ama **did(ε/e)**.  
 A. ate-ate  
 "Ama ate."

Another reason why the extra vowel cannot be a clitic or an object marker is that it does not show up with other tense and/or aspectual forms. For example,

- (13) a. Ama behu [e].  
 A. will:see it  
 "Ama will see it."
- b. \*Ama behui.
- c. Kwame afa [e].  
 K. has:taken it  
 "Kwame has taken it."

- d. \*Kwame afae [e].  
Kw. has: taken it

It appears, therefore, that the extra vowel is a feature of the past tense form of the verb only and that it is used to distinguish between a past tense verb that is used transitively or is followed by an adjunct as in (11d) from one that is not. It is not a clitic put on the verb to indicate agreement of any sort, neither does it function as an object marker. The absence of the final/extra suffix is always indicative of the fact that something else follows the verb.<sup>5</sup>

#### 4.1.3 The Null Pronoun in Akan

Writing in 1963, long before GB theory and the Projection Principle, Stewart suggested that there might be what he called 'zero object' pronouns in Akan. He arrived at this decision by comparing examples like (14a, b):

- (14) a. ɔɔpám. "He is sewing it (lit. 'he-is-sewing')"  
b. ɔɔpám adée. "He is sewing (lit. 'he-is-sewing-thing')"  
(Stewart 1963:149, his translation)

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<sup>5</sup> In normal conversation, when someone utters:

- i. Mɛkɔɔ ... "I went ..."

one would normally expect that s/he would provide an argument for the verb to make the sentence 'complete', e.g.:

- ii. Mɛkɔɔ Nsaba. "I went to Nsaba."

If the endpoint of the movement (i.e. goal) is understood/has been mentioned in the context, then the speaker would say:

- iii. Mɛkɔɛ. "I went." (= "I went there")

not (i).

It appears to me, therefore, that the extra vowel of the past tense form of the verb is conditioned by discourse factors.

Within current grammatical usage, we can positively state that there is indeed a null object (= Stewart's 'zero object') after the verb *pám* "to sew" in the example in (14a) because the verb subcategorizes for an object NP. In (14b) the lexical NP *adée* "thing" satisfies the argument structure of the verb. Though there is no overt object after the verb in (14a) it is understood to be there. The sentence will be used felicitously in a situation where the speaker and the listener have a specific thing that the tailor/dressmaker is sewing in mind. This suggests that the 'gap' after Akan transitive verbs in this and other types of sentences are to be regarded as instances of the null pronoun (*pro*) and this is the view that I take in this study.

The choice between the use of an overt pronoun and the null pronoun is dictated by the animacy criterion in the language as has been discussed above. The null object/pronoun is not possible in situations where it will be construed with animate NPs. For example:

- (15) a. Kofi huu Adjoa.  
           "Kofi saw Adjoa."<sup>6</sup>
- b. Kofi huu no.  
           "Kofi saw her."
- c. \*Kofi huui *pro*.  
           "Kofi saw her."

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<sup>6</sup> Where the linear ordering of constituents in the Akan examples coincide with that of English, I will dispense with the glossing of the individual items and give the English translations.

- (16) a. Kwasi akyere      ɔwɔ no.  
 K.    has caught    snake the  
 “Kwasi has caught the snake.”
- b. Kwasi akyere      no<sup>7</sup> .  
 K.    has caught    it  
 “Kwasi has caught it”.
- c. \*Kwasi akyere      *pro*.  
 “Kwasi has caught    it”.

The (c) examples in (15 and 16) are not permissible in the language if the null pronoun (indicated by *pro*) is construed with animate NPs such as **Adjoa** (girl/woman’s name), and ɔwɔ no “the snake”. The pronoun has to be overt in such contexts. These facts show that Akan makes an animacy (gender) distinction between the 3rd person object pronoun. This distinction holds in the use of resumptive pronouns as well. It is therefore not surprising (as we shall see in the Akan examples in the subsequent sections), that whenever we find what would be a ‘gap’ in some languages, there is a resumptive pronoun.<sup>8</sup>

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<sup>7</sup> As a result of the striking similarities between the definite determiner *no* and the 3rd person object pronoun *no*, it has been suggested to me by Paul Hirschbühler (p.c.) that the pronoun might have been derived from the determiner. This may or may not be the case; I have no way of proving it at this stage.

<sup>8</sup>The animacy distinction can best be illustrated by using the verb *men(e)* “to swallow”. For example, if Kofi is given a piece of fried fish and he swallows it without chewing it first, one would say:

- i.      Kofi amen(e)      [e].  
 “Kofi has swallowed it (the piece of fried fish)”.

But if, as a kind of stunt, Kofi swallowed a live fish, it would be said:

## 4.2 Construction Types in Which Resumptive Pronouns Appear

Sells (1987); McCloskey (1990); Caskey (1990); and Engdahl (1982) etc., have shown that resumptive pronouns are not limited to relative clauses only as some linguists would have us understand. They appear in a wider range of structures in languages like Irish and Swedish. Akan resumptive pronouns appear in such structures as i) focused sentences, ii) constituent questions with clause/sentence-initial wh-words, iii) relative clauses, iv) cleft sentences.

### 4.2.1 Focused Sentences

Any constituent in an Akan sentence can be focused. This is achieved by base-generating that constituent in a pre-IP position before the focus (Foc.) complementizer *na* or *de(ɛ)*. An overt resumptive pronoun is also base-generated in situ if the focused constituent is an animate NP and a resumptive *pro* in the case of inanimate NPs. For example:

- (17) a.    **Me**    huu    ɔbaa   no.  
          I     saw   woman the  
          “I saw the woman.”

- 
- ii.     Kofi amen(e) no.  
       “Kofi has swallowed it (the live fish)”.

(i) cannot be used in a context where the fish was alive before Kofi put it in his mouth. Conversely, (ii) would not be appropriate if the fish had been processed; in that state, it would no longer be animate.

In the case of a dead person, the null pronoun is not appropriate, an overt pronoun has to be used as in (iii):

- iii.    **Me** siee   no.    “I buried him/her.”  
       I    buried 3sg.  
iv.     \***Me** sici.        “I buried him/her.”  
       I    buried it

- b.    ɔbaa<sub>i</sub> no    na    me    huu    no<sub>i</sub>.  
 Woman the    Foc    I    saw    her  
 “The woman I saw her”.
- (18) a.    Me    huu    adaka no.  
           I    saw    box    the  
           “I saw the box.”
- b.    Adaka<sub>i</sub> no    na    me    huui    pro<sub>i</sub>.  
 Box    the    Foc    I    saw    it  
 “The box I saw it”.

In the (b) examples of (17) and (18) there is an NP in an A'-position and there is a pronoun (overt in the case of 17b and null in the case of 18b) in object position in the complement sentence (IP) that is coindexed with this NP.

If we assume, for example, that the pro(noun)s are anaphoric not resumptive, then we expect them to obey Principle A of the Binding Theory, which stipulates that an anaphor must be bound in its governing category; the governing category being the minimal domain containing it, its governor and an accessible subject/SUBJECT (Chomsky, 1981). The lexical pronoun *no* “her” and the null pronominal in (17b) and (18b) respectively are not bound in their governing category which is the IP to which the focused NP is attached. They are free, thus they obey Principle B of the Binding Theory — indicating that they are pronouns/pronominals.

Nothing prevents these pronouns from being bound by the focused NPs in the examples. Since these NPs are not in an A-position but an A'-position, the binding

between them cannot be A-binding but A'-binding. The pronouns, therefore, will be characterized as A'-bound pronominals (cf. Cinque 1990). If we assume with McCloskey (1990:199) that a resumptive pronoun is a syntactic variable, in other words, "an element whose immediate binder is in an element in an A'-position", then these pronouns qualify to be called resumptive.

The resumptive pronouns agree in number, person, and gender with their antecedents. For example, the NP **ɔbaa no** "the woman" in (17b) is singular and animate and the pronoun **no** "her" which refers back to it is also third person, singular, and animate. The NP **adaka no** "the box" in (18b) is inanimate and singular and the resumptive pronoun that refers back to it is also inanimate. If a plural NP is used, as is the case of **mbaa no** "the women", and **ndaka no** "the boxes", then the resumptive pronoun would have to be plural as well (at least in the case of the overt pronouns):

- (19) a.    **Mbaa<sub>i</sub> no na me huu wɔn<sub>i</sub>.**  
           Women the Foc I saw them  
           **"The women I saw them".**
- b.    **Ndaka<sub>i</sub> no na me hui pro<sub>i</sub>.**  
           Boxes the Foc I saw them  
           **"The boxes I saw them".**

The pronoun **wɔn** "them" agrees in person and number and animacy with the initial NP **mbaa no** "the women". Although the language does not make any distinction between the masculine and the feminine genders, we can assume that the two agree in the necessary phi-features if such features are warranted. The

inanimate 3rd person pronoun is null for both singular and plural as can be seen in (18b) and (19b).

#### 4.2.2 Focused Wh-Questions

As has been stated in chapter 3, Akan has two types of wh-questions: i) one in which the wh-phrase is in situ as in the (a) examples in (20) and (21), and ii) another in which the wh-phrase is on the left periphery of the sentence as in the (b) examples in (20) and (21):

- (20) a. Ama rehwehwe hena?  
A. is looking for whom  
"Ama is looking for whom?"
- b. Hena na Ama rehwehwe no (no)?<sup>9</sup>  
Who Foc. A. is looking for him/her CD  
"Who Ama is looking for him/her?"
- c. Hefo; na Ama rehwehwe wɔn; (no)?  
Who:pl Foc A. is looking for them CD  
"Who Ama is looking for them?"
- (21) a. Ama rehwehwe den?  
A. is looking for what  
"Ama is looking for what?"

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<sup>9</sup> The particle *no* after the resumptive pronoun *no*, is a determiner. This form also shows up at the end of relative clauses. I will gloss it as "the" when it occurs in relative clauses and as clause determiner (CD) in questions and other structures. The position of this determiner and why it is analyzed as such is presented in chapter 5.

- b.    Den<sub>i</sub>   na     Ama   rehwehwe   *pro<sub>i</sub>* (no)?  
       What Foc.  A.    is looking for it    CD  
       “What Ama is looking for it?”

The (b) examples show that the constructions involving sentence-initial wh-phrases are similar in structure to those in focused declarative sentences. The wh-phrase is in sentence-initial position and the focus marker *na* attached to it before the complement IP. I will offer an analysis of these structures in chapter 5.

#### 4.2.3 Relative Clauses

Relative clauses in Akan are marked by the relative marker (Rel) *a* at the beginning of the clause and a determiner *no* "the" after it:

- (22)   a.    Abofra<sub>i</sub> (no)   a     Ama   rehwehwe   *no<sub>i</sub>* no ...  
           Child (the) Rel.  A.    is looking for him the  
           “The child whom Ama is looking for (him/her) ....”

- b.    Mbofra<sub>i</sub> (no)   a     Ama   rehwehwe   wɔn<sub>i</sub> no ...  
       Children (the) Rel A.   is:looking for them the  
       “The children that Ama is looking for (them) ...”

- (23)   a.    Adaka<sub>i</sub> (no)   a     Ama   rehwehwe   *pro<sub>i</sub>*    no ...  
           Box (the) Rel.   A.    is looking for it    the  
           “The box that Ama is looking for it ....”

- b. Ndaka<sub>i</sub> (no) a Ama rehwehwe *pro*<sub>i</sub> no ...  
 Boxes (the) Rel) A. is:looking for them the  
 "The boxes that Ama was looking for (them) ..."

The examples in (22) and (23) show heads of relative clauses that are coindexed with an overt resumptive pronoun **no** "him/her" (in bold type face) and a null resumptive *pro*(noun). I assume that the N head of the relative clause is base-generated to the left (i.e. in Spec, DP) and the relative marker **a** attached to it in C<sup>0</sup> before the embedded IP<sup>10</sup>. The resumptive *pro*(noun) is also base-generated in situ. The second word **no** that comes after the resumptive pronoun (glossed as CD = clause determiner) is the same as the definite determiner, the equivalent of the English "the". It is not surprising that this particle/word should occur in that position since determiners in Akan always follow the nouns or NPs they modify and the whole relative clause structure is a complex NP (or DP).

The determiner does not inflect to agree in features with the noun it modifies and this is shown in (22b) where the noun head of the relative clause is plural and the coindexed resumptive pronoun is also plural in form. In structures that terminate in two words of the form **no** as in the relative clause examples in (22a) the first **no** is always the resumptive pronoun and the second one the determiner. This can be clearly seen when (22a) is compared with (22b) where the pronoun is plural.

#### 4.2.4 Cleft Sentences

Akan sentences with focused constituents resemble cleft sentences in English and it is possible to translate them into English with cleft constructions. Besides

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<sup>10</sup> More will be said about this in chapter 5.

these structures, however, there are sentences of the type exemplified in (24) in which the Akan equivalent of "It is ..." is used:

- (24) a.  $\epsilon y\epsilon$  Kofi<sub>i</sub> na o<sub>i</sub>-h<sub>uu</sub> abofra no.  
 It:is K. Foc he:saw child the  
 "It is Kofi who saw the child."
- b.  $\epsilon y\epsilon$  abofra<sub>i</sub> no na Kofi h<sub>uu</sub> no<sub>i</sub>.  
 It:is child the Foc K. saw 3sg  
 "It is the child that Kofi saw (him/her)."
- (25) a.  $Ey\epsilon$  ne ataade<sub>i</sub> a Ama hy $\epsilon\epsilon$  *pro*<sub>i</sub> no.  
 This is dress Rel Ama wore it the  
 "This is the dress that Ama wore (it)".
- b.  $Oy\epsilon$  ne onipa<sub>i</sub> a  $\epsilon$ <sub>i</sub>-pam ataade<sub>j</sub> a Ama hy $\epsilon$  *pro*<sub>j</sub> no.  
 This is person Rel 3sg:sewed dress Rel A. wear it the  
 "This is the person that (s/he) made the dress that Ama is  
 wearing (it)".  
 (it)."

The clefted constituent is followed by the focus complementizer **na** and there is a resumptive pronoun in situ. (25) involves the clefting of the head of a relative clause and this time it is the relative complementizer that is used to introduce the complement clause.

#### 4.2.5 Clausal Positions in which Resumptive Pronouns Appear

The examples cited in (17) to (23) all show resumptive pronouns in direct object position in the complement clauses. This is by no means the only position where resumptive pronouns occur in the language<sup>11</sup>. Subject resumptives are also possible in the language in all of the types of constructions discussed above. For example:

(26) a.   ɔbaa<sub>i</sub>   no na   o<sub>i</sub>-huu Kofi.

Woman the Foc. she:saw K.

"The woman (she) saw Kofi"/ "It was the woman who saw Kofi".

b.   Adaka<sub>i</sub> no na   ε<sub>i</sub>-yerae.

Box   the Foc it:was lost

"The box (it) is lost"/ "It is the box that is lost."

(27) a.   Hena<sub>i</sub> na   ɔ<sub>i</sub>-frɛɛ   Ama?

Who Foc 3sg:called A.

"Who (s/he) called (to) Ama?"

---

<sup>11</sup> In double object constructions involving the verb *ma* "give", either of the objects following the verb may be questioned and/or focused. A resumptive pro(noun) will occur in situ in the corresponding argument position in the complement clause as in (ii) and (iii):

(i).   Kofi maa Ama sika.  
K.   gave A. money  
"Kofi gave Ama money"

(ii).   Hena<sub>i</sub> na Kofi maa no<sub>i</sub> sika (no)?  
Who Foc. K. gave 3sg money the  
"Who did Kofi give money to (her)."

(iii)   Den<sub>i</sub> na Kofi maa Ama pro<sub>i</sub> no?  
What Foc. K. gave Ama it the  
"What did Kofi give (it) to Ama?"

- b.     Dɛnɿ na ɛɿ-bɔɔ wo?  
           What Foc it:hit you  
           **"What (it) hit you?"**
- (28) a.   Abofraɿ a oɿ-huu Ama no ni.  
           Child Rel 3sg:saw A. the is this  
           "The child who saw Ama is this"/ "This is the child who saw  
           Ama".
- b.     Kaaɿ a eɿ-si hɔ no yɛ fɛ.  
           Car Rel. it:standing there the is beautiful  
           "The car over there is beautiful".

The examples in (26), (27) and (28) involve focused, questioned, and relativized subjects respectively. The (a) sentences involve animate NPs and the (b) ones inanimate NPs. In each case a resumptive pronoun ɔ-/o- "s/he" (animate), and ɛ-/e- "it" (inanimate), occurs in subject position in the complement IP.

In the case of questions, the Fante dialect presents an interesting paradigm. While the examples in (27) seem to be the norm in all the dialects, Fante allows, in addition to the examples of the type in (29a) and (30a), the structure in (29b) and (30b) in which the wh-word occurs in sentence-initial position without a focus marker or a resumptive pronoun:

- (29) a.   Woanaɿ na ɔɿ-free Ama?  
           Who Foc 3sg: called A.  
           **"Who called (to) Ama?"**

- b. Woana free Ama?  
Who called A.  
"Who called Ama?"
- c. \*Woana<sub>i</sub> ɔ<sub>i</sub>-free Ama?  
Who 3sg: called A.

- (30) a. Ebenadze<sub>i</sub> na ɔ<sub>i</sub>-bɔɔ wo?  
What Foc it:hit you  
"What hit you?"
- b. Ebenadze bɔɔ wo?  
What hit you  
"What hit you?"
- c. \*Ebenadze<sub>i</sub> ɔ<sub>i</sub>-bɔɔ wo?  
What it:hit you

The (a) examples in (29) and (30) are similar in structure to the ones in (27) in which the subject wh-word is focused and a resumptive pronoun occurs in subject position in the complement IP. Besides that, Fante has the structure in (29b) in which the wh-word is not focused (i.e. occurs without the focus marker). Without the focus marker in C<sup>0</sup>, the subject resumptive pronoun is not possible, as shown in (29c). This suggests that it is the focus maker *na*, that licenses the subject resumptive pronouns in the language. I will therefore assume that the subject position in Akan is properly governed by an element in COMP. The existence of

structures like (29b) also indicates that the Fante dialect allows subject wh-words/phrases to stay in situ.

Dolphyne (1976) notes the occurrence of sentences like (31) in the Brong, Gomoa, and Agona dialects in which there is an NP at sentence-peripheral position followed by an IP with a pronominal subject. Osam (1993) makes a similar observation for Fante and Brong. They analyze the subject pronoun in such structures as 'subject concord marker' and 'verb agreement prefix' respectively:

(31) a. Baa no ə-baa. (Gomoa)

Woman the she:came

"The woman came".

(Dolphyne 1976: 23, ex. c)

b. əhen no ə-ye edwuma papa. (Fa.)

Chief the 3sg:do work good

"The chief works very hard".

(Osam, 1993: 89, ex. 12a).

Perhaps these analyses are based on analogy with what happens in Bantu and other languages that have such markers. For example, in Chichewa, (a Bantu language spoken in eastern Africa), the inflected verb has subject markers (SM) and object markers (OM) which show person, number, and gender of the subject and object affixed to it (see footnote 1 of chapter 2, and Bresnan and Mchombo, 1987 for examples of this). Since Akan does not have the noun class system found in Chichewa as laid out in Bresnan and Mchombo (op. cit., p. 744) and it is difficult for me to figure out what the pronoun ə 'agrees' with.

If *ɔ* were an agreement marker, then it would be possible to question a subject in situ with such a marker attached to the verb as it happens in the Chichewa example in (31'a). The Akan equivalents in (31'b, c) and similar examples like (29c) and (30c) above are ungrammatical. (31'd) which involves the animate subject pronoun *ɔ* is equally bad. Note also that an object wh-element cannot occur in situ with the object pronoun *no* as in (31'e). These facts indicate that what I call the nominative forms of the subject pronoun (i.e., *ɔ/o* and *ɛ/e*) as well as the object form *no*, are really pronouns, not agreement markers. Because they are pronouns, and not agreement markers, they cannot co-occur with in situ wh-elements, thus the representation in (31'a) is not available in Akan:

- (31') a. (Kodí) chínyani chi-ná-ónék-a? (Chichewa)  
 Q what(7) SM(7)-PAST-happen-INDIC  
 "What happened?"

[Kodí chínyani chi-náónéka]

Q SUBJ SM



grammatical agreement

(Bresnan and Mchombo, 1987: 780, exx. 42)

- b. \*Dɛn e-sii? (Akan: Akuapem)  
 What it-happened  
 "What happened?"

- c. \*Ebenadze o-sii? (Akan: Fante)<sup>12</sup>  
 What it-happened  
 "What happened?"
- e. \*Kofi huu hena no?  
 K. saw who 3sg  
 Kofi saw who(m)?"

Returning to the examples in (31), it could be seen that they occur side by side with those in (32a) and (33a) in which a full NP is used, and (32b) and (33b) in which only the subject pronoun is used:

- (32) a. əbaa no bae.  
 Woman the came  
 "The woman came".
- b. ə- bae.  
 3sg:came  
 "S/he came".

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<sup>12</sup> As I show in chapters 3 and 5, Fante is the only dialect of Akan I know of which allows in situ questioning of subjects without focusing. Even in this dialect, the subject wh-word cannot co-occur with the nominative form of the inanimate subject pronoun as in (31'c) or the nominative animate subject form ə/o as in (i,a):

- (i) a. \*Woana ə-baa ha?  
 Who 3sg:came here  
 "Who came here?"
- b. Woana baa ha?  
 "Who came here?"

- (33) a.   ɔhen   no    yε edwuma   papa.  
           Chief the   do work    good  
           "The chief works very hard".
- b.   ɔ- yε edwuma    papa.  
           3sg:do work       good  
           "S/he chief works very hard".

It seems to me that the structures in (31) are not peculiar to the dialects mentioned by Dolphyne and Osam (i.e. Brong, Gomoa, Agona, and Fante); they may occur in the other dialects as well. Perhaps the only difference being that they occur more frequently in the speech of the speakers of Brong, Gomoa, Agona, and Fante than the others. Secondly, I propose that the sentences in (31) involve Left-Dislocation or Topicalization of the subject NP and that the pronoun is resumptive, not an agreement or concord marker. According to my analysis, the sentences in (31) have the structure in (34):

- (34)       [CP NP<sub>i</sub> [C' [IP Pron<sub>i</sub> VP]]]

The sentences in (31) differ from those involving focused constituents (e.g., those in 26) marginally in terms of the absence of a focus marker in the former and its presence in the latter. In other words while C<sup>o</sup> is empty for structures such as (31), but it is filled with a focus marker in the case of the sentences in (26).

#### 4.3 Resumptive Pronouns and Complementizers

In languages, such as Irish (McCloskey, 1990), Sells (1984), and Shlonsky (1992); and Hebrew (Borer, 1984), the presence or absence of resumptive

pronouns is determined by the presence or absence of a particular form of the complementizer. Irish, for example, has two types of complementizers represented as *aL* and *aN*. The former introduces clauses with gaps while the latter introduces clauses with resumptive pronouns. This yields two types of relative clause, in Irish as the following representations show:

- (35) (= McCloskey, op. cit., p.220, ex. 56)
- a. [NP [CP *aL* [ ... t ...]]]
  - b. [NP [CP *aN* [ ... *pro* ...]]]

The relative clause in (35a) is a 'movement' type and the one exemplified in (35b) is a non-movement kind. Shlonsky, (op. cit., p. 455), commenting on the alternation between complementizer type and gaps and resumptive pronouns as indicated in Irish, states that what determines the presence of a gap or resumptive pronoun in the relativized position is dictated by the "possibility or impossibility of movement to [Spec/C], not the choice of the complementizer per se".

Akan does not show any alternation between complementizer type and the presence or absence of a resumptive pronoun. In addition, the language does not allow any alternation between gaps and resumptive pronouns as happens in Irish and Hebrew. All relative clauses and constituent questions with preposed wh-words/phrases are introduced by the same complementizers *a* and *na* respectively and in each case an overt or null resumptive pro(noun) is in situ at the appropriate relativized or questioned position.

Consider the following examples which involve two positions related to the initial question or relative word:

- (36) a. Hena<sub>i</sub> na Kofi<sub>j</sub> free no<sub>i</sub> ansa na ə<sub>j</sub>-resoma no<sub>i</sub> no?  
 Who Foc K called 3sg before he:sent 3sg CD  
 "Who did Kofi call him/her before he sent him/her?"
- b. \*Hena<sub>i</sub> na Kofi<sub>j</sub> free no<sub>i</sub> ansa na ə<sub>j</sub>-resoma —<sub>i</sub> no?  
 Who Foc K called 3sg sent 3sg:sent 3sg CD  
 "Who did Kofi call him/her before he sent him/her?"
- (37) a. Oyi ne əbaa<sub>i</sub> a Kofi<sub>j</sub> anhu no<sub>i</sub> ansa na ə<sub>j</sub>-reware no<sub>i</sub> no.  
 This is woman Rel K not:see her before he:married her the  
 "This is the woman who Kofi did not see (her) before he  
 married (her)."
- b. \*Oyi ne əbaa<sub>i</sub> a Kofi<sub>j</sub> anhu no<sub>i</sub> ansa na ə<sub>j</sub>-reware —<sub>i</sub> no.  
 This is woman Rel K not:see her before he:married her the  
 "This is the woman who Kofi did not see (her) before he  
 married (her)."

The examples in (36) and (37) involve a content question and a relative clause respectively. The sentence-initial wh-word and the head of the relative clause is each coindexed with two resumptive pronouns, one in the top clause and the other in the adjunct clause in the (a) examples. It is not possible to have a gap in the adjunct clause as indicated in the (b) examples. This conforms with Chomsky's (1982) prediction that resumptive pronouns should not license parasitic gaps but it is at variance with data from other languages like Swedish (Engdahl, 1985), Hebrew (Shlonsky, 1992), and Tuki (Bilola, 1989) which show that resumptive pronouns can license parasitic gaps. Resumptive pronouns in Swedish, for

example, license parasitic gaps in relative clauses as well as in questions (Engdahl, op. cit.).

#### **4.4 An Analysis**

The presence of resumptive pronouns in certain types of constructions has been analyzed from different viewpoints in the literature. First, it is seen as a kind of saving device that is employed to 'repair' the results of illicit movement from certain critical environments where a gap may result in the violation of such grammatical principles as the ECP or island constraints (see Rizzi, 1990, p.123, fn. 25; Shlonsky, op. cit., etc.). In such contexts, the resumptive pronoun is seen as the spellout of illegitimate traces (Chomsky 1981). Second, it has been argued by some researchers, for example, Shlonsky (op. cit., p.465), that resumptive pronouns are employed as a 'last resort' device when movement violates some grammatical constraint, a view that is close to the preceding one. Yet a third view is that the presence of resumptive pronouns in certain argument positions is indicative of the fact that no movement has taken place from that position in the particular sentence/structure.

I will examine these viewpoints in the light of the Akan facts and show that resumptive pronouns in Akan are not trace spellouts but rather ordinary pronouns that are coindexed with antecedents in A'-position and that the structures they occur in are not the result of wh-movement. First, I will consider what the antecedent of the resumptive pronoun is.

##### **4.4.1 Binding of Resumptive Pronouns**

The binding and/or interpretation of resumptive pronouns has been widely discussed in the literature, for example, Sells (1984, 1987), Safir (1986), Caskey, (1990), and McCloskey (1990). In this study, I will assume that Akan allows

antecedent binding of resumptive pronoun, and that the antecedent may be syntactically local or it may be found in the preceding discourse.

Sentences like those in (38) and (39) involving constituent questions with focused wh-words that are linked into a position inside a temporal island occur in the language:

- (38) [CP Den<sub>i</sub> na [IP Kofi kyerew anansesem]  
 What Foc. K. wrote story  
 [TEMP ansa na ɔ-redi *pro*<sub>i</sub>?]]<sup>13</sup>  
 before he: ate it  
 “What did Kofi write a story before he ate (it)?”

- (39) [CP Hena<sub>i</sub> na [IP Kofi bɔɔ bosea]  
 Who Foc. K. borrowed money  
 [TEMP ansa na ɔ-reware no<sub>i</sub> no]]  
 before he: married her the  
 “Who did Kofi borrow money before he married her?”

In (38a) and (39b) the wh-word is linked to an argument position (i.e., co-indexed with the resumptive *pro* and overt resumptive pronoun, respectively) inside a temporal island. No Subjacency effects arise and the sentences are grammatical. These facts show that syntactic distance plays no role in the linking of resumptive pronouns and their antecedents. In other words, I am echoing McCloskey's (1990:

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<sup>13</sup>Sentences such as in (38) were tested in an experiment. In a grammaticality judgement task involving six adult speakers of Akan, such a sentence received 4.28 rating on a scale of 0 - 5 (where 0 = completely unacceptable, and 5 = completely acceptable). The results of this test are presented and discussed in chapter 7 of this thesis.

209) assertion that the binding of resumptive pronouns is not constrained by Subjacency or by the ECP.

#### 4.4.2 Resumptive Pronouns in Akan: Base-Generated Pronouns or Trace Spellouts?

Shlonsky (op. cit.), discusses the distributional paradigm of resumptive pronouns in Hebrew and Palestinian and correlates the occurrence of resumptive pronouns with the impossibility of movement from certain argument positions. He states that the absence of resumptive pronouns in examples like (40) and (41) is a direct result of the possibility of movement:

(40) Hebrew (= Shlonsky, 1992: 445, ex. 6):

ha- ʔis se- (\*hu ) ʔohev ʔet Rina  
the-man that (he) loves ACC Rina  
"The man who loves Rina".

(41) Palestinian (= Shlonsky, 1992: 446, ex. 12):

l-bint ʔilli (\*hiy) raayha ʕal beet  
the-girl that (she) going to house  
"The girl that is going home"

He argues that resumptive pronouns are not possible in the highest possible subject position of relative clauses as indicated by the asterisks against the items in parenthesis in (40) and (41). The explanation for the impossibility of resumptive pronouns in this environment is attributed to McCloskey's (1990) *Highest Subject Restriction* (HSR) which stipulates that the *highest* subject position of a clause cannot be occupied by a resumptive pronoun, and since nothing prevents short wh-

movement from [Spec, I] to [Spec, C], it follows from economy principles that the last resort strategy is blocked, hence the occurrence of gaps in this environment, to the exclusion of resumptive pronouns.

The situation is different in Akan. In this language, resumptive pronouns occur and are obligatory in the highest subject position, as the following examples show:

- (42) a.   ɔbarima<sub>i</sub> a   ɔ<sub>i</sub>-dɔ   Ama no.  
           Man     Rel he:loves A. the  
           "The man that/who loves Ama."  
       b.   \*ɔbarima<sub>i</sub> a   -dɔ   Ama no.  
           Man     Rel. loves A. the

I do not know of any general grammatical principle that prevents movement from the subject position in the structures in (42). It seems that in Akan the subject position after a complementizer must always be filled by either a lexical NP or an overt pronoun. This is the case for both relative clauses and constituent questions.

The Fante dialect, however, can optionally have a subject wh-word sentence-initial position without a focus marker and a subject resumptive pronoun as in (43c):

- (43) a.   Hena<sub>i</sub> na   o<sub>i</sub>-huu   Ama?  
           Who   Foc 3sg:saw A.  
           "Who saw Ama"/ "Who was it that (s/he) saw Ama?"  
       b.   \*Hena<sub>i</sub> na   —<sub>i</sub> -huu   Ama?  
           Who   Foc —   saw A.

- c. Woana (\*o)- hun Ama? (Fante)  
 Who (\*3sg): saw A.  
 "Who saw Ama?"

(43a) shows the general pattern in the language (i.e., when the *wh*-word is focused, a resumptive pronoun must appear after the focus complementizer). (43b) is ungrammatical for this reason. In addition to the structure in (43a), Fante has the structure in (43c) in which the *wh*-word is unfocused. Note that a subject resumptive pronoun is illicit in this kind of construction. It can be said that Fante is liberal in having both in-situ and focused subject *wh*-words. The resumptive pronouns in such structures, therefore, are not the result of a saving device and/or last resort strategy.

The second, and by far the strongest, argument to support the claim I am making comes from the existence of such sentences as in (44) and (45):

- (44) a. Abofra<sub>i</sub> a Kofi huu no<sub>i</sub> no ...  
 Child Rel. K. saw 3sg the  
 "The child that Kofi saw (him/her)"

- b. \*Abofra a Kofi huu — no ...  
 Child Rel K saw — the

- (45) a. Hena<sub>i</sub> na Kofi huu no<sub>i</sub> no?  
 Who Foc K. saw 3sg CD  
 "Who did Kofi see (him/her)?"

- b. \*Hena na Kofi huu — no?  
 Who Foc K. saw — CD

If there is any particular position from which wh-movement may be launched without infringing any grammatical principle(s), it is the direct object position. Such a position is properly governed by the verb so extraction would not violate the ECP. In *Barriers* (Chomsky 1986) theory, NPs in object position are L-marked, making extraction from such a position licit and the use of a resumptive pronoun in that position unnecessary. But as examples in (44) and (45) show, a gap (which I consider to be the minimal diagnostic for movement) is not possible in such a position in Akan. The resumptive pronouns in (44) and (45), therefore, cannot be spellouts of offending traces left by movement. They are base-generated.

The fact that the language allows structures like (39) repeated here as (46a) and also (46b) argues for a non-movement analysis of such structures:

- (46) a. Hena<sub>i</sub> na Kofi<sub>j</sub> kɔbɔɔ bosea ansa na ɔ<sub>j</sub>-reko<sub>ware</sub> no<sub>i</sub> no?"  
 Who Foc. K. borrowed money before he: married her CD  
 "Who did Kofi borrow money before he married her?"
- b. ɔdan ben<sub>i</sub> na wonim onipa<sub>j</sub> ko a ɔ<sub>j</sub>-sii  
 House which Foc you:know person specific Rel 3sg:built it  
*pro<sub>i</sub>* no?  
 it the  
 "Which house do you know the person that built it?"

In (46a) the *wh*-word is linked to a resumptive pronoun in a temporal clause and in (46b) it is linked to resumptive *pro* in a relative clause — both instances of a violation of island constraints. It could be argued that the resumptive pronouns show up in these environments because movement is impossible. One can also argue (and this is the position I take) that these structures are possible because they involve no movement. It is the case that a base-generated pronoun can be linked to (or bound by) an operator in an A'-position that violates Subjacency. This view is in accord with McCloskey's (op. cit. p. 209) assertion that such grammatical principles as Subjacency and the ECP do not constrain the binding of resumptive pronouns, though they constrain *wh*-movement.

#### 4.5 Resumptive Pronouns and Adjuncts

The animate/inanimate distinction between overt and null (resumptive) object pronouns is neutralized in certain contexts in Akan. It appears that the object (resumptive) *pro* always occurs sentence-finally (Cf. Stewart, 1963; Boadi, 1976; Akrofi 1965:30). More specifically, it cannot appear followed by an adjunct — either an adverbial or a locative phrase. For example, (47b), with the null pronoun, can be a felicitous answer to the question in (47a) but (47c) cannot because the object NP which is being questioned is inanimate. Since the discourse antecedent is inanimate, only *pro* can be used in object position after the verb; the overt pronoun is not permissible in this context.

- (47) a.    Wo    ahu    safoa a   ε    yerae       no?  
           You   seen   key Rel it   was lost     the  
           "Have you seen the key that was lost?"

b.    Yiw, me    ahu            *pro*.  
       Yes    I        have seen    it  
       "Yes, I have seen it."

c.    \*Yiw, me    ahu            **no**.  
       Yes    I        have seen    it

But if we consider (48a), which contains a locative phrase, as a follow-up to the question in (47a), then the object must be overtly expressed even though it has inanimate reference:

- (48)    a.    Wo    huu    **no**    wɔ    he?  
           You   saw   it        at        where  
           "Where did you see it?" (i.e., the key)
- b.    ?Wo   huu    *pro*    wɔ    he? <sup>14</sup>  
           You   saw   it        at        where

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<sup>14</sup> From discussions with some Akan-speaking friends, it appears that (48b & 48d) are possible if said with a kind of comma intonation, (i.e., with a pause after the verb e.g.:

- i.        Wo    hue    *pro*    wɔ    he?  
           You   saw   it        at        where  
           "You saw it, where?"
- ii.        Me    hue *pro* wɔ    pon    no    so.  
           I     saw   it        at        table   the    on  
           "I saw it on the table."

My thanks to Kwabena Ofofu Asamoah, Paul Barfour-Dokyi and Alex Nyarko for their help in discussing some of these examples.

c. Me huu no wo pon no so.  
 I saw it on table the top  
 "I saw it on top of the table"

d. ?Me huu pro wo pon no so.  
 I saw it at table the top  
 "I saw it on the table".

(48a), in which an overt object pronoun is substituted for the discourse topic "the key" is to the one in (48b) which has the null object pronoun. The same can be said for the answers in (48c, d). It appears that when other constituents (a locative phrase in this case), come after the object, an overt pronoun has to be used instead of the null pronoun.

The same observation can be made when the pronoun is followed by an adverbial of time. For example:

(49) a. Wo huu no bere ben?  
 You saw it time what  
 "When did you see it?" (i.e. the key)

b. \*Wo huu pro bere ben?  
 You saw it time what  
 "When did you see it?"

c.    **Me**    huu    **no**    nnera.  
       I       saw   it       yesterday  
       "I       saw   it       yesterday".

d.    \***Me**    huu    *pro*    nnera.  
       I       saw   it       yesterday

The examples in (49) and (49c) show that the null pronoun is not possible before the adverbial of time. It appears that without the overt pronoun in these circumstances the adverbial phrase may be picked out as the object of the verb. This is to be expected since these adverbials in Akan are noun-like in nature and it is possible for them to be construed as the complements of the verb. For example, the presence of the overt object pronoun in (50a) makes a difference between the interpretation of the phrase *ɔpon no so* "on the table", as: i) a locative phrase (where something was seen), or ii) as the thing that was seen as in (50b):

(50)   a.    **Me**    huu    **no** ɔpon    no    so.  
       I       saw   it    table    the    on  
       "I saw it (the key) on (the top of) the table".

b.    **Me**    huu    ɔpon    no    so.  
       I       saw   table   the    on  
       "I saw the top of the table".

It is unclear what general principles are at work in determining the occurrence/non-occurrence of the null pronoun in these contexts. But it appears that the most

preferred position for the null pronoun is at the end of the clause/sentence in which it occurs. It seems to me that whether we analyze adjuncts as occurring VP-internally (e.g. manner adverbials, see chapter 2 of this study) or as attached to some other projection, makes no difference; once some other constituent comes after the verb, the object pronoun must be phonetically realized whether it has inanimate reference or not.

The use of overt pronouns for inanimate referents before adjuncts extends to the use resumptive pronouns also. For example, (51b) with the resumptive *pro* instead of an overt pronoun before the time adverbial/temporal adjunct as in (51a) is unacceptable. But (51c), which contains no temporal adjunct, is acceptable with the resumptive *pro*.

- (51) a. Asem a wokaa no nnera no, me were afi.  
 Matter Rel. you:said it yesterday the I have forgotten  
 "I have forgotten what you told me yesterday".
- b. \*Asem a wokae pro nnera no, me were afi.  
 Matter Rel. you:said it yesterday the I have forgotten  
 "I have forgotten what you told me yesterday".
- c. Asem a wokae pro no, me were afi.  
 Matter Rel. you:said it the I have forgotten  
 "I have forgotten what you said".

Matters may not be as simple and clear cut as I have presented it here. In a study to be reported in Part II of this thesis (chapter 5, test 2), one person out of the 12 adult control group used the null pronominal before a temporal adjunct in two out of

three tokens with inanimate reference and wavered in the case of the last one. In this one instance he suggested that both the null and overt object pronoun are possible. This seems to suggest that speakers may vary as to whether an inanimate object pronoun must be always phonetically present or not when it is followed by an adjunct. This variation may be either dialectal or idiosyncratic; or it may depend on the type of verb or adjunct used.

Boadi (1971: 36, fn. 5), for example, notes that some verbs which denote a change from "one physical state to another" (what he calls 'middle verbs') require that their 3rd person inanimate pronoun object be overtly marked even at sentence/clause-final position. This creates a situation where, contrary to what has been stated before, a sentence-final overt 3rd person pronoun may be interpreted as having inanimate reference as in (52a). (52b), without an overt pronoun can only be interpreted as an intransitive use of the verb with the subject being the entity that is undergoing the change of state described by the verb:

- (52) a.    ɔ-    kyeaa       no.  
           3sg: bent/tilted    it  
           "S/he bent/tilted it".
- b.    ɔ-    kyeae.  
           3sg: bent/tilted  
           "S/he got bent" (not, "S/he bent/tilted it").

Compare the sentences in (52) with those in (53) where the overt pronoun has animate reference and the absence of an overt pronoun may be interpreted as indicating an object *pro* "it/them" (= inanimate):

(53) a. **Me** huu no.  
I saw 3sg  
"I saw him/her" (not, "I saw it")

b. **Me** hui.  
I: saw *pro*  
"I saw it" (not, "I saw him/her").

The difference in the interpretation of the pronouns in (52) and (53) has to do with the fact that the former contains a 'middle verb' while the latter does not. Boadi lists verbs like: **bue** "open", **hye** "burn", **nane** "melt", **pira** "hurt", **yera** "lose", **muni** "roll", etc., among those he calls 'middle verbs' and which create this effect.

Further investigation is needed to give a precise account of the phenomenon described here. That will be the subject of future inquiry.

## Chapter 5

### Wh-Focusing in Akan: A non-movement account

#### 5.1. Introduction

In the preceding chapters, I have mentioned the two structures available for wh-questions in Akan namely, those with the wh-word/phrase in situ and those with sentence-initial wh-words. The two cases are exemplified in (1):

- (1) a. Wohuu hena?  
You:saw who  
"You saw who?"
- b. Hena na wohuu no no?  
Who Foc. you:saw 3sg CD  
"Whom you saw him/her?" / "Who did you see?"

I have made the claim that Akan is an in-situ wh-language and that the structures typified by (1b) are not the result of syntactic wh-movement. They are the result of the focus-marking process in the language which generates a constituent in [Spec, CP] and generates a resumptive pronoun (overt or null) in a corresponding argument position within the clause that is predicated of it. This non-movement analysis of sentence type (1b) follows from a combination of factors, namely: i) the *Clausal Typing Hypothesis*, ii) the presence of in-situ wh-questions, iii) the presence of resumptive pronouns, and iv) the possibility of linking the wh-word to positions inside syntactic islands (island violations).

In this chapter, I argue for a non-movement analysis of sentences with their wh-elements in clause-peripheral position. I begin with a brief discussion of focus

and the focus marking process in Akan which is crucial for the analysis presented here.

## **5.2. Focus Marking: A Definition**

The term 'focus' has received several interpretations in the linguistic literature. Though some of these definitions emanate from different grammatical frameworks, there appears to be a common strand in them. Ameka (1992, see also the references cited there) gives a synthesis of the different definitions of the focus phenomenon as involving the signalling of various kinds of information, namely, new information (in the terms of 'this is news'), important information, and/or contrastive information.

In the generative grammar framework, the term has been defined slightly differently. Chomsky (1971, cited in Schachter (1973)), uses the notions 'focus' and 'presupposition' in an attempt to derive a semantic analysis of English cleft sentences (structures that are similar in nature to focused sentences in Akan). The presupposition refers to the proposition which has to be true in order for the sentence to have a truth value, while the focus is the complement of the presupposition (Schachter, 1973: 40-44). Schachter (ibid.) uses the notion 'foregrounding' to capture these terms. In his terminology, the new information is 'foregrounded' or is said to be in the 'foreground' while the presupposed information is 'backgrounded' or is in the 'background'. Aissen (1992: 50) characterizes a focus construction as consisting of two key parts: a 'presupposition' and an 'assertion'. The presupposition of a focus construction can be generated by translating the focused element by a variable and it (the presupposition) persists under negation. The assertion of the focus construction is that "the focused constituent denotes an entity which satisfies the variable of the presupposition, and

further that that entity is the only one in the current discourse which satisfies it” (ibid.)<sup>1</sup>.

From the various characterizations in the works cited above, we can get a working definition of a focused constituent as one that is in some way given prominence in the sentence and/or is contrasted with the other members of the set of things/entities to which it belongs and which do not satisfy the presupposition. Presupposition, I will define pragmatically as the condition(s) that must be met by a context in order for a sentence to be felicitous in that context (Allwood, Anderson, and Dahl, 1977: 153). The contrastive reading that a focused constituent carries as opposed to other elements of its kind in a given sentence is evident in the discussion of focus assignment in several languages, for example, Mayan (Aissen, op. cit.); Ewe and Akan (Ameka, 1992; Boadi, 1974; Schachter, op. cit.); Hungarian (Lindhout-Lengyel, 1991); Igbo (Robinson, 1974); Edo (Omoruyi, 1989); English (Culicover and Rochemont, 1983); and Standard Arabic (Ouhalla, 1994).

### **5.2.1 Focus Marking in Akan<sup>2</sup>**

Languages differ in the way Focus is achieved within a sentence. Some languages, for example English, signal focus either prosodically by means of stress or by word order variation and special constructions such as clefts. Others do so morphologically by means of special morphemes or particles (i.e., focus markers). Akan, Ewe, Edo, and Igbo (all Kwa languages spoken in West Africa), belong to the second group of languages. These languages may also use clefts and other

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<sup>1</sup>Paul Hirschbühler (personal communication) points out that though this distinction between presupposition and assertion is true, there may be problems with it. I will not discuss these issues here.

<sup>2</sup> Boadi (1974) is by far the most comprehensive syntactico-semantic account of Focus Marking in Akan that I know of and my discussion of the topic in this and other works has been influenced by it.

structures to achieve focus. What sets the English type languages apart from the Akan type is that the former are stress-timed and as such emphatic/contrastive stress can be used to signal focus or contrast while the latter are syllable-timed and tone languages which do not have a productive use of emphatic stress and/or tone to obtain focus or contrast (Omoruyi, *ibid.*). They therefore have to use certain morphemes or particles to do the job.

In Akan two particles, **na** and **de(ɛ)**, are used to assign Focus. **Na**, however, is the only one that is used in *wh*-questions. As already mentioned in chapter 2, any constituent occurring in any syntactic position in an Akan sentence can be focused by being base-generated to the left of the IP and a focus marker (FM) attached to it before the complement clause. An overt pronoun is also base-generated in situ if the focused NP is animate, and a null *pro*(noun) in the case of inanimate NPs. For example:

(2) a. **Me** huu ɔbaa no.  
 I saw woman the  
 "I saw the woman."

b. ɔbaa no **na** **me** huu no.  
 Woman the Foc I saw her  
 "The woman I saw (her)".

(3) a. **Me** huu adaka no.  
 I saw box the  
 "I saw the box."

- b. Adaka no na me hui pro.  
 Box the Foc. I saw it  
 "The box I saw it".

Semantically there is a difference between the unfocused constructions and their focused counterparts and this follows from the characterization of focus discussed in section 5.2. The (a) sentences are just plain statement of certain facts while the (b) examples go beyond a plain statement of factual information. For example, (2b) presupposes that the speaker saw someone and the focused constituent satisfies this presupposition. In other words, by making the statement in (2b), the speaker is asserting that: *The woman and only that woman was the one I saw*. Essentially, the referent of the NP *the woman* is being contrasted with all the members of the set of people/persons that the speaker could have seen. The whole sentence can be paraphrased as: *I, the speaker, saw someone and the someone I saw is the woman (and no one else)*. The contrastive nature of a focused element is clearly borne out by this paraphrase<sup>3</sup>.

This presupposition persists under negation as in (4), the negative version of (2b). The sentence implies that the speaker saw someone or some people but the woman in question was not one of them:

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<sup>3</sup>Just like its English paraphrase, the focused sentence in (2b) can be continued with a negative clause as in (i,b). The contrastive reading is quite clear in this example. This type of construction is not available for the neutral (unfocused) sentence as in (i,a):

- (i) a. \*Me huu əbaa no, ennye Kofi.  
 I saw woman the not K.  
 "I saw tthe woman, not Kofi".
- b. əbaa no na me huu no, ennye Kofi.  
 Woman the Foc. I saw her not K.  
 "It was the woman that I saw, not Kofi"

- (4)           ɔbaa   no **na** me anhu   no.  
 Woman the Foc. I   not: see her  
 “The woman I didn’t see (her)”.

### 5.2.2 Wh-Words and Focus

The interaction of wh-words and focus has been extensively discussed in the linguistic literature. Some writers such as Gunter (1966); Horvath (1979); and Rochemont (1978), cited in Culicover and Rochemont (1983), have all suggested that by their nature, wh-words function naturally as the foci of the sentences in which they occur. Culicover and Rochemont (op. cit.), however, give examples of sentences in English in which only the wh-word is allowed a focused interpretation yet they do not receive primary stress (which is associated with focus/contrast). They also cite examples in which the wh-word is "focused though not primary-stressed, and the stressed words not focused". Erteschik-Shir (1986) argues that wh-words are not necessarily the focus of questions, except in *echo*-questions. I will not dwell on a discussion of these issues. They are only mentioned here to draw attention to the problems associated with an attempt to draw a correlation between wh-words and focus. This debate notwithstanding, I will assume that the wh-word in pre-IP position is focused in Akan.

The nice distinction made between unfocused and focused declarative constructions as seen in the discussion of (2a) and (2b) appears to crumble when it comes to focused and unfocused wh- questions. Other native speakers of Akan I have consulted judge declarative sentences involving the **na** focus marker as confirming the idea of contrast given here and in Boadi (1974) about focused elements in declaratives. A problem arises when one tries to extend this kind of interpretation to focused wh-words. While some people are ready to accept the semantic distinction between focused and unfocused declaratives, they find it

difficult to accept a semantic distinction between the paired sentences in (1), repeated as (5) for convenience:

- (5) a. Wohuu hena?  
You:saw who  
"You saw who?"
- b. Hena na wohuu no (no)?  
Who Foc. you:saw 3sg CD  
"**Who** did you see?"

It is difficult to tease apart the semantic difference(s) between (5a) and (5b) since both are performing the function of asking for information (i.e., the identity of the person that was seen by the hearer). Some speakers believe that both sentences have the same semantic import. Both (5a) and (5b) presuppose that both the speaker and the hearer are aware of the fact that the hearer saw someone. In uttering (5a) the speaker appears not to be laying emphasis on the wh-word the way s/he does in (5b). In this sentence, the questioner appears to be saying: *I insist on your telling me who you saw*. That is, the speaker is drawing attention to the question word by using the structure in (5b) instead of (5a).

The utterances in (6) may be used as answers to the questions posed in (5):

- (6) a. Adwoa.
- b. MehUU Adwoa.  
I:saw A.  
"I saw Adwoa".

- c. Adwoa a.  
 "Adwoa it is."
- d. Adwoa na me huu no.  
 A. Foc. I saw her  
 "Adwoa I saw her"/ "It was Adwoa that I saw."

It seems to me that while all the responses in (6) can be used felicitously as answers to the focused (5b), only the first two can be used for the unfocused (5a). The short answer in (6c) contains the particle *a* which Boadi (1974) identifies as a reflex of the *na* focus marker. (6d) is a focused version of (6b). The focused structures appear to be inappropriate as responses to the unfocused question but the speaker seems to have a choice of using any of the answers in (6) in response to the focused question.

The suggestion that *wh*-words function as the focus of the sentences in which they occur seems to find support in Akan contra Erteschik-Shir's claim. It seems the inherently focal nature of *wh*-words and phrases combine with the prominent/emphatic nature of the subject position to account for why the focus construction is always used in most dialects of Akan (e.g. Akuapem, Akyem, Asante, and Agona) when the subject of a sentence is questioned. For example, while the subject of a declarative sentence may be focused or unfocused as in (8) depending on the meaning that is being imparted, when the subject is questioned, the *wh*-word must obligatorily appear with the focus marker attached as in (7a). (7b) is not acceptable to speakers of the dialects listed above. It appears that these dialects regard the *wh*-word as inherently [+Focus] and the fact that it occurs in

subject position (or sentence/clause-initial position) makes it obligatory for it to occur with the focus morpheme.

- (7) a. Hena na odii aduan no?  
Who Foc 3sg:ate food the  
"Who s/he ate the food? " / "Who ate the food?"
- b. \*Hena dii aduan no?  
Who ate food the  
"Who ate the food? "
- (8) a. Kodwo na odii aduan no.  
K. Foc. he:ate food the.  
"Kodwo he ate the food"/  
"It was Kodwo who ate the food".
- b. Kodwo dii aduan no.  
K. ate food the  
"Kodwo ate the food".

As noted in chapter 3, the Fante dialect allows both of the structures in (7) as demonstrated by the examples in (9). Note that the wh-word is in the canonical subject position in (9b). There is no focus marker in it neither is there a resumptive pronoun before the verb. This means that the wh-word is not focused.

- (9) a. Woana na odzii edziban no?  
 Who Foc. 3sg:ate food the?  
 "Who s/he ate the food?"/ "Who was it that ate the food?"
- b. Woana dzii edziban no?  
 Who ate food the?  
 "Who ate the food?"

The existence of both the focused and unfocused wh-word in (9) suggests that Fante is innovative in allowing both of the two structures in its grammar while the other dialects do not. In this regard, it is treating wh-words on par with ordinary NPs and other constituents in focusing or not focusing them<sup>4</sup>.

### 5.3. An Analysis

From the discussion in the preceding sections of this chapter and following from the discussion of functional projections in the current linguistic literature, e.g. Pollock (1989); Chomsky (1991; 1992); and Jonas and Bobaljik (1993), it is tempting to postulate that the focus maker in Akan projects a focus phrase (FP) which hosts a focused constituent in its Spec. This position has been argued for in analyses of focus in Hungarian by Lindhout-Lengyel (1991), Tuki by Biloa (n.d.), Akan, Saah (1992) and Standard Arabic by Ouhalla (1994). Attractive as this analysis is, I will reverse my decision of postulating an FP in Akan and go for one that sees the focus marker as one of the complementizers in the language. On this

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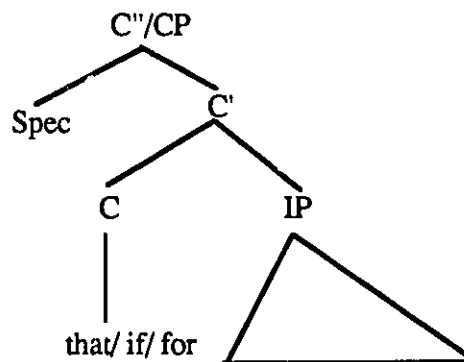
<sup>4</sup> Kofi Dadzie (p.c.) informs me that it would be inappropriate/or rude for a child or a younger person to use (7b) when talking to an adult. He says that this will normally be said with an angry tone and in a situation where someone had eaten the food against explicit instructions not to do so.

analysis, focused elements will be generated in [Spec, CP]. The analysis has the advantage of avoiding the postulation of a plethora of functional projections in Akan all of which perform the function of complementizers in the language. To understand the motivation for this decision I will digress a little and discuss complementizers and the composition of COMP in Akan in the next sections.

### 5.3.1 The Composition of COMP in Akan

Complementizers form a closed set of elements/words in languages and their main function is to introduce subordinate clauses. These words, like the English *that*, *if*, *whether*, and *for* belong to the lexical category complementizer ( $C^0$  or Comp). The complementizer or  $C^0$ , projects a Complement phrase ( $CP/C''$ ) and it takes IP (= sentence) as its complement (see Chomsky, 1986; Haegeman, 1991; Lasnik & Saito, 1992, etc.) in line with the current X'- theory. Comp has an associated specifier position which hosts moved constituents such as wh-phrases in a language like English. A typical CP in English has the representation in (10) in which the complementizers *that*, *if*, and *for* occur under the  $C^0$  node with IP as its sister:

(10)



The items analyzed as complementizers in Akan will be assumed to be occurring in this position.

Though the category complementizer has been established among the items that are labelled as functional categories, they appear not to be a unified category in terms of their function and syntax. Bhat and Yoon (1991: 43-44) state that in line with crosslinguistic uniformity, Comp should be dichotomized into a category that indicates clause-type (*Mood*) and subordinate clauses (*Subordinators*). They claim that in some languages, English, for example, Comp conflates the two distinct categories of information while others like Korean, Japanese and Kashmiri separate these functions and assign them to different lexemes. Akan has a number of words/lexemes which may be analyzed as complementizers because they have an IP or a sentence as their complement. These words/particles, though appearing in the same structural position, perform different functions in the language. Some function as indicators of mood or clause type, e.g. declarative, question, etc., while others are subordinators. The different complementizers are discussed in turn in the following sections.

### 5.3.2 The Focus Markers/Complementizers *na* and *de(ɛ)*

These are used to focus any element in a sentence. Several examples have been given with the *na* focus marker in this study already and I will not repeat them here. Instead I give the examples in (11) involving the *na* and *de(ɛ)* for comparison:

- (11) a. Ama na odii akutu no.  
A. Foc. she:ate orange(s) the  
"Ama ate the orange(s)." (not Kofi or Efua).

- b. Ama **de(ε)** odii akutu no.  
 A. Foc. she:ate orange(s) the  
 "(As for) Ama she ate the orange(s)"<sup>5</sup>

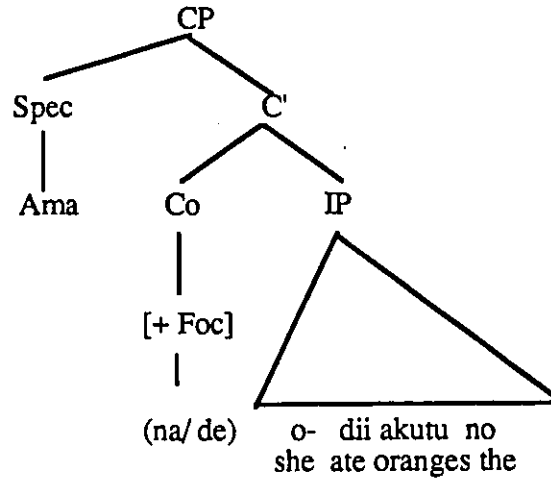
Both sentences have the same presupposition which is: *Someone ate the orange(s)* . They differ however in the assertions they make. In (11a) the speaker is asserting that: *It was Ama who ate an orange(s), not Kofi, Efua or anyone else. S/he is actually contrasting the NP Ama with other possible candidates who might have had the chance or opportunity to eat the orange(s) but did not do so. S/he is quite emphatic about this new information that s/he is imparting. (11b) on the other hand does not convey this kind of meaning. While the presupposition remains the same as in (11a), the presence of the **de(ε)** focus marker forces a different reading of the sentence. The speaker implies that Ama ate the orange(s) but s/he is not sticking his/her neck out to say that Ama was the only one who ate it. Others may or may not have participated in the action. This kind of utterance leaves room for the inclusion of other participants in the action. The sentence can be paraphrased as: *I, the speaker, know it for a fact that Ama ate the orange(s) (but I am not sure / I am not telling whether others did so too)*. It is on the basis of these different semantic readings of the structures involving the **na** and **de(ε)** focus markers/complementizers that Boadi (1974) calls them the 'exclusive' and the 'inclusive' focus markers respectively<sup>6</sup>. The two sentences in (11) may be represented as in (12):*

<sup>5</sup> I use the expression "As for ..." in an attempt to capture the semantic distinction between the **na** and **de(ε)** focus markers.

<sup>6</sup> The 'exclusive' and 'inclusive' meanings of **na** and **de(ε)** can be seen in the following expression from a popular Akan song:

- (i) Dɔ na medɔ wo, nye se m'abɔ dam.  
 Love Foc. I:Love you, not:is that I:am crazy  
 "Love I love you, I'm not crazy." / "It is just that love you, I'm not crazy "

(12)



Syntactically, the two focus markers behave differently in the choice of elements that may occur in their specifier position. While the **na** focus marker can take any constituent, including wh-words/phrases, **de(ɛ)** cannot co-occur with wh-words/phrases in their specifier position. This restriction accounts for the ungrammaticality of (13b):

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In the first clause in (i), the verb **də** "to love" is focused and emphasized to contrast it with other verbs that may express the speaker's state of being. This contrast is further strengthened by the second clause which is negative to achieve the desired effect. This kind of usage is not possible with the 'inclusive' focus marker **de(ɛ)**:

- (ii) \* **Də de(ɛ) medə wo, nye se m'abə dam.**  
Love Foc. I:Love you, notis that I:am crazy

- (13) a. Hena na Kofi huu no?  
 Who Foc K. saw 3sg  
 "Who Kofi saw him/her?"/ "Who was it that Kofi saw?"
- b. \*Hena de(ε) Kofi huu no?  
 Who Foc K. saw 3sg  
 "(As for) Who Kofi saw him/her?"/  
 "Who was it that Kofi saw?"

The unacceptability of (13b), I suggest, has its roots in the semantics of the **de(ε)** focus marker. The meaning of 'inclusion' associated with this particle is not compatible with the specific and/or precise nature that the focused question word requires of its answer. Note that if the interlocutor had in mind more than one person, s/he would have used the plural wh-word **hefo/henanom** "who (pl.)" instead of the singular **hena** "who (sg.)".

Based on their syntax and semantics (i.e. selectional restrictions), I will tentatively give the focus markers/morphemes the following characterizations:

- (14) a. **na** = [+ Foc., + Exclusive, ± wh].  
 b. **de(ε)** = [+ Foc., - Exclusive, - wh].

### 5.3.3 The Relative Clause Marker **a**

Relative clauses in Akan are introduced by the relative marker **a**. This particle always occurs after the head noun and before the predicative clause/complement as in (15). The ungrammatical example in (16) shows the relative clause complementizer does not co-occur with a wh-word. In other words,

it does not allow a wh-word in its specifier position. I will therefore give it the feature [- Foc, +Rel.].

- (15) a. Abofra a Kofi huu nó nó ...<sup>7</sup>  
 Child Rel. K. saw 3sg the  
 "The child that Kofi saw (him/her) ..."
- b. Asem nó a wokae nó ...  
 Word/matter the Rel. you:said the  
 "The thing that you said (it)" / "What you said ..."
- (16) \*Hena a wohuu nó nó?  
 Who Rel. you:saw 3sg the

#### 5.3.4 The *se* Complementizer

This complementizer is used to introduce complement clauses as in (17a). It may not be omitted as in (17b) except when there is a pause after the top clause and before the complement IP as in (17c).

- (17) a. Ama kaa *se* Efua ada.  
 A. said that E. Perf:sleep  
 "Ama said that Efua is/was asleep."

---

<sup>7</sup> Akan has several morphemes of the form *no*, which could be interpreted as i) the third person singular object pronoun *him, her, or it*, ii) the equivalent of the definite determiner *the*, or as a kind of 'clausal determiner'. I will discuss the last one in the next section. Each of these items is identified by its syntactic position. The determiner *no* always follows the noun or NP it modifies, the pronoun *no* occurs in the object position of transitive verbs, and clause determiner, occurs after a clause. It is not uncommon to find the pronoun *no* "him/her" occurring with the clause determiner *no* after a transitive verb as in (15a).

- b. \*Ama kaa Efua ada.  
"Ama said that Efua is asleep."
- c. Ama kae, Efua ada.  
A. said, E. Perf:sleep  
"Ama said (it/ that) Efua is/was asleep."

Without the complementizer **se**, (17c) has a slightly different interpretation from (17a). It means that the speaker is affirming that what Ama said is actually true, i.e., Efua is really asleep. Such a sentence will be used in a situation where the speaker had earlier on doubted or questioned the veracity of what Ama said only to find out for him/herself that it was true.

**Se** does not co-occur with any of the focus markers, neither does it take a wh-word in its Spec. The ungrammaticality of (18a) may be attributed to the occurrence of the two complementizers one after the other. The ungrammaticality of (18b), on the other hand, is due to the fact that **se** cannot have a wh-word in its specifier position. It must always be introduced by a verb.

- (18) a. \*Ama na **se** Efua ada.  
A. Foc. that E. Perf:sleep
- b. \*Hena **se** Efua ada.  
Who that E. is:asleep

It is possible for another **se** which I will gloss as "if" to be used at the beginning of a sentence to introduce a conditional clause:

- (19) a. (Sɛ) wohu akutu à tɔ bi ma me.<sup>8</sup>  
 If you:see oranges COMP buy some give me  
 "If you see oranges, buy some for me".
- b. Wokɔ à frɛ Esi ma me.  
 You:go COMP call E. for me  
 "If you go, call Esi for me."

The sentences in (19) are what are traditionally called conditional sentences. The top clause may be introduced by an optional *sɛ* "if". The end of the clause is marked by another particle *à*, similar to the relative clause complementizer except for the tone. While *sɛ* is optional in such structures, *à* is not. The *sɛ* "if" in (19) is tonally different from the other complementizer *sɛ* "that" in examples like (17) and (18). While the *sɛ* in (17) and (18) is said with a high tone [´], the *sɛ* "if" is said with a low tone [˘]<sup>9</sup>. Second, while the complementizer *sɛ* "that" as used in (17a) is obligatory, *sɛ* "if" is optional as indicated in (19). I assume that both the *sɛ* particles and the particle *à* that marks conditional sentences occurs in C<sup>0</sup> in Akan (i.e., they are lexical complementizers).

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<sup>8</sup> Notice that there is a particle *a* after the *if*-clause in (16a) before the complement clause. This is different from the relative clause marker *a*, but it also performs the function of introducing a clause and will be labelled as a complementizer as well. Again what distinguishes the relative complementizer from this 'clausal' complementizer is tone. The relative clause marker *á* has a high tone while the 'clausal' complementizer *à* has a low tone. The relative clause complementizer introduces the IP that is predicated upon the head of the relative clause while the 'clausal' complementizer links two clauses or IPs. The latter can co-occur with the sentence-initial *sɛ* "if" complementizer.

<sup>9</sup> As I have explained elsewhere, due to the inadequacies of my word processor, it is not possible to put the tone marks on the vowels in the IPA Times font. As a consequence of this, tone is generally not be marked in the whole text but may be stated or marked in cases where it is important for the distinction between otherwise identical items.

### 5.3.5 Summary

From the discussion so far, it could be seen that the COMP in Akan, like the COMP position in other languages, is an A' position that hosts a number of complementizers that perform different functions in the language. These complementizers have a bundle of features and elements that must be matched with that of the items that occur in their specifier position through Spec-head agreement *à la* Rizzi. Rizzi (1990, chap. 2) develops a way of accounting for Spec-head agreement in the domain of COMP. He shows that different types of elements occur in the complementizer or C<sup>0</sup> position in different languages and these distinguish between declaratives, relatives and questions. These different complementizer types are characterized in terms of the following feature system:

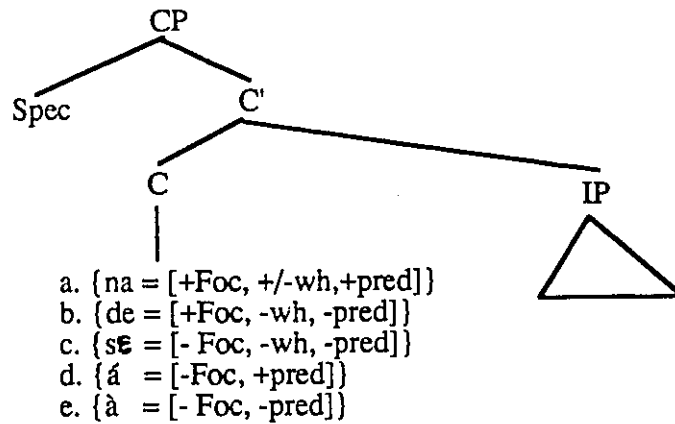
(20) (= Rizzi, 1990, p. 67, ex. 107)

- a.  $\pm wh$
- b.  $\pm \text{pred(icative)}$

According to this system, a [+wh ] complementizer (compulsory in wh-questions), must cooccur with a [+wh ] operator in its Spec at all levels of representation; a [+pred] C<sup>0</sup> (which is a distinctive property of relatives) must head a CP which is predicated of an NP (i.e., the subject of predication); a [-pred] C<sup>0</sup> heads a clause that cannot be predicated. A [-wh ] C<sup>0</sup> cannot co-occur with a [+wh ] specifier, neither can a [-pred] C<sup>0</sup> co-occur with a clause that can be predicated.

This system can be incorporated into the features outlined for Akan complementizers by substituting [ $\pm \text{pred}$ ] for the [ $\pm \text{Rel}$ ] feature as I have done for the relative complementizer to yield the following feature system of complementizers for Akan:

(21)



The feature system in (21) gives rise to the following five cases in Akan:

- (22) a. [+Foc, +wh, -pred]: Hena nà ɔbaa ha?  
Who Foc 3sg:came here  
"Who s/he came here?"
- b. [+Foc, -wh, -pred]: Ama de(ε) ɔbaa ha.  
Ama Foc she:came here  
"(As for) Ama she came here."
- c. [-Foc, -Wh, -pred]: Kofi kaa se Ama baa ha.  
K. said that A. came here  
"Kofi said that Ama came here."
- e. [-Foc, +pred]: Aduan á Ama dii(ε) no ...  
Food Rel. A. ate (it) the  
"The food that Ama ate (it) ..."



belong to the same functional category. In other words, COMP cannot be iterated in the language. The examples in (23) show that there is a prohibition of structures like the one in (24) in Akan:

(24) \*<sub>[CP ... [CP ... ]]</sub>

(24) may be seen as a kind of filter that prohibits COMP iteration in Akan.

#### 5.4 Determiners

Determiners play a crucial role in the description of the structures under discussion in this chapter. There is a close resemblance between the definite determiner **nó** "the" and the 3rd person singular resumptive pronoun **nó** "him/her/it", and the two may sometimes occur contiguous to each other. Because of these facts, I present a brief discussion of determiners in the next section before I proceed with the analysis of focused wh-questions.

Determiners in Akan such as **nó** "the", and **yí** "this", **há** "here", **hɔ** "there", and **bí** "a" follow the nouns or NPs they modify. All of them (except **bí** "a") are deictic in the sense that they have the property of pointing at an object or location: they are also definite and/or specific as they refer to entities whose existence has already been established in the discourse (i.e., are known to both the speaker and the hearer) or which are present at the place/time of discourse. I will concentrate on the definite determiner **nó** in the following discussion because of: i) its occurrence in many of the examples I have given throughout this study, ii) the likelihood of it being confused with the 3rd person singular (resumptive) pronoun **nó** "him/her/it", and iii) the role it plays in influencing the structures I will postulate for relative clauses and focused wh-questions later on in this chapter.

#### 5.4.1 The Determiner *nó*

The determiner *nó* "the" occurs in the following environments:

##### i). After Noun Phrases

(25) a. Mehuu adaka *nó*.

I:saw box the

"I saw the box."

b. Mehuu adaka.

I:saw box

"I saw a box."

(26) a. Mbofra *nó* wɔ dan *nó* mu.

Children the be room the in

"The children are in the room."

b. Mbofra wɔ dan *nó* mu.

Children be room the in

"There are children in the room."

The determiner *nó* "the" like the definite determiner in English, makes each of the NPs it modifies specific/definite — one whose existence/identity is known to both the speaker and the hearer because it has been established earlier on in the discourse. (25a) differs minimally in interpretation from (25b) because of the presence of *nó* in the former and its absence in the latter. (25a) can be interpreted as: *I saw the box (the one you and I know/have talked about)*. (25b) on the other

hand does not presuppose that the speaker or the hearer knew anything about the box (i.e. the existence/identity has not been established in the discourse prior to the utterance). The sentence will not be a felicitous statement if both the speaker and the hearer had a particular box in mind. It can be paraphrased as: *I saw a box (one whose existence I didn't know of before)*. The same explanation goes for the subject NPs in (26a) and (26b). In (26b), we do not know whether the speaker or the hearer knows the identity of the children in the room but in (26a) the use of *nó* makes it clear that the children are known to the speaker and/or the hearer (e.g. a parent talking to the spouse about their children). It could also mean that the children have already been introduced in the discourse. The sentence can be paraphrased as: *The children (you and I know /have talked about) are in the room (that you and I know /have talked about)*. It must be noted that the determiner *nó* does not inflect for number or gender; the same form is used for both singular and plural nouns as well as animate and inanimate nouns.

**ii). At the End of Relative clauses**

Akan usually marks the end of relative clauses with the determiner *nó* as the following examples show:

- (27) a.   Abofra (*nó*) a   Kofi huu no *nó* aba.  
 Child   the Rel. K.   saw 3sg the has:come  
 "The child that Kofi saw him/her has come."
- b.        \**Abofra nó* a   Kofi huu no \*( $\emptyset$ ) aba.  
 Child   the Rel. K.   saw 3sg    has:come  
 "The child that Kofi saw him/her has come".

- (28) a. Onipa a ɔtoo ndwom nɔ yɛɛ ade.  
 Person Rel. 3sg:sang song the did something  
 "The person/one who sang the song did well".
- b. \*Onipa a ɔtoo ndwom nɔ nɔ yɛɛ ade.  
 Person Rel. 3sg:sang song the the did something  
 "The person/one who sang the song did well"

The relative clause in (27a) has a resumptive pronoun **no** "him/her" after the verb **huu** "saw", the resumptive pronoun in turn is followed by the determiner **nɔ** that marks the end of the relative clause before the VP **aba** "has come". (27b), without the determiner, is unacceptable. In (28a), however, because the relative clause terminates in an NP consisting of a noun plus the definite determiner (i.e., **ndwom no** "the song"), the clause determiner is no longer necessary. If it is added as in (28b) it renders the sentence unacceptable.

The unacceptability of (28b) can be explained if we see the two particles **nɔ nɔ** that follow the noun **ndwom** "song" as one and the same lexical item (i.e., the determiner **nɔ** "the"). Since the relative clause structure is one complex NP, it is not surprising that it is modified by a determiner (i.e., it is a DP). While not all languages do it, this phenomenon of modifying relative clauses with determiners has been reported for Haitian and Fon (a Kwa language spoken in Benin, see Lefebvre, 1992).

When an Akan relative clause structure terminates in an NP with the structure [N+ **nɔ**], the second determiner that modifies the whole relative clause structure deletes to avoid the superfluity that characterizes the sentence in (28b). In other words, there is a rule like (29) in Akan which simply deletes the second of the two determiners that occur at the end of the relative clause to prevent the generation

of sentences like (28b)<sup>10</sup>. It may be seen as a kind of filter that applies to delete the second of two contiguous determiners. Note that the determiner may optionally modify the noun head of the relative clause as shown in (27a) but it is obligatory at the end of the relative clause.

(29) **Pleonastic Determiner Deletion Rule**

$$[\text{Det } \mathbf{n\acute{o}}] [\text{Det } \mathbf{n\acute{o}}] \Rightarrow 1, \emptyset$$

1            2

Another reason that the last **nó** in structures like (27a) should be analyzed as a determiner is that: i) it is possible to substitute the definite and proximate determiner **yi** "this" for this item depending on whether what is being discussed is proximate in time or space to the speaker or speech situation, and ii) the determiner may show up even after an intransitive verb (indicating that it can not be analyzed as a resumptive pronoun in such a context). (30a) shows that the determiner **yi** "this" may be used optionally to after the head noun and after the relative clause. It occurs in the same position as the determiner **nó** does in (27a) for example, proving that the two (i.e., **yi** and **nó** are of the same lexical category.

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<sup>10</sup> This rule is reminiscent of a rule that operates in French to delete **des** when it occurs immediately after **de** as in:

- |       |  |                                 |
|-------|--|---------------------------------|
| i).   | J'ai    parlé <b>de</b> tes    chevaux | "I have spoken of your horses." |
|       | I: have spoken of your horses          |                                 |
| ii).  | *J'ai    parlé <b>de des</b> chevaux   | "I have spoken of horses."      |
|       | I: have spoken of of the horses        |                                 |
|       | ↓                                      |                                 |
| iii). | J'ai    parlé <b>de</b> ∅    chevaux   | "I have spoken of horses."      |
|       | I have spoken of horses."              |                                 |

I am indebted to Paul Hirschbühler (p.c.) for pointing this out to me and also for the formulation of the rule in (29).

- (30) a. Onipa (yi) a mereka ne ho asem yi ...  
 Person this Rel. I:am speaking 3sg:Poss about matter this  
 "This person I'm talking about him/her... "
- b. \*Onipa (yi) a mereka ne ho asem n6 ...  
 Person this Rel. I:am speaking 3sg:Poss about matter the  
 "This person I'm talking about him/her... "
- c. Onipa a ɔdae no anyane.<sup>11</sup>  
 Person Rel. 3sg:slept the has:woken up  
 "The one/person that slept has woken up".

The ungrammatical (30b) provides an interesting contrast with the grammatical (30a). The two sentences differ minimally with respect to the use of the determiners *yí* and *n6* to mark the head noun and the relative clause respectively in (30b) while the same determiner *n6* is used for both of them in (30a). The ungrammaticality in (30b) is the direct consequence of the incompatibility of the two determiners. The two do not agree in their semantics: *yí* "this" denotes an entity or an event that is proximate in time and/or space to the speech situation; *n6* "the", on the other hand, denotes an entity or an event which is distant in time and/or space to the speech situation. I propose the following compatibility condition on the occurrence of determiners (CCOD) on relative clauses and their heads in Akan:

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<sup>11</sup> In (30c) *n6* shows up after the intransitive verb *dae* "slept" and as such cannot be a pronoun. It is rather a determiner modifying the whole [NP + IP] structure that constitutes a complex NP.

(31) **Compatibility Condition on the Occurrence of Determiners**

If [<sub>DP</sub> [NP N+  $\alpha$ ] [CP [IP ... ] [<sub>D<sup>o</sup></sub>  $\beta$  ]]] is an NP+relative clause structure, and  $\alpha$  and  $\beta$  are determiners, then  $\alpha$  must be the same as  $\beta$ .

(31) ensures that structures like (30b) are not generated in the language. It is an agreement requirement that ensures that the determiner that modifies the noun head of the relative clause agrees in  $\phi$ -features with the determiner that modifies the relative clause predicated on it. In making this claim, I am following Lefebvre's (1992: 140) proposal that there is a feature [ $\alpha$  deictic] (expressed by determiners) which must be added to the list of  $\phi$ -features (e.g., person, number, gender and Case).

iii). **At the End of Focused Wh-questions**

The determiner *nó* may optionally occur at the end of focused wh-questions:

(32) a. Hena na Esi huu no (*nó*)?

Who Foc. E. saw 3sg CD

"Who Esi saw (him/her)?" / "Who was it that Esi saw?"

b. Asem ben na woka kyereɛ Kwame (*nó*) ?

Matter what Foc. you:said show K. CD

"What you told it to Kwame?" / "What was it that you told Kwame?"

The determiner **nó** may be optionally used at the end of focused wh-questions as indicated by optional bracketing in (32). Some speakers differ in their insistence on the presence or absence of **nó** at the end of such questions. As I have stated in chapter 4, in a sequence of two **no**'s occurring at the end of a sentence such as in (32a), the first **no** is always a (resumptive) pronoun and the second one, the determiner. The resumptive pronoun always occurs immediately after the transitive verb and precedes the clause determiner **no**. It can also be inflected for number to agree with its antecedent. The determiner **no**, on the other hand, does not inflect for number and it is always present whether the verb is transitive or intransitive.

**iv). The End of Clauses Other Than Relatives**

The determiner **nó** may occur at the end of a clause before a second one as in (33a). In this kind of usage, it functions like the comma intonation that is used to mark the end of clauses in languages like English.

- (33) a. **Mekæ nó ná ɔredidi.**  
 I:went CD Cons. 3sg:was eating  
 "When I went (there), s/he was eating."
- b. \***Mekæ ná ɔredidi.**  
 I:when Cons. 3sg:was eating
- (34) a. **ɔreko nó ná ɔresu.**  
 3sg:was going CD Cons. 3sg:was crying  
 "While s/he was going s/he was crying."
- b. \***ɔreko ná ɔresu.**  
 3sg:was going Cons. 3sg:was crying

Without the clause determiner to mark the end of the first clause, the sentence will be ungrammatical as in (33b) and (34b). In (33), the verb in the first clause is in the past and the one in the second clause is in the progressive aspect. The sentence describes two events, one in the past followed by another that is still going on. In (34), both verbs have the progressive aspect and **no** is used to mark the end of the first clause before the second clause.

The use of **nó** in the examples (32) - (34) is reminiscent of the use of the determiners **an** and **ɔ** in Haitian and Fon ( as discussed in Lefebvre, op. cit.). Lefebvre indicates that these "clausal determiners" are used to "express event deixis" (p. 140) and that they are surface manifestations of agreement within AgrSP and AgrOP in the two languages. The presence of the determiner is assumed to indicate old or known information (see Lefebvre, op. cit. and the references cited). This seems to be the case in examples (32) - (34). In (32a) for example, there is a presupposition (i.e., old or known information) that *Esi saw someone* in the complement IP which is marked by the determiner **nó**. The old information in (33a) for instance is contained in the top clause **Mekɔe nò** "When I went ..." and this is the part of the sentence that is marked by the event/clause determiner. A full discussion of these facts will take us far off tangent so I will leave it as it is for future discussion. I will, however, adopt the notion of clausal determiner (CD) to distinguish the use of **nó** as a determiner of events as in (iii) and (iv) as opposed to the nominal use of the determiner with NPs and relative clauses as in (i) and (ii). The two are essentially one and the same determiner, I am making the distinction solely on the basis of the kind of elements that they modify. I will, therefore, gloss the determiner as "the" or CD depending on whether it modifies a noun phrase or it occurs at the end of a clause/CP (such a question).

## 5.5 The Structure of Relative Clauses

The discussion of COMP and determiners in the preceding sections provide a way of characterizing relative clauses in Akan and by extension, focused wh-questions as well. Consider the bracketed relative clause in (35) which is a repetition of (27a):

- (35) a. [Abofra (nó) a Kofi huu no nó] aba.  
Child the Rel. K. saw 3sg the has: come  
"The child that Kofi saw him/her has come"
- b. [Abofra a ɔkɔe nó] aba.  
Child Rel. 3sg:went the has:come  
"The child who left has come back/returned."

The clause which is predicated on the head noun contains an in-situ resumptive pronoun. The structure in (35a) is similar to the English sentence in (36a); it has a resumptive pronoun in the complement clause which is related to the relativized noun:

- (36) a. The man who<sub>i</sub> John saw him<sub>i</sub>.  
(= Haegeman, 1990: 372, ex. 74)
- b. The people who<sub>i</sub> I believed that they<sub>i</sub> should be taken into consideration are here.  
(Paul Hirschbühler, p.c.)

- c. This is the girl that Peter said that John thinks that yesterday  
his mother had given some cakes to ?t/her.

(Erteschik-Shir, 1992: 89, ex. 4)

The example in (36a) with the resumptive pronoun is marginal in English, and as Paul Hirschbühler (p.c.) and Erteschik-Shir (1992) indicate, such structures only get better when there are several clauses intervening between the antecedent and the resumptive pronoun as in (36b, c). In Akan, distance does not play a role in the acceptability or non-acceptability of resumptive pronoun structures. In fact, the Akan sentences in (35) will be ungrammatical without the resumptive pronoun. The English structures in (36a, b, c) are analyzed as not involving *wh*-movement because the resumptive pronoun occupies its base position. The relative pronoun is therefore seen as having been base-generated in [Spec, CP] (Haegeman, 1991: 372-373). This is opposed to (37) in which there is a trace in object position that is coindexed with the head of the relative clause and therefore is analyzed as resulting from *wh*-movement:

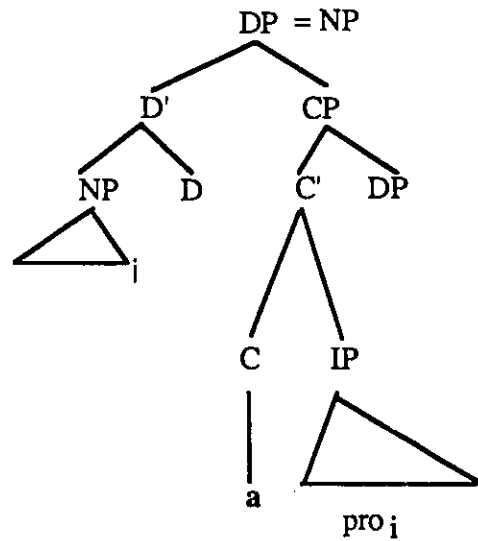
- (37) The man *who*<sub>i</sub> John saw *t*<sub>i</sub>.

The similarity between the Akan example in (35) and the English example in (35a) calls for similar treatment of the structures — they both do not involve movement.

Following the discussion of determiners (nominal and clausal) in section 5.3.5, I propose the structure in (38) as the structure of relative clauses in Akan. This analysis utilizes the notion of determiner phrase (DP) postulated by Abney

(1987) and others after him, such as Tang (1990). Such a structure, according to Tang captures the similarities between sentences and noun phrases<sup>12</sup>.

(38)

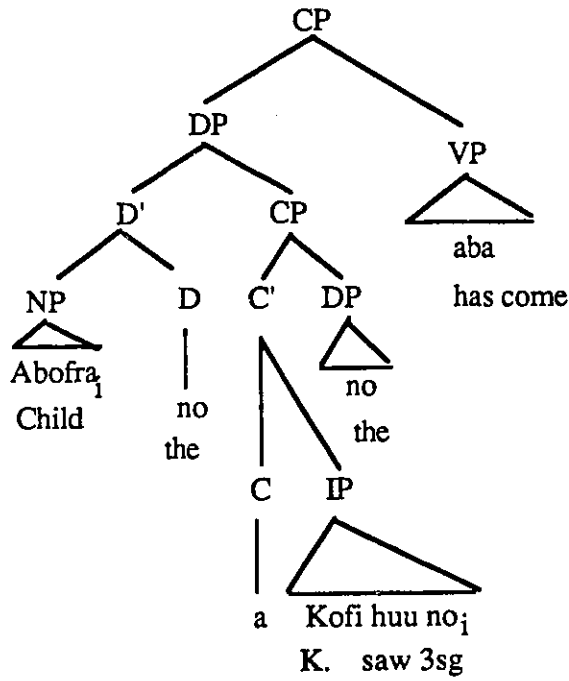


Utilizing the structure of the relative clause in (38), we will have (39a, b) as the representations of the sentence in (35a):

---

<sup>12</sup> I owe Paul Hirschbühler and Helen Goodluck (p.c.) for the idea to adopt the DP analysis to relative clauses and focused wh-questions as well as for the tree representations in (38).

(39) a.



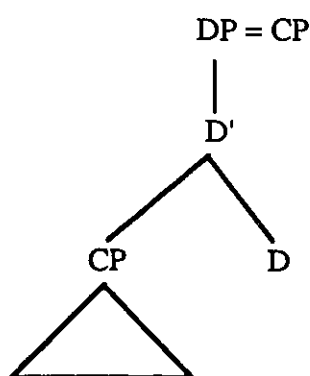
b. [CP [DP [D' Abofra<sub>i</sub> no] [C' á [IP Kofi huu no<sub>i</sub>] [DP no]]]  
[VP aba]]

Because I assume that these structures are not formed by movement, I find no motivation for positing an empty operator in the specifier position of the COMP nor the rule of complementizer contraction as it is done for English. I am claiming that the head noun of the relative clause is base-generated in [Spec, CP] and a resumptive pronoun is also base-generated in situ in the predicated sentence. The resumptive pronoun is antecedent-governed by head noun to which it is co-indexed. The resumptive pronouns are like pronouns in any open sentence they can, however, be linked to an antecedent NP in an A'-position.

## 5.6 The Structure of Focused Wh-Questions

The presence of the clausal determiner in focused wh-questions argues for a DP analysis of such sentences in line with what has been outlined above for relative clauses. I therefore propose the structure in (40) for focused wh-questions:

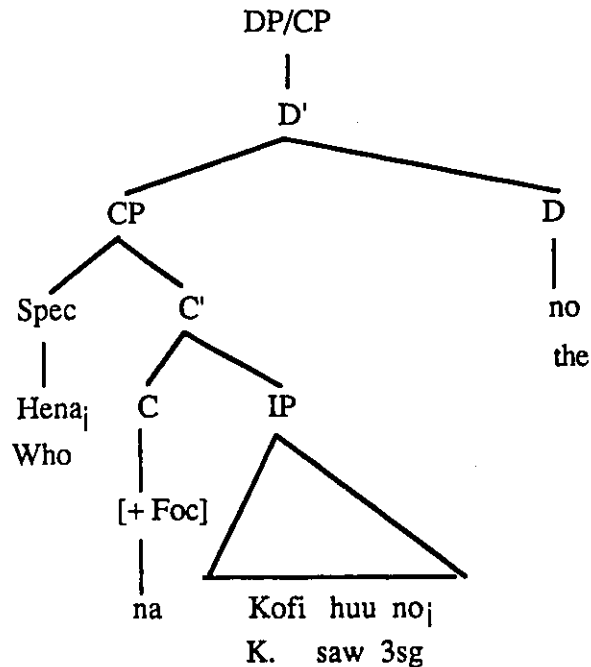
(40)



I assume that the focused wh-word is base-generated in the specifier position in CP and that a resumptive is pronoun also base-generated in situ in the complement IP. This means that given the question in (41a) will have the representations in (41b, c):

- (41) a. Hena; na Kofi huu no; no?  
Who Foc K. saw 3sg CD  
"Who did Kofi see him/her?"

b.



c. [DP [CP Hena<sub>i</sub> [C' na [IP Kofi huu no<sub>i</sub>]] [D<sup>0</sup> no]]]

The wh-word is base-generated in [Spec, CP] from where it antecedent-governs the base-generated in-situ resumptive pronoun<sup>13</sup>.

## 5.7 Discussion

The existence of sentences such as (41) is crucial for the non-movement analysis of sentences with focused wh-phrases. As I mentioned in chapter 4, the direct object position is one place where wh-movement can be launched without leaving an offending trace. Such a position is L-marked and/or governed by the

<sup>13</sup> Marisa Rivero (p.c.) suggests that an alternative analysis might be that CP is in Spec-DP and that the last D in (41b, c) is then an intransitive determiner. This, she indicates, would be reminiscent of the analysis of clitic doubling in which the double is sometimes considered a Spec and sometimes a complement.

verb thus extraction from there will not violate the ECP or Subjacency in a *Barriers* (Chomsky, 1986) theory. The presence of a resumptive pronoun in the Akan example in (41) is therefore unexpected. Since no grammatical principle is violated by moving the wh-word from the direct object position to [Spec, CP], the resumptive pronoun is not needed to cover up or repair the trace of an illegal movement. It is logical, therefore, to assume contra Boadi (1990) that no movement has taken place in such structures. There is no theory-internal motivation to argue that the wh-word is moved while at the same time postulating that the properly governed trace is spelt out as a resumptive pronoun. It is plausible, therefore, to assume that such structures do not involve movement and that Akan belongs to the group of languages like Chinese and Japanese that do not have syntactic wh-movement.

There is evidence from other West African languages to support the non-movement analysis postulated for Akan. Akan differs from other West African languages in consistently having both subject and object resumptive pronouns in the constructions under discussion. Vata, a Kru language spoken in Cote d'Ivoire/ Ivory Coast, exhibits a subject-object asymmetry in both main and subordinate clauses (Koopman, 1984: 37). When a subject is wh-moved, a resumptive must appear in subject position as in (42a) but a resumptive pronoun is not possible in non-subject positions as in (42b). The impossibility of gaps in subject position is attributed to the ECP. According to Koopman (*ibid.*), "the trace in subject position is not properly governed even if it is coindexed with an adjacent wh-phrase".

(42) Vata (= Koopman, 1984: 37, ex.49, her glosses)

a.    àlÓ    \*(Ò)    le    saká    la  
       who    he-RE eat    rice    WH

"Who is eating rice?"

- b. yi Kòfí le (\*mí) la  
 what Kofi eat (\*it-R) WH  
 "What is Kofi eating?"

Akan does not exhibit this kind of subject-object asymmetry.

Yoruba, (another Kwa language spoken in Nigeria) also exhibits the subject-object asymmetry with regards to the use of resumptive pronouns when these positions are extracted. This can be seen in the following paradigm of focused constructions in the language. When the subject or verb is focused ( a process that is in some ways similar to what has been described for Akan in section 5.2.1), a resumptive pronoun or a copy of the verb appear in situ as in (43b) and (43c) respectively, but in the case of the direct and indirect objects, we find a trace as in (43d) and (43e).

(43) Yoruba (Awoyale, 1985: 75-76. ex. 1. his glosses)

- a. Baba ra bàtà fún Òjó ní ilé.  
 Father buy shoes give/for Ojo at home  
 "Father bought shoes for Ojo at home"
- b. Baba ni ó ra bàtà fún Òjó ní ilé.  
 Father Foc. he buy shoes give/for Ojo at home  
 "It is father who bought shoes for Ojo at home."
- c. Rírà ni baba ra bàtà fún Òjó ní ilé.  
 Buying Foc. father buy shoes give/for Ojo at home  
 "It is buying that father did shoes of shoes for Ojo at home."

- d. Bàtà ni baba rà [e] fún Òjó ní ilé.  
 shoes Foc. father buy give/for Ojo at home

"It is shoes<sub>i</sub> that father bought t<sub>j</sub> for Ojo at home."

- e. Òjó ni baba ra bàtà fún [e] nei ilé.  
 Ojo Foc. father buy shoes give/for at home

"It is Ojo<sub>i</sub> that father bought shoes for t<sub>j</sub> at home."

As Awoyale (1985: 76) points out, "movement is more difficult to prove" in the case of (43b, c) but the traces in (43d, e) definitely calls for a movement analysis.

Comparing the Akan equivalents of the Yoruba examples, we find no subject-object asymmetry in the use of resumptive pronouns in such structures. That is, there is no 'gap' or trace in any of the focused positions as shown in (44):

- (44) a. Papa tɔɔ mpaboa maa Kofi.

Father bought shoes gave/for K.

"Father bought shoes for Kofi."

- b. Papa<sub>i</sub> na ɔ<sub>i</sub>-tɔɔ mpaboa maa Kofi.

Father Foc. he: bought shoes gave/for K.

"**Father** he bought shoes for Kofi."

- c. Tɔ̃i na papa tɔ̃i mpaboa maa Kofi.  
Buy Foc. father bought shoes gave/for Kofi  
"Buy father did buy shoes for Kofi"/ "Father bought shoes for Kofi".
- d. Mpaboãi na papa tɔ̃i prõi maa Kofi.  
Shoes Foc. father bought it gave/for K.  
"Shoes father bought them for Kofi."
- e. Kofĩi na papa tɔ̃i mpaboa maa nõi.  
K. Foc. father bought shoes gave/for him  
"Kofi father bought shoes for him."

Restricting the discussion to the object positions in particular, we see Yoruba exhibiting one property of wh-movement — the presence of traces that are coindexed with the focused constituent as in (43d, e). Akan, on the other hand, does not exhibit this effect of movement. It has a resumptive pronoun in each position that is coindexed with the focused constituent appearing in the Spec of a [+Focus] CP.

Hausa (a Chadic language widely spoken in the northern parts of Nigeria and across West Africa), provides further evidence for the point being made here. Tuller (1986) states that movement in this language exhibits such properties as gaps and obedience to the constraints on movement. The language also uses a resumptive pronoun strategy that is both similar to and different from what happens in Akan in certain respects. In Hausa, the use of resumptive pronouns is not allowed with 'focus-fronting' and other wh-structures (subject to dialectal/ideolectal variation) as

in (45a) but it is required with left-dislocations as in (45b), according to Tuller (op. cit. p. 55-56).

(45) Hausa (= Tuller, 1986: 56. ex. 70. her glosses)

- a. Aishaj (cee) MUKKEE tsammaanii Ali yanaa soo e<sub>i</sub> /\*sonta  
 A. Foc. 1pREL think A 3sm like like-her  
 "(It's) Aisha we thought that Ali likes (her)".
- b. Aishaj, MUNAA tsammaani Ali yanaa \*soo e<sub>i</sub>/sonta  
 A. 1p think A. 3sm like / like-her  
 "Aisha, we thought that Ali likes (her)".  
 "A book, they bought it."

In Akan, on the other hand, a gap is not allowed in either structure; there must be a resumptive pronoun in each construction:

- (46) a. Ama<sub>i</sub> na ye-dwene se Kojo pe no<sub>i</sub> / \*pe t<sub>i</sub> .  
 A. Foc. we: think that K. like her/ \*like  
 "Ama, we think Kojo loves her."
- b. Ama<sub>i</sub> , ye-dwene se Kojo pe no<sub>i</sub> / \*pe t<sub>i</sub> .  
 A. we:think that K. likes her/ \*like

Tuller (ibid. p. 56), takes examples like (45a,b) as indicative of the fact that "focus-fronting is the result of wh-movement while left dislocation is the result of base-generation of a topic with a corresponding comment sentence". She, however, cautions that the presence of a gap does not necessarily argue for the presence of a

trace because a gap could also be a null pronoun whose referent is inanimate (nonhuman). This is in some ways similar to what happens in Akan where the presence of gaps is always analyzed as indicating a null pronoun (with inanimate reference, see chapter 4). Tuller points out that it is possible to use the presence of a human direct object gap as a diagnostic of the trace of *Move α* since such a gap could not be an empty pronoun.

In the Hausa subjunctive constructions in (47), the gaps are acceptable even though they have human referents, meaning that the structures involve movement. The Akan counterparts in (48) do not exhibit gaps with animate referents, proving that they do not result from wh-movement. If it were possible to have a gap in such a position that has an animate referent in Akan, it would have been evidence in support of a movement analysis.

(47) Hausa (= Tuller, 1986: 62-63. ex. 81)

a. Aisha tanaa neena mutum ta auraa [e]

A. 3sf look-for man 3sf marry

"Aisha's looking for a man to marry."

b. Inaa neeman mutum in saa Aisha ta auraa [e]

1s looking-for man 1sSUB make A. 3sfSUB marry

"I'm looking for a man to make Aisha marry."

(48) a. Ama rehwehwe õbarima aware no/ \*aware [e].

A. is: looking for man to: marry him / \*marry

"Ama is looking for a man to marry (him)."

- b. Me rehwehwe ɔbarima ama Ama aware no/ \*aware [e].  
 I am:looking for man to:make A. marry him/ \*marry  
 "I'm looking for a man for Ama to marry (him)."

The evidence and analyses from other languages presented above clearly demonstrate that the Akan structures cannot be the result of syntactic wh-movement since they do not show gaps, one of the minimum properties of movement.

It has also been shown that island constraints would be violated in Akan under a view where movement is involved and that it is possible to question inside a temporal or relative clause (i.e., it is possible for a sentence-initial wh-word to be linked to a position inside a temporal or relative clause). For example:

- (49) a. Den<sub>i</sub> na Kofi kyerɛw anasesɛm ansa na ɔredi *pro*<sub>i</sub> no?  
 What Foc. K wrote story before he:ate it CD  
 "What did Kofi read a story before he ate (it)?"
- b. Den<sub>i</sub> na wonim onipa ko a ɔtɔɔe *pro*<sub>i</sub> no?  
 What Foc. you:know person Rel.. 3sg:bought it CD  
 "What do know the person who/that bought (it)?"

(49a) apparently violates the adjunct island constraint and (49b) the complex NP constraint (CNPC) because they allow the linking of a pre-IP wh-word into positions in these structures. While their English equivalents, are ungrammatical even with resumptive pronouns, these sentences are well-formed in Akan<sup>14</sup>.

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<sup>14</sup> Sentences of the type in (2) are attested in a judgement task whose results will be reported in Part II of this study.

The facts outlined above have been examined in detail in the preceding chapters and they go to show that questions with pre-IP wh-words are not the result of syntactic wh-movement in Akan. Such sentences, as well as relative clauses, cleft and topicalized sentences in Akan neither exhibit gaps nor observe island constraints (i.e., Subjacency) which are minimum diagnostics of syntactic wh-movement as identified by Chomsky (1977), and many others after him, such as Soames and Perlmutter (1979), and Chung (1994). A plausible analysis of such constructions in Akan, therefore, is one that sees these structures as involving a base-generation of a constituent in [Spec, CP] and base-generation of a resumptive pronoun in the corresponding argument position within the complement or comment sentence/clause.

### 5.8 A Residual Issue

In chapter 3, I raised the issue of sentences like those in (50) - (52) which exhibit in-situ/ focused asymmetries. While the (a) examples which are wh-in-situ are acceptable and in fact the 'normal' way of posing these questions, the (b) examples are not. What is common about these examples is that they are all routine questions asking about the name or health of a person and about the weather.

- (50) a.   Wɔfrɛ   wo den?  
           They:call you what  
           "What is your name?"
- b.   \*Dɛn na wɔfrɛ   wo?  
           What Foc they:call you

- (51) a.    Wo    ho        te dɛn/sɛn?  
           Your self/health is how  
           "How are you?"
- b.    \*Dɛn/sɛn    na wo ho        te?  
           How            Foc. your self/health is
- (52) a.    Wimu beyɛ dɛn ndɛ?  
           Sky will:be what today  
           "What will the weather be like today?"
- b.    \*Dɛn na wimu beyɛ ndɛ?  
           What Foc sky will:be today

It appears to me that the unacceptability of the (b) examples is pragmatically driven. I do not know of any syntactic reason to account for these examples. It may be recalled that earlier in this chapter, it was established that a focused constituent is given more prominence and is contrasted with other constituents of its kind. It appears to me that the idea of contrast is not particularly strong in these sentences and as such there is no need for the *wh*-words/constituents to be focused.

Take (50a) for example. It is assumed that everybody has a name. That is the presupposition underlying that question. The speaker is just asking to be told this name, therefore, it will be infelicitous for him/her to use the focused question in (50b). That is not to say that (50b) is entirely unacceptable. If, for example, a child comes home from school and tells the parent that s/he had been in a fight because

s/he had been called names by another child, it will be possible for the parent to ask the question in (50b). In this context, the use of the focused question implies a contrast. The question can be paraphrased as: *What name(s) apart from your real name did s/he call you by?* This suggests that (50b) may be used under special circumstances only, not in normal everyday usage.

The sentences in (51) are asking about someone's health and again, it appears that in such questions, no contrasts or emphasis is intended and the focused version in (b) is therefore inappropriate. It is normal practice for Akan speakers to say they are feeling well even when they are lying on their sick beds. Such questions are usually answered as in (53a), not (53b):

- (53) a. Me ho            ye.  
           My self/health is:good  
           "I am fine/well."
- b. ?Me ho            nyε<sup>15</sup>.  
           My self/health not: is:good  
           "I am not fine/well."

The hearer will usually give the answer in (53a) before saying anything about illness if s/he is actually ill. It appears that ill-health is downplayed as a topic for conversation in most cases. Among friends, however, it is possible for (53b) to be uttered as an outrageous though friendly way of prolonging the conversation. I assume therefore that the answer to a question in (51) is always expected to be the

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<sup>15</sup> This sentence is perfectly grammatical in the language and is subject to different interpretations depending on the discourse context. It could mean "I'm broke", "I'm dirty", or "I'm not (properly) dressed", etc. It is when it is used as answer to an inquiry about one's health that it may not be felicitous especially when speaking to one's elder.

same, therefore, a focused question is not necessary. I cannot come up with a scenario where (52b) will be an appropriate question to ask neither can I offer an explanation for why (52b) is ruled out in favour of (52a). But I suspect that it is pragmatically or semantically related. It appears that in asking about the weather, one is asking the listener to predict something, not to contrast an occurrence.

There appears to be a rule of thumb that operates in the language regarding the focusing of *wh*-questions which may be roughly stated as:

- (54) If no emphasis/contrast is implied in the discourse context,  
then do not focus.

(54) blocks the focusing of a constituent (*wh*- or other) if the discourse context does not call for emphasis or contrast. Thus in the case of such 'routine' questions like those asking for a person's name or his/her health, or seeking information about the weather (situations which do not require that one entity or state of affairs be contrasted with another of its kind), a focus construction will be unfelicitous.

## 5.9 Summary

In this chapter, I have advanced arguments to support the position that questions with clause-peripheral *wh*-phrases are not instances of syntactic *Wh*-Movement in Akan. This is the result of the absence of gaps and the lack of Subjacency effects in the language<sup>16</sup>. The analysis can be extended to the analysis of relative clauses, cleft constructions, *Left-Dislocations* and/or *Topicalizations*.

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<sup>16</sup> In chapter 7, I report on the results of a sentence judgement task for Akan and English in which there was a higher degree of acceptability of sentences involving 'extraction' from relative clauses, VP-complements, *wh*-complements, and temporal clauses in Akan than in English.

Given that wh-questions usually ask for new information (Ouhalla, 1994: 61), we can classify wh-questions in Akan into two types on the basis of their semantic/pragmatic function: The first type is made up of all wh-in-situ questions which require that the respondent provide new information and nothing else. Questions about the weather, a person's health or a person's name (exemplified in (50)-(52)) belong to this group. They seek new information only and thus cannot have their wh-elements focused. The second type of questions are those that combine the search for new information with a contrastive reading of this new information. Only this type of question can have the wh-word/phrase focused. This is achieved by the combination of the [+wh] feature of the question-word in Spec, CP and the +[Foc] feature of the *na* focus morpheme which occurs in COMP.

**PART II**

**Studies in Acquisition and Sentence Processing**

1

## Chapter 6

### Acquisition of Resumptive Pronouns, Wh-in-situ, and Wh-Linkage

#### 6.1. Introduction

In Part I of this thesis, I established the fact that Akan has null and overt object pronouns and that there is an animacy restriction on the occurrence of these pronouns. Overt pronouns are usually used for animate entities while null pronouns are used for inanimate entities when they occur in sentence-final position. Before adjuncts, however, the overt form is used for both animate and inanimate referents. The same thing can be said of the resumptive pronouns that occur in relative clauses and wh-questions with focused/ preposed wh-words. I have also shown that the language allows both wh-in -situ questions and questions in which the wh-word is in clause-peripheral position. In this part of thesis, I report on the results of a battery of tests carried out to test Akan-speaking children's knowledge of some of the structures discussed in Part I and the implications of the results for current theories of grammar and sentence processing. Chapter 6 deals mainly with issues of acquisition and chapter 7, sentence processing.

#### 6.2. Experiments

Four experiments comprising two production tests, a question-response task, and a sentence judgement task were conducted to test subjects' knowledge of: i) the distribution of overt and null resumptive pronouns, ii) in-situ wh-questions, and iii) pronominal linkage inside islands. All subjects did the four tests; half of them did in the order: Test 3, 1, 2, 4; and the other half in the order: Test 4, 1, 2, 3.

### **6.2.1 Subjects**

Seventeen Akan-speaking children (with a mean age of 5;4 years) took part in the tests reported here, with 12 adults (mean age of 30) as a control group. The children were selected from the nursery department of the University of Ghana Primary School at Legon. To be eligible for the study, at least one of the parents must be a native speaker of Akan. The adult group had to meet the same eligibility requirement. All the adults, except two who had a secondary/high school education, were either undergraduates or recent graduates of the University of Ghana<sup>1</sup>.

#### **6.2.1.1 Production Test 1**

This was a question and response task designed to test whether children were sensitive to the animate/ inanimate dichotomy in the distribution of overt and null (resumptive) pronouns in the language.

#### **6.2.1.2 Design**

Subjects were asked to watch carefully as the experimenter made some toy animals ( a bear, a monkey, and a lion) perform certain activities with one another or with some objects (a banana, a bottle of orange juice, and a book). They were then asked a question which required them to describe what the particular animal was doing. Subjects were instructed not to repeat the name(s) of the animals or things involved in each action. Before the test was administered, the experimenter made sure that each subject was familiar with the names of all the animals and

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<sup>1</sup> It would have been desirable to test child subjects younger than five to see if awareness of the structures tested set in earlier than that age but logistics and other problems did not permit this to be done. Such a study is, however, planned for the future.

objects. The test followed this pattern: The bear, for example, was made to scratch the lion while the subject watched. Then the experimenter asked:

- (1)   Den   na    Sisi reye   Gyata?<sup>2</sup>  
      What Foc   Bear is:doing to Lion  
      "What is Bear doing to Lion?"

The subject was expected to respond:

- (2)   ɔretiti           no.  
      3sg:is scratching 3sg  
      "S/he is scratching him/ her."

The target is the pronoun which appears in object position after the action verb. This pronoun has to be overt if its referent is an animate noun as in (2) but null in the case of an inanimate referent. It was assumed that if the child subjects made this distinction in the use of pronouns it would be an indication to the fact that they were aware of the animate/ inanimate dichotomy in the use of overt and null pronominals in sentence/ clause-final position (after a transitive verb) in Akan.

There were twelve test items, (a lead activity performed by the animal dolls plus a question about the activity), six with animate objects in the lead sentence and six with inanimate objects. Each subject responded to all twelve items. Order of presentation was randomized individually for each subject with the constraint that no two items with the same object were allowed in succession. No training example

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<sup>2</sup> Throughout the study, I followed the tradition of Akan folk tales in making the names of the animals proper names. Thus instead of "the lion", "the fox", "the hen" and "the elephant", for example, I have used "Lion", "Fox", "Hen" and "Elephant" in the Akan texts.

was given for this test and whenever a subject used a full NP instead of a pronoun, the experimenter encouraged him/her to say the sentence again without mentioning the name of the participants. The prompt took the form: "Nea wokae no ye. Wobetumi aka no okwan foforo bi so a wommɔ mmoa anaa neema no din?" *What you said was good. Could you say it again without mentioning the name of the animals or things?*

The responses for both the first and second attempts are reported here. The complete set of test material is provided in Appendix A.

#### **6.2.1.3 Results**

The results of production Test 1 are presented in Tables 1A, 1B, 1C, and 1D below. Tables 1A and 1B give the child subjects' responses for their first and second attempts and Tables 1C and 1D that of the adults.

TABLE 1A  
 PRODUCTION TEST 1: CHILDREN (n = 17)  
 FIRST ATTEMPT

| <u>Subj. #</u> | <u># of Ss</u> | <u>I ANIMATE STIMULI</u> |                 |                | <u>I INANIMATE STIMULI</u> |                 |                |
|----------------|----------------|--------------------------|-----------------|----------------|----------------------------|-----------------|----------------|
|                |                | <u>*∅ Pron</u>           | <u>Ov. Pron</u> | <u>Full NP</u> | <u>∅ Pron</u>              | <u>*Ov. Pro</u> | <u>Full NP</u> |
| 501            | 12             | 0                        | 5               | 1              | 2                          | 0               | 4              |
| 502            | 12             | 0                        | 5               | 1              | 5                          | 1               | 0              |
| 503            | 12             | 0                        | 6               | 0              | 6                          | 0               | 0              |
| 504            | 12             | 0                        | 0               | 6              | 0                          | 0               | 6              |
| 505            | 12             | 0                        | 6               | 0              | 4                          | 1               | 1              |
| 506            | 12             | 0                        | 5               | 1              | 5                          | 0               | 1              |
| 507            | 12             | 0                        | 0               | 6              | 1                          | 0               | 5              |
| 508            | 12             | 0                        | 5               | 1              | 5                          | 0               | 1              |
| 509            | 12             | 0                        | 5               | 1              | 5                          | 0               | 1              |
| 510            | 10             | 1                        | 1               | 4              | 2                          | 0               | 2              |
| 512            | 12             | 0                        | 5               | 1              | 5                          | 0               | 1              |
| 601            | 12             | 0                        | 6               | 0              | 4                          | 1               | 1              |
| 602            | 12             | 0                        | 6               | 0              | 5                          | 0               | 1              |
| 603            | 12             | 0                        | 6               | 0              | 6                          | 0               | 0              |
| 604            | 12             | 0                        | 0               | 6              | 0                          | 0               | 6              |
| 605            | 12             | 0                        | 6               | 0              | 6                          | 0               | 0              |
| 606            | 12             | 0                        | 6               | 0              | 6                          | 0               | 0              |
| <b>Total</b>   | <b>202</b>     | <b>1</b>                 | <b>74</b>       | <b>27</b>      | <b>65</b>                  | <b>3</b>        | <b>32</b>      |

TABLE 1B  
 PRODUCTION TEST 1: CHILDREN (n = 17)  
 SECOND ATTEMPT

| <u>Subj. #</u> | <u># of Ss</u> | <u>ANIMATE STIMULI</u> |                |                | <u>INANIMATE STIMULI</u> |                |                |
|----------------|----------------|------------------------|----------------|----------------|--------------------------|----------------|----------------|
|                |                | <u>*Ø Pron</u>         | <u>Ov.Pron</u> | <u>Full NP</u> | <u>Ø Pron</u>            | <u>*Ov.Pro</u> | <u>Full NP</u> |
| 501            | 6              | 0                      | 1              | 0              | 3                        | 0              | 2              |
| 502            | 5              | 2                      | 1              | 0              | 0                        | 2              | 0              |
| 503            | 0              | 0                      | 0              | 0              | 0                        | 0              | 0              |
| 504            | 12             | 0                      | 6              | 0              | 0                        | 5              | 1              |
| 505            | 2              | 0                      | 0              | 0              | 0                        | 0              | 1              |
| 506            | 2              | 0                      | 1              | 0              | 1                        | 0              | 0              |
| 507            | 11             | 0                      | 6              | 0              | 5                        | 0              | 0              |
| 508            | 2              | 0                      | 1              | 0              | 1                        | 0              | 0              |
| 509            | 1              | 0                      | 1              | 0              | 0                        | 0              | 0              |
| 510            | 7              | 0                      | 2              | 3              | 1                        | 0              | 1              |
| 512            | 2              | 0                      | 0              | 0              | 2                        | 0              | 0              |
| 601            | 0              | 0                      | 0              | 0              | 0                        | 0              | 0              |
| 602            | 1              | 0                      | 0              | 0              | 1                        | 0              | 0              |
| 603            | 1              | 0                      | 1              | 0              | 0                        | 0              | 0              |
| 604            | 12             | 0                      | 5              | 1              | 3                        | 3              | 0              |
| 605            | 1              | 0                      | 0              | 0              | 1                        | 0              | 0              |
| 606            | 2              | 0                      | 0              | 0              | 2                        | 0              | 0              |
| <b>Total</b>   | <b>67</b>      | <b>2</b>               | <b>25</b>      | <b>4</b>       | <b>20</b>                | <b>12</b>      | <b>5</b>       |

TABLE 1C

PRODUCTION TEST 1: ADULT (n = 12)

FIRST ATTEMPT

ANIMATE STIMULI      UNANIMATE STIMULI

| <u>Subj. #</u> | <u># of Ss</u> | <u>*Ø Pron</u> | <u>Ov.Pron</u> | <u>Full NP</u> | <u>Ø Pron</u> | <u>*Ov.Pro</u> | <u>Full NP</u> |
|----------------|----------------|----------------|----------------|----------------|---------------|----------------|----------------|
| A02            | 12             | 0              | 0              | 6              | 1             | 0              | 5              |
| A03            | 12             | 0              | 3              | 3              | 5             | 0              | 1              |
| A04            | 12             | 0              | 4              | 2              | 2             | 0              | 4              |
| A05            | 12             | 0              | 6              | 0              | 4             | 0              | 2              |
| A06            | 12             | 0              | 3              | 3              | 5             | 0              | 1              |
| A07            | 12             | 0              | 5              | 1              | 5             | 0              | 1              |
| A09            | 12             | 0              | 6              | 0              | 6             | 0              | 0              |
| A10            | 12             | 0              | 6              | 0              | 3             | 1              | 2              |
| A11            | 12             | 0              | 3              | 3              | 6             | 0              | 0              |
| A12            | 12             | 0              | 5              | 1              | 6             | 0              | 0              |
| A13            | 12             | 0              | 6              | 0              | 4             | 0              | 0              |
| A14            | 12             | 0              | 4              | 2              | 3             | 0              | 3              |
| <b>Total</b>   | <b>144</b>     | <b>0</b>       | <b>51</b>      | <b>21</b>      | <b>50</b>     | <b>1</b>       | <b>19</b>      |

TABLE 1D  
 PRODUCTION TEST 1: ADULT (n = 12)

SECOND ATTEMPT

| Subj. #      | # of Ss   | <u>[ANIMATE STIMULI]</u> |                |                | <u>[INANIMATE STIMULI]</u> |                |                |
|--------------|-----------|--------------------------|----------------|----------------|----------------------------|----------------|----------------|
|              |           | <u>*Ø Pron</u>           | <u>Ov.Pron</u> | <u>Full NP</u> | <u>Ø Pron</u>              | <u>*Ov.Pro</u> | <u>Full NP</u> |
| A02          | 7         | 0                        | 2              | 4              | 1                          | 0              | 0              |
| A03          | 4         | 0                        | 3              | 0              | 1                          | 0              | 0              |
| A04          | 6         | 0                        | 2              | 0              | 3                          | 1              | 0              |
| A05          | 2         | 0                        | 0              | 0              | 2                          | 0              | 0              |
| A06          | 4         | 0                        | 3              | 0              | 1                          | 0              | 0              |
| A07          | 3         | 0                        | 2              | 0              | 1                          | 0              | 0              |
| A09          | 0         | 0                        | 0              | 0              | 0                          | 0              | 0              |
| A10          | 3         | 0                        | 0              | 0              | 2                          | 0              | 1              |
| A11          | 3         | 0                        | 1              | 2              | 0                          | 0              | 0              |
| A12          | 1         | 0                        | 1              | 0              | 0                          | 0              | 0              |
| A13          | 2         | 0                        | 0              | 0              | 2                          | 0              | 0              |
| A14          | 5         | 0                        | 2              | 0              | 1                          | 1              | 1              |
| <b>Total</b> | <b>40</b> | <b>0</b>                 | <b>16</b>      | <b>6</b>       | <b>14</b>                  | <b>2</b>       | <b>2</b>       |

On their first attempt, the adults produced 100% correct responses in the animate condition (all 51 pronouns were phonetically realized); and 98% correct responses (50 out of the 51 pronouns were null) in the inanimate condition as shown in Table 1C. On their second attempt, they again had 100% correct responses in the animate condition (all 16 pronouns produced were overt) but 87.5% in the inanimate condition (14 out of 16 pronouns were correctly realized as null pronouns) as shown in Table 1D.

The children produced a total of 75 pronouns in the animate condition, with only one null pronoun (an incorrect response) on their first attempt (see Table 1A). This means they were right 98.7% of the time. For the inanimate condition, they produced 65 null pronouns and three overt (= incorrect) pronouns, meaning they were right 95.6% of the time. These results are a clear indication that the children are aware of the animate/ inanimate distinction in the use of sentence/ clause-final object pronouns at this stage of their linguistic development. On their second attempt (see Table 1B), 25 out of a total of 27 pronouns were overt for the animate condition, a correct response rate of 92.6%; and 20 null pronouns out of a total of 30 pronouns (constituting a correct response rate of 66.7%) were produced in the inanimate condition. There was a decrease in correct performance between the first and second responses for the inanimate condition. The ten incorrect responses were all produced by only three subjects.

The results show a general difficulty with the inanimate stimuli. Most of the mistakes were produced in this condition with the adults producing one and two incorrect responses in their first and second attempts. The children produced three and ten incorrect responses in the inanimate condition in their first and second attempts respectively. The comparatively larger number of unpredicted responses in this condition and the fact that performance did not improve but rather deteriorated for both adults and children seems to suggest that there is the possibility of

alternation between null and overt pronouns for the inanimate condition for some speakers and that they were undecided between the two. It is also possible that the form of the test muddled them.

### 6.2.2 Production Test 2

This test was designed to test knowledge of wh-in-situ questions as well as sensitivity to the neutralization of the animacy restrictions on the use of overt and null (resumptive) pronouns when followed by an adjunct.

#### 6.2.2.1 Design

The test consisted of six items, three of which had animate NPs in the stimulus sentence and the other three inanimate NPs. The test required subjects to ask questions after the experimenter made a statement. Subjects were told that they were going to play a game in which the experimenter made a statement and they asked him a question about it. The experimenter instructed the subjects thus:

'If I make a statement like,

- (3) Metee akutu  
I:plucked (an) orange  
"I plucked an orange"

I want you to ask me,

- (4) Kofi, [wotee no bere ben?]  
K., you:plucked it time which  
"Kofi, you plucked it when?"

The target response is a question (the part indicated in square brackets) in which the wh-phrase questioning the temporal clause is in situ. Preceding this wh-phrase is an overt pronoun *no* "it" referring to the inanimate NP *akutu* "orange". It was assumed that since the target NP had already been introduced in the discourse by the experimenter, subjects would optionally pronominalize it in their questions and that since this pronoun is followed by an adjunct (in this case an in-situ wh-phrase questioning the temporal adjunct), subjects would use an overt pronoun irrespective of whether the referent is animate or inanimate. The ability to produce structures as in (4) was assumed to be indicative of the fact that subjects were: i) aware of wh-in-situ questions in Akan, and ii) sensitive to the neutralization of the animacy restrictions on the use of phonetically realized pronouns before adjuncts.

Subjects who did not produce the target structures by giving either structures with clause-initial question-words or ones with full NPs instead of a pronoun in the target positions, were given a second chance. The prompts used for the second responses were usually of the form: "Wobetumi abisa asem *no* *ɔkwan* *foforo* *bi* *so*?" *Could you ask the question in another way?*, or "Wobetumi abisa asem *no* *a* *wommɔ* *m̄moa* *anaa* *neema* *no* *din*?" *Could you say it without mentioning the names of the animals or things?* The full set of test materials for this test is provided in Appendix B.

#### 6.2.2.2 Results

The results of Test 2 are provided in Tables 2A, 2B, 2C.

**Table 2A: Production Test 2, Questioning  
Children (n = 17), First Attempt**

|  |    |
|--|----|
| Total No. of Q's Produced:                                       | 97 |
| Q's with Final Wh-Words (in situ)                                | 56 |
| Final Wh-Words Preceded by Full NPs:                             | 24 |
| Final Wh-Words Preceded by Overt Pron. with Animate Reference:   | 15 |
| Final Wh-Words Preceded by Overt Pron. with Inanimate Reference: | 14 |

[Animate Ref.]      [Inanimate Ref.]

| <u>Subj. #</u> | <u># of Qs</u> | <u>in situ</u> | <u>Full NP</u> | <u>*∅ Pron</u> | <u>Ov.Pron</u> | <u>*∅ Pron</u> | <u>Ov.Pron</u> |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 501            | 6              | 2              | 1              | 1              | 0              | 0              | 0              |
| 502            | 4              | 3              | 1              | 0              | 1              | 0              | 1              |
| 503            | 6              | 5              | 1              | 0              | 2              | 0              | 2              |
| 504            | 6              | 1              | 0              | 0              | 0              | 0              | 1              |
| 505            | 6              | 1              | 0              | 0              | 0              | 0              | 1              |
| 506            | 6              | 6              | 0              | 0              | 3              | 0              | 3              |
| 507            | 6              | 0              | 0              | 0              | 0              | 0              | 0              |
| 508            | 6              | 6              | 6              | 0              | 0              | 0              | 0              |
| 509            | 5              | 5              | 2              | 0              | 1              | 0              | 2              |
| 510            | 5              | 3              | 1              | 1              | 1              | 0              | 0              |
| 512            | 6              | 4              | 2              | 1              | 1              | 0              | 0              |
| 601            | 6              | 6              | 1              | 0              | 2              | 0              | 3              |
| 602            | 6              | 4              | 4              | 0              | 0              | 0              | 0              |
| 603            | 6              | 3              | 1              | 0              | 1              | 0              | 1              |
| 604            | 6              | 1              | 1              | 0              | 0              | 0              | 0              |
| 605            | 6              | 1              | 0              | 0              | 1              | 0              | 0              |
| 606            | 5              | 5              | 3              | 0              | 2              | 0              | 0              |
| <b>Total</b>   | <b>97</b>      | <b>56</b>      | <b>24</b>      | <b>3</b>       | <b>15</b>      | <b>0</b>       | <b>14</b>      |

**Table 2B: Production Test 2, Questioning  
Children (n = 17), Second Attempt**

|  |    |
|--|----|
| Total No. of Q's Produced:                                       | 57 |
| Q's with Final Wh-Words (in situ)                                | 42 |
| Final Wh-Words Preceded by Full NPs:                             | 7  |
| Final Wh-Words Preceded by Overt Pron. with Animate Reference:   | 16 |
| Final Wh-Words Preceded by Overt Pron. with Inanimate Reference: | 14 |

| <u>Subj. #</u> | <u># of Qs</u> | <u>in situ</u> | <u>Full NP</u> | <u>[Animate Ref.]</u> |                 | <u>[Inanimate Ref.]</u> |                 |
|----------------|----------------|----------------|----------------|-----------------------|-----------------|-------------------------|-----------------|
|                |                |                |                | <u>*∅ Pron</u>        | <u>Ov. Pron</u> | <u>*∅ Pron</u>          | <u>Ov. Pron</u> |
| 501            | 4              | 1              | 0              | 0                     | 1               | 0                       | 0               |
| 502            | 2              | 2              | 0              | 0                     | 1               | 0                       | 1               |
| 503            | 4              | 4              | 0              | 0                     | 2               | 0                       | 2               |
| 504            | 4              | 0              | 0              | 0                     | 0               | 0                       | 0               |
| 505            | 6              | 1              | 0              | 0                     | 0               | 0                       | 1               |
| 506            | 0              | 0              | 0              | 0                     | 0               | 0                       | 0               |
| 507            | 4              | 2              | 1              | 0                     | 0               | 1                       | 0               |
| 508            | 5              | 5              | 0              | 0                     | 3               | 0                       | 2               |
| 509            | 3              | 3              | 0              | 0                     | 2               | 0                       | 1               |
| 510            | 3              | 2              | 0              | 1                     | 0               | 0                       | 1               |
| 512            | 6              | 4              | 0              | 1                     | 1               | 0                       | 2               |
| 601            | 1              | 1              | 0              | 0                     | 1               | 0                       | 0               |
| 602            | 3              | 3              | 2              | 1                     | 0               | 0                       | 0               |
| 603            | 4              | 4              | 1              | 1                     | 1               | 0                       | 1               |
| 604            | 4              | 1              | 0              | 0                     | 1               | 0                       | 0               |
| 605            | 0              | 0              | 0              | 0                     | 0               | 0                       | 0               |
| 606            | 4              | 4              | 1              | 0                     | 1               | 0                       | 2               |
| <b>Total</b>   | <b>57</b>      | <b>42</b>      | <b>7</b>       | <b>4</b>              | <b>16</b>       | <b>1</b>                | <b>14</b>       |

**Table 2C:**  
**Production Test 2: Questioning**  
**Adults (n = 12), First Attempt**

|  |    |
|--|----|
| Total No. of Q's Produced:                                       | 71 |
| Q's with Final Wh-Words (in situ)                                | 57 |
| Final Wh-Words Preceded by Full NPs:                             | 21 |
| Final Wh-Words Preceded by Overt Pron. with Animate Reference:   | 19 |
| Final Wh-Words Preceded by Overt Pron. with Inanimate Reference: | 17 |

[Animate Ref.]    [Inanimate Ref.]

| <u>Subj. #</u> | <u># of Qs</u> | <u>in situ</u> | <u>Full NP</u> | <u>*∅ Pron</u> | <u>Ov. Pron</u> | <u>*∅ Pron</u> | <u>Ov. Pron</u> |
|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|-----------------|
| A02            | 5              | 3              | 2              | 0              | 0               | 0              | 1               |
| A03            | 6              | 6              | 1              | 0              | 3               | 0              | 2               |
| A04            | 6              | 6              | 6              | 0              | 0               | 0              | 0               |
| A05            | 6              | 1              | 1              | 0              | 0               | 0              | 0               |
| A06            | 6              | 6              | 0              | 0              | 3               | 0              | 3               |
| A07            | 6              | 5              | 5              | 0              | 0               | 0              | 0               |
| A09            | 6              | 3              | 3              | 0              | 0               | 0              | 0               |
| A10            | 6              | 4              | 0              | 0              | 2               | 0              | 2               |
| A11            | 6              | 5              | 2              | 0              | 2               | 0              | 1               |
| A12            | 6              | 6              | 0              | 0              | 3               | 0              | 3               |
| A13            | 6              | 6              | 1              | 0              | 3               | 0              | 2               |
| A14            | 6              | 6              | 0              | 0              | 3               | 0              | 3               |
| <b>Total</b>   | <b>71</b>      | <b>57</b>      | <b>21</b>      | <b>0</b>       | <b>19</b>       | <b>0</b>       | <b>17</b>       |

**Table 2D:**  
**Production Test 2: Questioning**  
**Adults (n = 12), Second Attempt**

|  |    |
|--|----|
| Total No. of Q's Produced:                                       | 37 |
| Q's with Final Wh-Words (in situ)                                | 31 |
| Final Wh-Words Preceded by Full NPs:                             | 1  |
| Final Wh-Words Preceded by Overt Pron. with Animate Reference:   | 13 |
| Final Wh-Words Preceded by Overt Pron. with Inanimate Reference: | 14 |

[Animate Ref.]    [Inanimate Ref.]

| <u>Subj. #</u> | <u># of Qs</u> | <u>in situ</u> | <u>Full NP</u> | <u>*∅ Pron</u> | <u>Ov.Pron</u> | <u>*∅ Pron</u> | <u>Ov.Pron</u> |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| A02            | 4              | 2              | 0              | 0              | 1              | 0              | 1              |
| A03            | 1              | 1              | 0              | 0              | 0              | 0              | 1              |
| A04            | 6              | 6              | 0              | 0              | 3              | 0              | 3              |
| A05            | 6              | 6              | 0              | 0              | 3              | 0              | 3              |
| A06            | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| A07            | 6              | 6              | 0              | 0              | 3              | 3              | 0              |
| A09            | 6              | 3              | 0              | 0              | 2              | 0              | 1              |
| A10            | 3              | 2              | 0              | 0              | 0              | 0              | 2              |
| A11            | 3              | 3              | 0              | 0              | 1              | 0              | 2              |
| A12            | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| A13            | 2              | 2              | 1              | 0              | 0              | 0              | 1              |
| A14            | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| <b>Total</b>   | <b>37</b>      | <b>31</b>      | <b>1</b>       | <b>0</b>       | <b>13</b>      | <b>3</b>       | <b>14</b>      |

Out of the 71 questions produced by the adult control group on their first attempt (see Table 2C), 57 (80.3%) had the wh-phrase in situ. Thirty-six pronouns preceded the in-situ wh-phrases and all (100%) were overt as predicted. Nineteen (52.8%) had animate reference and 17 (47.2%) had inanimate reference. On the second attempt (Table 2D), however, their performance degenerated with one subject producing three null pronouns (all with inanimate reference) out of a total of 30 before the wh-phrase. Out of the 30 overt pronouns, 13 (43.3%) had animate reference and 14 (46.7%) had inanimate reference. They had a combined total of 90% correct responses for this attempt.

On their first attempt, the child subjects produced a total of 97 questions out of which 56 (57.8%) had the wh-phrase in situ (see Table 2A). Out of the 56 in situ questions, 32 had pronouns before the wh-phrase, with three (incorrect responses produced by three of the 5 year-olds) null pronouns for the animate condition and no null pronouns for the inanimate referents. There were 15 (51.7%) and 14 (48.3%) overt pronouns for the animate and inanimate referents respectively. This constitutes a total of 90.6% 'correct' or predicted responses with respect to the use of overt pronouns. Their performance decreased slightly on their second attempt (see Table 2B). They produced 42 in-situ questions out of a total of 57 (=73.7%). Out of the 35 pronouns produced, four were null for animate referents and one for inanimate referents. They produced a total of (85.7%) correct responses for both animate and inanimate conditions, a decrease of 4.9% from their first attempt.

It is not clear what caused the reduction in the performance of both the child and adult subjects on their second attempts. It is possible for a person asked to repeat an utterance to either correct or hypercorrect it depending on the circumstances. It is important to note that all the three null pronouns used in the inanimate condition in the second attempt by adults were produced by one subject

(#A07). It is possible that this subject's dialect or idiolect allows him to use null pronouns for inanimate reference under the conditions tested and that he might have made use of this option in the second attempt. A check of the tape recording of the session with him reveals this to be the case. The subject appeared to be undecided about the use of the null pronoun before the temporal adjunct for item 5 involving an inanimate stimulus (see Appendix B). He produced a null pronoun for this item on his first two attempts then he paused and indicated to the interviewer that it is possible to say it another way. He then said the sentence again, this time, with the overt pronoun. Since only the first and second tries were included in the tables, this third response is not reflected in the computation of the results.

The problems noted above notwithstanding, these results can be taken as showing awareness of *wh-in-situ* sentences and sensitivity to the neutralization of the animacy restriction on the use of overt pronouns on the part of the Akan children<sup>3</sup>. The question as to whether this knowledge is acquired at an earlier age than five will form the basis of later research.

### 6.2.2. 3 Summary

The results of the two tests reported here show that by the age of 5/6, Akan children have acquired near-adult competence in the use of *wh-in-situ* questions and

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<sup>3</sup> On hindsight, it would have been desirable to use an animate NP in the training sentence since the use of an overt pronoun for such NPs is constant in all environments; it is only with inanimate NPs that there is a variation from null to overt pronouns depending on the context. It might be objected that subjects' (especially the children's) use of the overt pronoun was a mere parroting of the training sentence and does not reflect actual knowledge. But the number of sentences with clause-initial *wh*-words produced especially on the first attempts argues to the contrary. The fact that the children had 41 clause-initial *wh*-words out of a total of 97 questions on their first attempt, and 15 out of 42 on their second; and the adults produced 14 out of 71, and 6 out of 37 in their first and second attempts in addition to a lot of full NPs (not found in the training sentence) indicates that subjects were not merely repeating the training sentence. The results therefore can be seen as reflecting the range of possibilities that the speakers have in forming questions: i) the *wh*-word may be *in situ* or may be in clause-initial position, and ii) with *in situ wh*-questions, a full NP or a pronoun may be used before the *wh*-word.

they are also aware of the animacy restrictions that regulate the use of overt and null third person pronominals in clause/ sentence-final position and before adjuncts. This knowledge is important for the performance of subjects in the subsequent tests in this study since they would be required to link clause-peripheral wh-words/ phrases to a pronominal (overt or null) in either a top or lower clause.

As has been stated already, it is possible to argue that the alternation regarding the use of overt and null inanimate pronouns especially by the one adult subject in Test 2 may be the result of an optionality in the use of such pronouns before an adjunct. It may be further argued that the object pronoun is present in D-Structure for both animate and inanimate arguments and that it is unrealized at PF if: i) its referent is inanimate, and ii) it occurs in clause/sentence-final position. If the object pronoun is followed by an adjunct, however, it is phonetically realized for both animate and inanimate NPs.

The reason for the above position may not be far-fetched. Consider the training sentence in (4) repeated here as (5):

- (5) Kofi, wotee            no bere ben?  
K.    you:plucked    it time what  
"Kofi, you plucked it when?"

The verb *te* "plucked", like all the verbs in the tests, is transitive and therefore has an object theta-role to assign at all levels representation. The object theta-role is assigned to the pronoun *no* "it". If this object is phonetically empty (i.e. not realized) at either PF or S-Structure, it would be possible to analyze the adjunct wh-word *bere ben* "when" as bearing the object theta-role, contrary to the intended meaning. The presence of the overt inanimate pronoun in such environments therefore aids intelligibility (processing) of the in-situ questions.

### 6.3. Wh-Binding/Linkage

In this section I report on a study on children's knowledge of questions with sentence-initial wh-words based on studies involving wh-movement in English. Akan, as we have seen in the first part of this study, is an in situ language which lacks syntactic wh-movement. Unlike English, Akan allows structures in which question-words in pre-IP position can be linked to positions inside constructions usually analyzed as syntactic islands (in languages like English) as in the following examples:

- (6) Dɛn<sub>i</sub> na dɔkɔta no hɔhɔroo ne nsa ho ansa na  
What Foc. doctor the washed his hands around before  
ɔrefa [e<sub>i</sub>]?  
he:Prog:take it  
“What did the doctor wash his hands before he took?”
- (7) Dɛn<sub>i</sub> na wohuu onipa ko a otwaae [e<sub>i</sub>]?  
What Foc you:saw person Sp. Rel. 3sg:cut it  
“What did you see the person that cut?”
- (8) Hɛn<sub>i</sub> na wohuu onipa ko a ɔbɔɔ no<sub>i</sub> no?  
Who Foc. you:saw person Sp. Rel. 3sg:hit 3sg the  
“Who did you see the person that hit him/her?”
- (9) Dɛn<sub>i</sub> na Mary bisaa sɛ hɛna na ɔyɛɛ [e<sub>i</sub>] ?  
What Foc. M. asked that who Foc. 3sg:made it  
“What did Mary ask who made?”

Constituents have been questioned from within a temporal clause in (6), a relative clause in (7) and (8), and a wh-island in (9) and the result is grammatical in each case. In chapter 5, I took the position that the wh-word/phrase is base-generated in a pre-IP position and a resumptive pronoun is also base-generated in situ in the comment or predicated clause as part of the general focus-marking rule in Akan.

### **6.3.1 Test 3: Question-Response Task**

The focus of this test is on children's sensitivity to the constraints or lack of constraints on the linkage of a clause-peripheral wh-word to a position inside what are considered syntactic islands in a language like English and the implications of the results for processing theory and grammatical theory. The subjects were the same as those that took part in the tests reported in the production tests 1 and 2.

### **6.3.2 Design**

Beginning with Otsu (1981), sensitivity to island constraints has been probed in psycholinguistic studies using an ambiguous question technique: a subject is required to respond to questions in which the question word could refer to one of two positions in the following sentence; avoidance of answers which link the question word to a position inside a syntactic island is taken as evidence that the subject's grammar blocks extraction from that position. The test here is adapted to Akan from Goodluck, Foley and Sedivy (1992), who used the ambiguous question technique to test sensitivity to the block on extraction from a temporal clause in English.

In Goodluck et al's test, subjects were read short stories consisting of four sentences, each accompanied by a picture. Subjects then had to respond to questions in which the question word in principle could be construed with a

position in the main clause (yielding an "upstairs" or "main clause" answer) or with a position in the subordinate clause (yielding a "downstairs" or "subordinate clause" answer). This is given the schematic representation in (10):

|      |  |                              |
|------|--|------------------------------|
| (10) | <b><u>Construal</u></b>                                  | <b><u>Type of Answer</u></b> |
|      | a. Wh <sub>i</sub> [IP1 S V O <sub>i</sub> ] [IP2 S V O] | "Upstairs"/"Main Clause"     |
|      | b. Wh <sub>i</sub> [IP1 S V O] [IP2 S V O <sub>i</sub> ] | "Downstairs"/"Subordinate"   |

There were three experimental conditions in this test. In condition 1, the question word was inanimate and the subordinate clause was a temporal clause. In condition 2, the question word was animate and the subordinate clause was temporal. In conditions 1 and 2, half the subjects received materials with *before* and half received an *after* question. In condition 3, the question word was animate and the subordinate clause was a VP complement. Examples of the English materials are given in Table 3.

### Table 3: Question Response Task

#### Experimental Conditions: English

**Condition 1:** Temporal adjunct (question word = *what*, action verbs in both main and subordinate clause.)

**Story:**                   The fox ran down to the river.  
                                  He ate an ice-cream cone.  
                                  Then he whistled a tune he'd heard on the radio.  
                                  The fox felt pretty happy.

**Before Question:**    What did the fox eat before whistling?

**Upstairs answer:** an ice-cream cone; **Downstairs answer:** a tune

**After Question:**     What did the fox whistle after eating?

**Upstairs answer:** a tune; **Downstairs answer:** an ice-cream cone.

**Condition 2:** Temporal adjunct (question word = *who*, main verb *ask*, action verb in subordinate clause.)

**Story:**                   The elephant liked to work  
                                  She asked the tiger: "Shall I help the horse carry the boxes?"  
                                  The tiger said "Yes!", so the elephant helped he horse.  
                                  The elephant was tired at the end of it all.

**Before Question:**    Who did the elephant ask before helping?

**Upstairs answer:** the tiger; **Downstairs answer:** the horse.

**After Question:**     Who did the elephant help after asking?

**Upstairs answer:** the horse; **Downstairs answer:** the tiger.

**Condition 3:** Complement to main clause verb (question word = *who*, main verb = *ask/want*, action verb in subordinate clause.)

**Story:**                    The zebra was feeling happy.  
                                  He just wanted to hug and kiss everyone.  
                                  He asked the lion: "Shall we kiss the monkey?"  
                                  The zebra was a kind animal.

**Question:**                Who did the zebra ask to kiss?

**Upstairs answer:** the lion; **Downstairs answer;** the monkey.

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In each of the three conditions, the test question is potentially ambiguous: the question-word could be understood to be referring to the object position of either the main verb (an upstairs answer) or the subordinate verb (downstairs answer). Children as well as adults in English almost invariably gave upstairs answers when the choice was between linking the question word to the main clause or to a temporal clause. The temporal prepositions (*before* and *after*) had no effect on the proportion of upstairs/downstairs responses, indicating that the preference for upstairs responses was not due to a preference for interpreting particular verbs as transitive. When the choice was between linking the question word to the main clause or a complement in the VP, by contrast, subjects divided their answers between upstairs and downstairs responses.

Table 4 gives examples of the materials from the adaptation of the Goodluck et al test to Akan.

**TABLE 4: Test 3, Question Response Task**

**Experimental Conditions: Akan**

**Condition 1:** Temporal adjunct (question word = **den** “what”, action verb in both main and subordinate clause.)

**Story:**

Sakraman tuu mirika kɔɔ nsu no ho.

Fox ran to the river.

Odii aiskrim.

He ate ice-cream.

Afei, ɔkyerew lete kɔmaa ne maame.

Then he wrote a letter to his  
mother.

Sakraman ye aboa onyansafo.

Fox is a clever animal.

**Before Question:** Den na Sakraman dii ansa na ɔrekyerew? What did Fox eat before he wrote?

**Upstairs answer:** aiskrim “ice-cream”; **Downstairs answer:** lete “letter”

**After Question:** Den na Sakraman kyerewee bere a odi wiei no? What did Fox write after he  
ate?

**Upstairs answer =** lete “letter”; **Downstairs answer =** aiskrim “ice-cream”

**Condition 2:** Temporal adjunct (question word = **Hena** “who”; main verb **bisa** “ask”, action verb in subordinate clause.)

**Story:**

ɔsono pe adwuma ye

Elephant likes to work.

Obisaa ɔsebo se:

She asked Tiger,

“Me mboa ɔponko ma ɔnsɔa ndaka no?”

“Shall I help Horse to carry the boxes?”

ɔsebo buae se: “Yiw”,

Tiger said, “Yes”

nti ɔsono boaa ɔponko

so Elephant helped Horse.

Wɔwiei no na ɔsono abre paa.

Elephant was very tired when they finished.

**Before Question:** Hena na ɔsono bisaa no ansa na ɔreboa no? Who did Elephant ask (him)  
before he helped (him)?

Upstairs answer: ɔsebo "Tiger"; Downstairs answer: ɔpɔnkɔ "Horse"

After Question: Hena na ɔsono boaa no bere a obisaa no wiei no? Who did Elephant help  
him/her after asking him/her?

Upstairs answer: ɔpɔnkɔ "Horse"; Downstairs answer: ɔsebo "Tiger"

Condition 3: Complement to main verb (question word = **Hena** "who"; main verb = **pɛ**  
"want"/ **bisa** "ask"; action verb in subordinate clause.)

Story :

Afurupɔnkɔ ani agye paa.

Camel was very happy.

Na ɔpɛ se okyia obiara.

He wanted to greet everybody.

Obisaa Gyata se: "Yɛn nkyia ɔkwaku?"

He asked Lion: "Shall we greet Monkey?"

Afurupɔnkɔ ye aboa papa.

Camel is a very kind animal.

Question: Hena na Afurupɔnkɔ bisaa no se wɔnkyia no? Who did Camel ask him that they greet  
him?

(Upstairs answer = Gyata "Lion"; Downstairs answer = ɔkwaku "Monkey".)

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There were a number of problems in translating the materials from Goodluck et al. into Akan, deriving from: i) the distribution of object pronouns in animate and inanimate conditions; ii) reduplication of verbs and intransitivity; iii) tense/mood of the subordinate clauses; iv) *after* variants of the temporal sentences, and v) cultural translatability of some of the items. These problems and how they were solved are discussed in turn below.

i) Object pronouns are generally null in Akan if the referent is inanimate, but phonetically overt if the referent is animate. This is true of both ordinary pronouns and resumptive pronouns used in *wh*-questions and relative clauses. It created a

problem in the construction of the test questions as the following sample questions demonstrate:

- (11) a.    Dɛn na Sakraman dii — ansa na ɔrekyerɛw —?  
           What Foc Fox       ate — before he:wrote —  
           “What did the Fox eat before he wrote?”
- b.    \*Hena na ɔsono bisaa — ansa na ɔreboa —?  
           Who Foc. Elephant asked — before he:helped —  
           “Who did Elephant ask before he helped ?”
- c.    Hena na ɔsono bisaa no ansa na ɔreboa ɔpɔnkɔ?  
           Who Foc. Elephant ask    3sg before 3pl:help Horse  
           “Who did Elephant ask him/her before he helped Horse?”

The referent of the wh-word **den** “what” in (11a) is inanimate so no overt resumptive pronoun is needed and the sentence appears (at least on the surface) to be preserving the trick in the English experiment , which relies on the fact that both the main and subordinate clauses have verbs that can be transitive or intransitive. The situation is different for the animate condition. Since the referent of **hena** “who” in (11b & c) is animate, no 'gap' can appear after either of the verbs; an overt resumptive pronoun must necessarily be present after one of the verbs (i.e. the one that the wh-word is to be associated with) while the other verb may be followed by a lexical NP as in (11c). Because there is no such resumptive pronoun and/or lexical NP in (11b), the sentence is grossly ungrammatical. The presence of the overt resumptive pronouns and/or lexical NP as in (11c), however, destroys the trick of the original Goodluck et al. test, in which the main and subordinate verbs

are ambiguously transitive/intransitive. To partially solve this problem, the questions involving the animate conditions were constructed in such a way that each of the target verbs had an overt resumptive pronoun after it as in:

- (12) a. Hena na əsono bisaa no ansa na əreboa no?  
Who Foc. Elephant asked 3sg before he:helped 3sg  
“Who did Elephant ask him/her before he helped him/her?”
- b. Hena na Agyinamoā bisaa no se wəmbōa no?  
Who Foc. Cat asked 3sg that 3pl:help 3sg  
“Who did Cat ask that they should help?”

By constructing the questions this way, they were made potentially ambiguous and they partially paralleled the English test sentences since the subject must decide which of the two pronouns the question word is linked to. There is a strong tendency to want to make the two resumptive pronouns like those in (12a, b) coreferential — something permitted by the grammar and parallel in the case of temporal clauses to parasitic gap constructions in English — but such a reading is impossible given the content of the story that precedes the question. Even in the inanimate condition, since inanimate pronouns are null, an intransitive construal of one of the verbs is not guaranteed; the verb not linked to a trace could be interpreted as having a null pronoun after it and the attendant problems sketched for animate pronouns (i.e., the possibility for a coreferential reading for the null pronouns) re-emerge. This problem could not be solved in any other way and I took consolation from Helen Goodluck's (p.c.) suggestion that while some adult native speakers of English prefer a parasitic gap reading for sentences like “*Who did the elephant ask*

*before helping*" when such sentences are presented in isolation, this did not seem to interfere with their performance in the actual test in English.

ii) Reduplicated forms of verbs posed a special problem in that they are usually associated with intransitive readings and/or plural arguments. For example, **didii** the reduplicated form of the verb **di** "to eat" is always used intransitively in (13):

(13) a. Kofi didii \*(adwane no).

K. ate food the

"Kofi ate \*(the food).

b. Kofi dii [e]/ adwane no.

K. ate it/ food the

"Kofi ate it/the food."

A lexical NP is not possible after the reduplicated verb **didii** "ate" in (13a) and the sentence is understood as *Kofi ate*. The unreduced verb **dii** "ate" in (13b) however takes the lexical NP **adwane no** "the food" and the absence of such an argument is understood as indicating the presence of a null pronoun "it/them". Reduplicated verbs were therefore avoided because their presence would have had the undesirable consequence of forcing an intransitive reading of the verbs in most cases.

iii) Due to the lack of one-to-one correspondence in the tense and aspectual forms in the two languages certain changes were effected in the translation from English into Akan. For example, it is not possible to have the exact equivalent of sentences of the form: *What did the fox eat before writing?* so such a sentence was translated with a subject and a tensed verb in the temporal clause (the equivalent of

*What did Fox eat before he wrote?* ) in the Akan version. This does not pose a problem as far as the experimental conditions are concerned.

Though English has the two types of sentences exemplified in (14a, b) while Akan has only the type in (14b) as a result of the non-correspondence between tense/aspect systems of the two languages, the experimental conditions are preserved. There is no overt subject in the second clause as a result of the anaphoric tense-marking in (14a) but with independent tense-marking as in (14b), there is a subject in the temporal clause.

- (14) a. The fox *ate* ice cream before *writing* a letter to his mother.  
b. The fox *ate* ice cream before he *wrote* a letter to his mother.

Despite this difference, the two construction types pattern in a parallel fashion with respect to complement extraction, with construal with a gap in the main clause the only possibility in English in either case<sup>4</sup>:

- (15) a. What did the fox *eat* – before *writing* a letter to his mother?  
b. \*What did the fox *eat* ice cream before *writing* – to his mother?

- (16) a. What did the fox *eat* – before he *wrote* a letter to his mother?  
b. \*What did the fox *eat* ice cream before he *wrote* – to his mother?

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<sup>4</sup> I owe these observations and examples in (14)-(16) to an anonymous reviewer of *The Linguistic Review*.

These factors show that the independent tense marking manifested in the Akan versions of the test material need not be a confounding factor in the experiment.

iv) The *before/after* manipulation was included in the Goodluck et al. study to guard against the possibility of results that reflect a preference for construing one or the other of the verbs in the test question as transitive. The upstairs answer is the opposite for the *before* and *after* questions in conditions 1 and 2 in the Goodluck et al. study. The same thing was done for the Akan material but it resulted in using a rather complicated structure for the *after* question. For example, while the *before* question for story 1 of the condition 1 is as in (12a) above, its *after* version is:

- (17) Hena na ɔsono boaa no bere a obisaa no wiei no?  
Who Foc. Elephant helped 3sg time Rel. he:asked 3sg finish  
“Who did Elephant help him/her after he asked him/her?”

which is more complex in structure than the *before* sentences and less favoured by speakers. More will be said about the problems with the *after* clauses in chapter 7, section 7.2.3.

v) In response to problems concerning the cultural translatability of items, the following steps were taken: i) borrowed forms like **nuuspepa**, **aiskrim**, **lete**, **flawa**, and **gaaden**, were used for the English words “newspaper”, “ice-cream”, “letter”, “flower”, and “garden” to reflect common usage in the language; ii) words and/or concepts for which there were no equivalents in Akan were given substitutes in Akan; and iii) sentences that were difficult to translate into Akan were modified to achieve good-sounding Akan sentences. The changes made in the stories may be noted by comparing the original materials (given in the Goodluck et al, appendix) with the Akan materials in Appendix A of this study.

There were three stories and questions for each condition; the stories were shuffled to produce a different order of presentation for each subject, with the constraint that no runs of more than two stories in a given condition were permitted.

### **6.3.3 Results**

The results of test 3 are given in Tables 5A, 5B, 5C, 5D, and 5E in terms of percentage upstairs and downstairs answers to the three conditions. Table 5A gives the individual scores for the Akan-speaking children; Table 5B, the individual scores of the Akan adults; Table 5C compares the results from the Akan child and adult subjects; and Table 5D gives the English results from the Goodluck et al (1992: 183) study.

**Table 5A**  
**Question-Response Task**  
**Percentage Reference of Wh-Word**  
**Akan Children (n = 17)**

| <u>Subj.</u> | <u>Condition 1</u> |             |              | <u>Condition 2</u> |             |              | <u>Condition 3</u> |             |              |
|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|
|              | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> |
| 501          | 3                  | 0           | 0            | 1                  | 2           | 0            | 1                  | 1           | 1            |
| 502          | 3                  | 0           | 0            | 0                  | 1           | 2            | 1                  | 0           | 2            |
| 503          | 2                  | 0           | 0            | 2                  | 1           | 0            | 2                  | 1           | 0            |
| 504          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| 505          | 2                  | 1           | 0            | 1                  | 1           | 1            | 2                  | 1           | 0            |
| 506          | 2                  | 1           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| 507          | 3                  | 0           | 0            | 2                  | 1           | 0            | 2                  | 1           | 0            |
| 508          | 3                  | 0           | 0            | 2                  | 0           | 1            | 1                  | 1           | 1            |
| 509          | 3                  | 0           | 0            | 3                  | 0           | 0            | 0                  | 2           | 1            |
| 510          | 3                  | 0           | 0            | 1                  | 2           | 0            | 2                  | 1           | 0            |
| 512          | 2                  | 0           | 1            | 2                  | 0           | 1            | 3                  | 0           | 0            |
| 601          | 2                  | 1           | 0            | 2                  | 1           | 0            | 3                  | 0           | 0            |
| 602          | 3                  | 0           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| 603          | 2                  | 1           | 0            | 3                  | 0           | 0            | 3                  | 0           | 0            |
| 604          | 2                  | 1           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| 605          | 2                  | 1           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| 606          | 3                  | 0           | 0            | 3                  | 0           | 0            | 3                  | 0           | 0            |
| Total        | 18                 | 5           | 1            | 19                 | 2           | 3            | 16                 | 7           | 1            |
| %age         | 84                 | 12          | 4            | 72                 | 17          | 11           | 61                 | 29          | 10           |

**Table 5B**  
**Question-Response Task**  
**Percentage Reference of Wh-Word**  
**Akan Adults (n = 12)**

| <u>Subj.</u> | <u>Condition 1</u> |             |              | <u>Condition 2</u> |             |              | <u>Condition 3</u> |             |              |
|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|
|              | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> |
| A02          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| A03          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| A04          | 3                  | 0           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| A05          | 3                  | 0           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| A06          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| A07          | 3                  | 0           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| A09          | 3                  | 0           | 0            | 2                  | 1           | 0            | 0                  | 3           | 0            |
| A10          | 2                  | 0           | 1            | 2                  | 1           | 0            | 1                  | 1           | 1            |
| A11          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| A12          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 2           | 0            |
| A13          | 3                  | 0           | 0            | 3                  | 0           | 0            | 1                  | 1           | 1            |
| A14          | 3                  | 0           | 0            | 3                  | 0           | 0            | 2                  | 1           | 0            |
| Total        | 35                 | 0           | 1            | 34                 | 2           | 0            | 15                 | 19          | 2            |
| %age         | 97                 | 0           | 3            | 94                 | 6           | 0            | 42                 | 53          | 5            |

**Table 5C**

**Question-Response Task**

**Percentage Reference of Wh-Word**

**Children and Akan Adults Compared**

|               | <u>Condition 1</u>     |             |              | <u>Condition 2</u>     |             |              | <u>Condition 3</u> |             |              |
|---------------|------------------------|-------------|--------------|------------------------|-------------|--------------|--------------------|-------------|--------------|
|               | (Temporal: den "what") |             |              | (Temporal: hena "who") |             |              | (VP-Complement.)   |             |              |
|               | <u>Main</u>            | <u>Sub.</u> | <u>Other</u> | <u>Main</u>            | <u>Sub.</u> | <u>Other</u> | <u>Main</u>        | <u>Sub.</u> | <u>Other</u> |
| Child<br>n=17 | 84                     | 12          | 4            | 72                     | 17          | 11           | 61                 | 29          | 10           |
|               |                        |             |              |                        |             |              | (70)               | (21)        | (9)          |
| Adult<br>n=12 | 97                     | 0           | 3            | 94                     | 6           | 0            | 42                 | 53          | 5            |
|               |                        |             |              |                        |             |              | (54)               | (38)        | (8)          |

**Table 5D**  
**Question-Response Task**  
**Percentage Reference of Wh-Word**  
**English Children and Adults Compared**

|               | <u>Condition 1</u>      |             |              | <u>Condition 2</u>     |             |              | <u>Condition 3</u>      |             |              |
|---------------|-------------------------|-------------|--------------|------------------------|-------------|--------------|-------------------------|-------------|--------------|
|               | <u>(Temporal: what)</u> |             |              | <u>(Temporal: who)</u> |             |              | <u>(VP-Complement.)</u> |             |              |
|               | <u>Main</u>             | <u>Sub.</u> | <u>Other</u> | <u>Main</u>            | <u>Sub.</u> | <u>Other</u> | <u>Main</u>             | <u>Sub.</u> | <u>Other</u> |
| 3 yrs<br>n=12 | 67                      | 8           | 25           | 67                     | 14          | 19           | 39                      | 50          | 19           |
| 4 yrs<br>n=12 | 78                      | 3           | 19           | 78                     | 14          | 8            | 58                      | 31          | 11           |
| Adults        | 100                     | 0           | 0            | 96                     | 0           | 4            | 33                      | 50          | 17           |

As the results show, the Akan subjects, like the English subjects in the Goodluck et. al. study, strongly preferred to make the question word refer to the main clause object particularly in condition 1. The Akan adults gave 97% main clause answers in condition 1 (with all 12 subjects contributing), and one "other" answer by one subject; 94% main clause answers in condition 2 (with 12 subjects contributing), and two "other" responses (contributed by two subjects); and there was a split of 42% and 53% main clause and subordinate clause answers (contributed by 11 and 12 subjects respectively) with two "other" answers by two subjects in condition 3. The Akan child subjects showed a similar pattern of responses to that of the adults (see Table 5C). They gave 84% main clause answers

(with 12 subjects contributing to the total), 12% subordinate clause answers (with 6 subjects contributing), 4% "other" (by one subject) answers in condition 1. In condition 2.<sup>5</sup>, they produced 72% main clause (with 8 subjects contributing), 17% subordinate clause (with 7 subjects contributing), and 11% "other" answers (with 4 subjects contributing). In condition 3, the children distributed their answers as follows: 61% main clause answers (with 16 subjects contributing), 29% subordinate clause answers (with 12 subjects contributing), and 10% "other" responses (by four subjects).

As Table 5D shows, the English adults gave 100% main clause answers in condition 1; 96% main clause, and 4% "other" answers in condition 2; and 33% main clause, 50% subordinate clause, and 17% "other" answers in condition 3. The 4-year old English children produced the following results: 78% main clause, 3% subordinate clause and 19% "other" responses in condition 1; 78% main clause, 14% downstairs, and 8% "other" answers for conditions 2; and 58% main clause, 31% subordinate clause, and 11% "other" answers in condition 3.

In Goodluck et al's study, subjects were classified as 'passers' if they showed a pattern of giving at least one downstairs answer to condition 3 and more upstairs answers to condition 1 and 2 than to condition 3, that is, if their pattern of responses distinguished temporal clauses from VP - complements in the way predicted by knowledge of the temporal island constraint. Thirteen out of a total of 24 children (aged 3-4 years) and six out of eight adult English speakers were

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<sup>5</sup> In condition 2, a follow-up question was asked after the subject had given an answer to the question. The aim of the follow-up question was to probe the verb that (according to the content of the story) the subject had not addressed in his/her answer. Performance on the follow-up questions, which were intended as a check on memory for the content of the story, was excellent.

passers in this sense. In the Akan test, all the 17 children and 12 adult subjects were passers.

Just like the English test, the Akan results showed no difference between clauses introduced by a *before* or an *after* clause. In the English test, two of the tokens in condition 3 contained the main verb **ask** and one contained the main verb **want**, and a main clause answer was actually choice of the subordinate clause subject as opposed to object position as the location of the wh-word. In the English test, subordinate answers for condition 3 were well distributed through the three tokens, but in the Akan test the item with the verb **pɛ** "want" received most of the answers corresponding to the subordinate clause object position; the numbers in parentheses for condition 3 are the percentage of main and subordinate clause answers based on the two tokens with **bisaa** "asked". For the adults, the proportion of subordinate clause answers for condition 3 remains substantially larger for conditions 1 and 2, but for children the difference in proportion of subordinate clause answers for condition 2 versus condition 3 becomes negligible when the item with **pɛ** "want" is removed from the data. For the adult group, the difference in proportion of subordinate clause answers to conditions 2 and 3 is significant both with and without the item with **pɛ** "want" included in the data: including **pɛ** "want",  $t(11) = 6.96, p < .001$ ; excluding **pɛ** "want",  $t(11) = 3.80, p < .01$ , two-tail. For the children, the difference in subordinate clause answers for conditions 2 and 3 approaches significance only with all items in condition 3 included ( $p < .10 > .05$ ).

By consistently locating the gap in the main clause in conditions 1 & 2, the Akan subjects were acting as if they spoke a language that obeys island constraints. In effect, they behaved like the English-speaking subjects in the Goodluck et al. study in showing a strong preference for the top (main) clause as the location of the wh-word. They failed to take advantage of the possibility of pronominal linkage

into a temporal island that the grammar of their language allowed, though they permitted linkage into a complement in the VP. In this question-response test, the Akan subjects behaved as if their language was a language such as English in which the temporal island constraint holds.

#### 6.4 Test 4: Sentence Judgement Task

As has been mentioned before, the presence of pronouns in the Akan version (especially in the animate condition) destroyed the trick of ambiguity between transitive/intransitive present in the English test. Test 4, a "Good/Silly"<sup>6</sup> judgement task was designed to get around this problem. Subjects were the same as those in the previous tests.

##### 6.4.1 Design

It was reasoned that if the Akan subjects judged sentences like (18) as "good" (the English equivalent is ungrammatical, see the discussion of examples 15 & 16 in section 6.3.2) it would be evidence that island constraints do not hold in the language, (i.e. Akan and English are different ).

(18) Den na Kofi kyerew anansesem ansa na ɔredi?

What Foc. K. wrote story before he: wrote

"What did Kofi write a story before he ate?"

In this test, subjects were told that the stories were going to be told to the teddy bear (named Kuuku) who is going to ask questions about the contents afterwards. They (subjects) were told to help the teddy bear, who was trying to

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<sup>6</sup> It was not possible to get a culturally acceptable translation of the word "silly" in particular. The words were translated into Akan as: *eye* "(it is) good" and *enye* "(it is not) good".

speaking Akan, by saying whether his utterances were 'good' (ɛyɛ) or 'not good' (ɛnyɛ). There was a training session which introduced subjects to the task of sentence judgement. Subjects were told to watch carefully as some animal dolls (i.e. a lion, a bear and a monkey) were made to perform certain actions. The experimenter made statements about these actions which were attributed to the teddy bear and subjects were asked whether each statement was 'good' or 'not good'. Subjects were asked to 'correct' those utterances they deemed to be 'not good'. The first four utterances of the training sentences were statements while the next four were questions and they involved correct and incorrect pairings of statements and actions and gapless questions (the Akan equivalent of sentences like: "What is the bear drinking the orange juice?")

After the training sentences, subjects were read the three stories from condition 1 of test 1 (these were the Rabbit, Frog, and Fox stories) and another story (about a boy named Kofi) specially created for this test. The subjects' task was to judge whether questions the teddy bear asked about the stories were 'good' or 'not good'. In the questions, the main clause or subordinate clause contained an unambiguous gap; the other clause contained an NP object which was either a plausible or implausible object NP. There were thus four conditions created by varying the position of the gap and the plausibility of the NP.

Table 6 gives examples of the experimental conditions:

**TABLE 6**  
**Experimental Conditions for Test 4: Sentence Judgement Task**

|                       |   | <u>Predicted Judgement</u> |       |
|-----------------------|---|----------------------------|-------|
| <u>Position of NP</u> |   | <u>Akan English</u>        |       |
| 1.                    | <b>Upstairs Normal</b><br>Den na Kofi kyerew anansesem ansa na ɔredi?"<br>What did Kofi write a story before he ate?          | Good                       | Silly |
| 2.                    | <b>Upstairs Anomalous</b><br>Den na Adanko kance flawa no ansa na ɔredrɔɔ?<br>What did Rabbit read the flower before he drew? | Silly                      | Silly |
| 3.                    | <b>Downstairs Normal</b><br>"Den na Sakraman dii ansa na ɔrekyerew lete no?"<br>What did Fox eat before he wrote the letter?  | Good                       | Good  |
| 4.                    | <b>Downstairs Anomalous</b><br>"Den na Atwere nomee ansa na ɔrekan nsu?"<br>What did Frog drink before he read water?         | Silly                      | Silly |

There was one *before* and one *after* question in each condition; Appendix D gives the complete set of test materials. The critical condition was the first one (i.e., like 18, repeated below as 19). This sentence involves a *wh*-word in pre-IP position, a plausible object in the main clause, and a 'gap' (= a null resumptive pronoun) in object position in a temporal clause:

- (19) “Dɛn na Kofi kyerɛw anansesɛm ansa na ɔredi?”  
What Foc. K. wrote story before he:ate  
“What did Kofi write a story before he ate?”

For this sentence type, the predicted judgement was 'good' in Akan, in contrast to English.

Because the same materials were used in both tests, tests 3 and 4 were given in counterbalanced order to guard against a distortion of the results. Subjects were classified as "passers" if they did not show a pattern of giving more than five "good" or "not good" answers. Ten out of the 17 child subjects and all the 12 adults were considered "passers" in this sense.

#### **6.4.2 Results**

The results of test 2 are presented in Table 7A, 7B, and 7C:

**Table 7A:**  
**Good/Silly Judgement Task**  
**Akan Children (n = 10)**

| <u>Subject</u> | <u>[Upstairs Norm]</u> |               | <u>[Upstairs Anom]</u> |              | <u>[Down. Norm]</u> |              | <u>[Down. Anom]</u> |              |           |           |           |           |           |           |
|----------------|------------------------|---------------|------------------------|--------------|---------------------|--------------|---------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                | <i>Before</i>          | <i>After</i>  | <i>Before</i>          | <i>After</i> | <i>Before</i>       | <i>After</i> | <i>Before</i>       | <i>After</i> |           |           |           |           |           |           |
|                | <u>Kofi</u>            | <u>Rabbit</u> | <u>Rabbit</u>          | <u>Fox</u>   | <u>Fox</u>          | <u>Frog</u>  | <u>Frog</u>         | <u>Kofi</u>  |           |           |           |           |           |           |
|                | <u>G</u>               | <u>S</u>      | <u>G</u>               | <u>S</u>     | <u>G</u>            | <u>S</u>     | <u>G</u>            | <u>S</u>     | <u>G</u>  | <u>S</u>  |           |           |           |           |
| 504            | 1                      | 0             | 1                      | 0            | 0                   | 1            | 0                   | 1            | 1         | 0         | 0         | 1         | 0         | 1         |
| 505            | 1                      | 0             | 1                      | 0            | 0                   | 1            | 0                   | 1            | 1         | 0         | 1         | 0         | 0         | 1         |
| 508            | 1                      | 0             | 0                      | 1            | 1                   | 0            | 1                   | 0            | 0         | 1         | 0         | 1         | 1         | 0         |
| 510            | 1                      | 0             | 1                      | 0            | 1                   | 0            | 0                   | 1            | 0         | 1         | 1         | 0         | 0         | 1         |
| 512            | 0                      | 1             | 1                      | 0            | 0                   | 1            | 0                   | 1            | 1         | 0         | 0         | 1         | 0         | 1         |
| 601            | 1                      | 0             | 1                      | 0            | 0                   | 1            | 1                   | 0            | 1         | 0         | 0         | 1         | 0         | 1         |
| 602            | 1                      | 0             | 1                      | 0            | -                   | -            | 0                   | 1            | 1         | 0         | 1         | 0         | 0         | 1         |
| 603            | 0                      | 1             | 1                      | 0            | 0                   | 1            | 1                   | 0            | 1         | 0         | 0         | 1         | 0         | 1         |
| 604            | 1                      | 0             | 1                      | 0            | 0                   | 1            | 0                   | 1            | 1         | 0         | 1         | 0         | 0         | 1         |
| 605            | 1                      | 0             | 1                      | 0            | 0                   | 1            | 0                   | 1            | 1         | 0         | 0         | 1         | 0         | 1         |
| <b>%age</b>    | <b>80</b>              | <b>20</b>     | <b>90</b>              | <b>10</b>    | <b>20</b>           | <b>70</b>    | <b>30</b>           | <b>70</b>    | <b>80</b> | <b>20</b> | <b>50</b> | <b>50</b> | <b>10</b> | <b>90</b> |

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**Note to Table 7A:** The numeral 1 is used to indicate a positive score (i.e., a tick) for "Good" or "Silly". Child #602 gave a 'don't know' response for one sentence and this is indicated by the dashes.

**Table 7B:**  
**Good/Silly Judgement Task**  
**Akan Adults (n = 12)**

| <u>Subject</u> | <u>[Upstairs Norm]</u> |               | <u>[Upstairs Anom]</u> |              | <u>[Down. Norm]</u> |              | <u>[Down. Anom]</u> |              |            |          |           |          |          |            |          |            |
|----------------|------------------------|---------------|------------------------|--------------|---------------------|--------------|---------------------|--------------|------------|----------|-----------|----------|----------|------------|----------|------------|
|                | <i>Before</i>          | <i>After</i>  | <i>Before</i>          | <i>After</i> | <i>Before</i>       | <i>After</i> | <i>Before</i>       | <i>After</i> |            |          |           |          |          |            |          |            |
|                | <u>Kofi</u>            | <u>Rabbit</u> | <u>Rabbit</u>          | <u>Fox</u>   | <u>Fox</u>          | <u>Frog</u>  | <u>Frog</u>         | <u>Kofi</u>  |            |          |           |          |          |            |          |            |
|                | <u>G</u>               | <u>S</u>      | <u>G</u>               | <u>S</u>     | <u>G</u>            | <u>S</u>     | <u>G</u>            | <u>S</u>     | <u>G</u>   | <u>S</u> |           |          |          |            |          |            |
| A02            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A03            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A04            | 0                      | 1             | 1                      | 0            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A05            | 0                      | 1             | 0                      | 1            | 1                   | 0            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A06            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A07            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A09            | 1                      | 0             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A10            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 0          | 1        | 0         | 1        |          |            |          |            |
| A11            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A12            | 1                      | 0             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A13            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| A14            | 0                      | 1             | 0                      | 1            | 0                   | 1            | 1                   | 0            | 1          | 0        | 1         |          |          |            |          |            |
| <b>%age</b>    | <b>17</b>              | <b>83</b>     | <b>8</b>               | <b>92</b>    | <b>8</b>            | <b>92</b>    | <b>0</b>            | <b>100</b>   | <b>100</b> | <b>0</b> | <b>92</b> | <b>8</b> | <b>0</b> | <b>100</b> | <b>0</b> | <b>100</b> |

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**TABLE 7C**  
**Percentage Responses of the Sentence**  
**Judgement task for Akan**

|              | Upstairs      |               | Upstairs      |              | Downstairs    |              | Downstairs    |              |     |    |    |    |   |     |    |     |
|--------------|---------------|---------------|---------------|--------------|---------------|--------------|---------------|--------------|-----|----|----|----|---|-----|----|-----|
|              | Normal        |               | Anomalous     |              | Normal        |              | Anomalous     |              |     |    |    |    |   |     |    |     |
|              | <i>Before</i> | <i>After</i>  | <i>Before</i> | <i>After</i> | <i>Before</i> | <i>After</i> | <i>Before</i> | <i>After</i> |     |    |    |    |   |     |    |     |
|              | <u>Kofi</u>   | <u>Rabbit</u> | <u>Rabbit</u> | <u>Fox</u>   | <u>Fox</u>    | <u>Frog</u>  | <u>Frog</u>   | <u>Kofi</u>  |     |    |    |    |   |     |    |     |
|              | G             | S             | G             | S            | G             | S            | G             | S            |     |    |    |    |   |     |    |     |
| Child (n=10) | 80            | 20            | 90            | 10           | 20            | 70           | 30            | 70           | 80  | 20 | 50 | 50 | 1 | 90  | 10 | 90  |
| Adult (n=12) | 17            | 83            | 8             | 92           | 8             | 92           | 0             | 100          | 100 | 0  | 92 | 8  | 0 | 100 | 0  | 100 |

As these results show, the Akan children, on the whole, behaved according to the judgements assumed for the sentences. A sentence like (19, see also (1) in Table 6), which is grammatical in Akan, was judged "good" in 80% of cases (see the score for Kofi under the *before* condition) and (20), which is also grammatical was judged "good" in 90% of cases (see the score for Fox under the *before* condition).

- (20) Den na Sakraman dii ansa na ɔrekyerew letɛ no?  
 What Foc. Fox ate before he:wrote letter the  
 "What did Fox eat before he wrote the letter?"

These results did not reflect a general trend towards accepting sentences. For example, the ungrammatical (21) was rejected 90% of cases (see the score for Frog under the *before* condition):

- (21) \*Dɛn na Atwere nomee ansa na ɔrekan nsu?  
What Foc Frog drank before he:read water  
What did Frog drink before she read water?

The children, however, split their response 50-50 for the grammatical sentence in (22):

- (22) Dɛn na Atwere kanee bere a ɔnom nsu wiei no?  
What Foc. Frog read time Rel. he:drank water finish CD  
"What did Frog read after he drank water?"

The adult group, on the other hand, produced surprising results. Although (19) is a grammatical sentence in Akan, they rejected it (i.e., corrected the teddy bear) in 83% of cases (see the score for Kofi under the *before* condition). This did not, however, reflect a general bias toward rejecting sentences. The sentence in (20) was accepted in 100% of judgements. In general, the adult subjects behaved as predicted, except in the critical condition. It appears that they preferred to locate the wh-word in the upstairs clause, and the NP in the downstairs clause rather than the other way round. In other words, they preferred to link the wh-word to the object position of the upstairs verb, causing them to reject perfectly plausible questions with a 'gap' (= resumptive pronoun) in the lower clause.

The adult speakers reported here were all bilingual in English and Akan, as is normal for Akan speakers who have received formal education in Ghana. When

the results of these tests were presented at conferences, the question has been raised as to whether this bilingualism could have affected the Akan adults' performance on the question response as well as the 'good'/'not good' judgement tasks. As check of this a follow-up test (with the same materials as for the original tests) on the question response task was conducted with nine adults with little or no formal education, (hence little or no knowledge of English) in May 1994. The results are highly similar to those for the bilinguals. This proves that knowledge of English was no factor in the Akan adult responses in the original experiment, that is, their performance was not confounded by their knowledge of English grammar.

#### 6.4.3 Summary

The results of the Akan study produce mixed signals especially with regard to the subjects' performance in tests 3 and 4. In test 3, both the children and adults behaved as if their language obeys the temporal island constraint by linking the wh-word to the object position in the top clause in a majority of cases. They made their language look like English in this regard. But in test 4, the children produced results that showed that Akan is different from English by accepting sentences that violate temporal islands. This is the point where they diverged from the adults whose performance in both tests 3 and 4 point to different conclusions. In test 3, they (the adults) behaved as if Akan obeys the temporal island constraint, in test 4 they rejected some sentences that violated these islands. While the children showed sensitivity to the lack of island violations in the language, the adults were behaving as if these constraints held in their language just as it is in English<sup>7</sup>.

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<sup>7</sup> Due to the overwhelming rejection of the critical sentences in test 4, a pencil and paper task was designed to test the judgements assumed for sentences of their type. The test required subjects to rank sentences on a scale of 0-5 in degree of acceptability, where 0 = completely unacceptable and 5 = completely acceptable. The results of this test administered to six adult Akan speakers and its implications for both grammatical theory and processing theory will be reported in the next chapter 6.

The performance of the Akan children raises questions concerning such tests: i) If we assume that their performance in test 4 is indicative of the fact that they have achieved adult-like proficiency in the language by accepting sentences that violated island constraints (according to the predicted judgement), why then did they behave as if the language obeyed island constraints in test 3?, ii) Does the ambiguous question technique actually reveal children's knowledge or sensitivity to island constraints?, and iii) Were the children just giving impulsive responses to the judgement task?

Starting with the last question, it is not likely that children were just giving random or impulsive answers to the sentences. Care was taken to weed out those subjects that appeared to be giving either "good" only or "not good" only responses, thus by this criterion the results of only 10 out of the 17 children were computed. For those who qualified as "passers", they were fairly consistent in accepting the grammatical sentences and rejecting the ungrammatical ones. The only problem was with the *after* version in the Downstairs Normal condition in test 4 for which they gave a 50-50 response. The *after* condition was generally problematic for both child and adult subjects. The reason for this (as explained in Saah and Goodluck, 1993) is that the *after* sentences are less preferable and more complex than the *before* ones. For example, as shown by the adult 'correction' of sentences like (22) which is repeated here for convenience is as (23a) is in (23b):

- (23) a. Den na Atwere kanee bere a ɔnom nsu wiei no?  
 What Foc. Frog read time Rel. he:drank water finish CD  
 "What did Frog read after he drank water?".

- b. Atwere nomm nsu wiei no, den na okanee?  
 Frog drank water finished CD what Foc. he:read  
 "After Frog drank water, what did he read?"

Sentences of the type in (23b) are not ambiguous since the object of the verb in the top (i.e. temporal) clause is already provided. One of the reasons for using the *before* and *after* conditions in the original Goodluck et. al study (as has been stated already), was to guard against the possibility of results that reflected a preference for construing one or the other of the verbs as being transitive. It was this that forced the use of sentences like the one in (23a) instead of the one in (23b) but as the test revealed, this type of sentence was dispreferred by both children and adults. It is reasonable to assume that if a simpler and/or an easily processed version of a sentence exists in a language (e.g. 23b), it is likely for the speakers to accept this version over a more complicated and difficult to process sentence like (23a). Such a sentence may be judged as ungrammatical in a task that involves just a binary "good" and "not good" paradigm.

The first two issues raised above may be recast as: Does the ambiguous question technique actually test children's knowledge of island constraints? If the answer to this question is "yes" as studies such as Otsu (1981) indicate, then what does that say for Akan in which the constraints do not hold but the speakers of which behaved as if their language observes these constraints in the test? It is possible to argue that ambiguous question technique does not necessarily provide information regarding children's sensitivity to island constraints and that these constraints may belong to the competence (grammatical) level of the grammar but may mimic parsing principles. I will take up this issue in chapter 7, where I provide a processing account of these results.

The results of the four tests discussed so far reveal that by age five, children learning Akan have acquired a good understanding of the distribution of null and overt object pronouns and can produce both in-situ as well as sentence-initial wh-questions. In-situ wh-questions and the presence of resumptive pronouns (null and overt), as I have argued in Part I of this thesis, can be taken as a minimal index of the formation of sentence-initial wh-questions without movement, and Akan speakers might be expected to violate syntactic islands in their grammar. But the question-response task appeared to indicate that both the children and adults avoided linking the wh-word inside a temporal clause. The adults also appeared to reject interrogative binding into a temporal clause in the "good-silly" judgement task. The results of the paper and pencil scalar judgement task to be reported in chapter 7, however, indicate that islands can be violated in the language. I assume, therefore, that the results of the question-response task are somehow artifactual and if this is correct, then it will mean that the question-response task is neutral with respect to whether or not children permit wh-linkage into islands. In other words, they do not really tell us whether the children have movement in their grammar or not.

## Chapter 7

### Islands, Completeness and Sentence Processing

#### 7.1 Introduction

Most of the psycholinguistic research in recent times has focused on how such research can prove or disprove the veracity of existing models of grammatical analysis as well as explain what happens when a person processes a sentence. Much of the attention in this line of research has been on the interaction between the grammar and the parser and how this is manifested in the processing of filler-gap associations (Crain & Fodor, 1985; Fodor 1988; Rayner, Carlsen & Frazier, 1983; Ferreira, & Clifton, 1986; Pritchett 1992; Goodluck, Sedivy & Finney 1992; and Goodluck and Finney, 1993). These studies have concentrated on the problems the syntactic processor faces when it anticipates a gap in an incoming sentence to which a *wh*-word/phrase may be associated. For example, Crain and Fodor (1985:96) in an experiment involving self-paced reading, show that the processor appears to have difficulty in processing at the direct object position. The experiment showed that in a sentence like:

- (1) Who did the little girl expect us to sing those stupid French songs  
for —?

reaction time at the direct object position (*us*) was greater. This, they explain to be the result of the processor wrongly construing the *wh*-word as the object of the verb *expect* in the first instance only to realize his/her error on encountering the object *us*.

Grammatical theory in the generative mode has attempted to account for the relationship between a dislocated sentence/clause-initial phrase such as the *wh*-word

in (1) above and the gap in the sentence. Beginning with Ross (1967), it has been shown that there are constraints (termed 'island constraints') that block the association of an antecedent with a gap somewhere in the sentence under certain syntactic conditions. Chomsky (1973, 1981, 1986), discusses these restrictions under a single grammatical principle — Subjacency — which is aided by the Empty Category Principle (ECP), the Doubly Filled COMP Constraint (DFCC) and other such mechanisms. In this study, I will be using the term 'island constraints' to refer to the constraints that are assumed to block the extraction of a constituent from within a relative clause, a wh-complement, and a temporal clause.

What, we may ask, do island constraints tell us about the grammar and the parser? Goodluck and Rochemont (op.cit. p.15-16), for example, conjecture that if island constraints were found to be present early in the processing task and without recourse to discourse and/or lexical factors, then we would have a strong evidence for what has become known as modularity (cf. Ferreira and Clifton 1986; Rayner, Carlson & Frazier 1985; Fodor, J. A. 1983; Fodor, J. D. 1988) in sentence processing which in turn conforms with the modular organization of grammars such as the GB model. The idea is that the syntactic processor can construct a syntactic representation without recourse to nonsyntactic information such as semantic, pragmatic, and/or discourse factors.

The study of island constraints in recent experimental psycholinguistic research has proceeded on two main fronts: i) language acquisition and ii) language processing. In acquisition research, focus has been on when the language learner becomes sensitive to these constraints. Goodluck, Sedivy and Finney, (1992), for example, argue that English-speaking children as young as three show sensitivity to island constraints and that this is indicative of the fact that they use movement in their syntax.

By far the area that has generated most controversy involves issues concerning the processing/parsing of island constraints. These issues involve basically two related but independent questions. The first one is: Do constraints apply immediately in processing or only as a filter over a constructed parse? This question is related to how the syntactic parser handles sentences such as (2) which violate island constraints in English and when these constraints apply during parsing.

- (2) a. \*Who<sub>i</sub> did John ask what hit *e<sub>i</sub>*?  
b. \*Who<sub>i</sub> did John like the woman that married *e<sub>i</sub>*?

(Stowe 1992: 419)

There are two main alternative positions regarding this. On one hand there are those who hold the view that the constraints apply immediately during parsing, and on the other, those who believe that the constraints apply later. Those who belong to the first group, for example, J. A. Fodor (1983) argue that the constraints are built into the parser and that they apply directly in the parsing mechanism. Stowe (1986), despite the limitations of the study, supported this view experimentally. According to this view, because the constraints are built into the gap location routines in structures like those in (2), gaps will never be posited where they would result in ungrammaticality (Stowe, *ibid.*). Proponents of the late application of the constraints such as Freedman and Foster (1987) and Clifton and Frazier (1989) argue that gaps may be located freely by the syntactic parser without any checks on constraints and that the constraints apply later when the gaps are being filled to filter out ungrammatical/unacceptable sentences.

The second question involving the processing of island constraints is: Can Island constraints be explained away as the consequence of principles of parsing?

A recent example of an attempt to answer this question is Pritchett's (1992) *Theta Reanalysis Constraint* (TRC). In a departure from the prevailing practice of assuming the grammatical notion of island constraints and asking whether they apply immediately or later in the parsing process, he tries to bridge the gap between linguistic theory and processing theory by arguing that island constraints may be reducible to the application of independent grammatical principles during processing. This is a view that merits closer examination because if it is correct then it will have some serious implications in processing theory for languages like Akan in which the constraints do not hold. I will return to this issue in the discussion in section 7.4.1.

#### 7.1.1. Background to the Study

At the end of chapter 6, I noted the discrepancy between the results of the question response task (test 3) and the reflective judgement task (test 4) for both child and adult subjects in Akan. Though, as I have established, the grammar of Akan allows the possibility for question-words to be linked to positions inside constructions that are syntactic islands in languages such as English, Akan subjects, both adults and children preferred to link the wh-word to object positions in the top clause most of the time in the ambiguous question task. For example, it is possible to link the wh-word *ɔɛn* "what" in (3) to the object position after the verb *kyerɛw* "write" which is inside a temporal clause as in (3):

- (3) *Ɖɛn na Kofi kan Graphic ansa na ɔrekyerɛw?*  
 What Foc. K. read *Graphic* before he:Prog:write  
 "What did Kofi read the *Graphic* before he wrote?"

The results of the sentence judgement task also appear to suggest that they were preference judgements, not grammaticality judgements. By being asked to say that an utterance is 'good' or 'not good', subjects were not given much choice regarding the degree of acceptability of the sentences, instead they had to make snap binary judgements about these sentences and accept or reject them. A more sophisticated method (for example, a scalar judgement task) would probably have produced a better response. A scalar judgement task would have given subjects the chance to make discrete distinctions between them instead of the outright acceptance or rejection that the binary judgement task forced on them.

In this chapter, I propose to resolve this issue of the disparity in the results of tests 3 and 4 as discussed in chapter 6 by proposing that the preference for the main clause as the locus for the sentence-initial wh-word in the temporal clause condition may be the result of the principles of sentence processing, not of the competence grammar. I will argue, following Goodluck, Finney, and Sedivy (1992) and Goodluck and Finney (1993) that the processor avoids binding into non-complete propositions and that this effect does not reflect sensitivity to islands in the competence grammar.

Since any discussion of the test results rests on the judgement assumed for the structures tested, it became imperative to verify this by designing a more sophisticated test that would require subjects to make discrete judgements about the sentences. A scalar pencil and paper judgement test was therefore designed and conducted for this purpose in March 1993.

## **7.2. Test 5: Scalar Judgement Task**

The goal of this pencil-and-paper test was first to verify the judgements that had been assumed for Akan and then to contrast it with English. It was assumed that if the results came out differently for the two languages, it would be a clear

indication that Akan is indeed different from English. Test 5 was designed to cover a wider range of sentence types and also overcome the limitations of the binary judgement task in test 4. In other words, it was meant to show that under different, testing conditions, Akan fails to manifest island effects while English does.

Test 5 required subjects to judge whether the test sentences were acceptable by ranking them on the scale of 0 - 5 (where 0 = completely unacceptable and 5 = completely acceptable). 'Completely acceptable' was defined to mean 'a possible sentence in Akan (or English) or a sentence that may be used in a given situation'. Such a definition, together with the design of the test, avoided the trap of forcing subjects to categorize sentences into 'good'/not good' as was the case with test 4.

### **7.2.1 Design**

Subjects were played a set of sentences on audio tape (aural stimuli) and asked to judge them in an answer booklet according to the scale provided. After this they were given another set of sentences, this time written (written stimuli), to judge. It was felt that since the Akan speakers do not do much reading and writing in their native language after formal education, they may not be able to read the Akan sentences with the same facility as they do in English or as people who ordinarily read and write their native languages would. It was deemed necessary, therefore, to get them acquainted with the type of test sentences aurally first before they read them.

Table 1 lists the sentence types tested with examples. Each of the first six conditions comprised three subconditions: a declarative version, a topicalized version, and a questioned version. Topicalization and questioning was from the object position, except for condition III, where the subject was extracted<sup>1</sup>. For

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<sup>1</sup> The words "extracted" and "extraction" are used guardedly here. As I have argued in chapter 5, relative clauses, topicalized sentences, questions with clause-initial wh-words are not formed by

each condition, I-VII, nine declarative sentences and their derived forms (topicalized and questioned versions) were constructed. The seventh condition consisted of sentences which contained word order violations, of which nine were constructed.

**Table 1**  
**Sample Materials for Test 3 for Akan and English<sup>2</sup>**

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**a = Declarative;    b = Topicalized;    c = Question**

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**Condition I: Object Extraction out of a Relative clause**

a.    Me huu onipa ko    a    otwaa ahoma no.  
       I    saw person Spec. Rel.    3sg:cut rope    the  
       "I saw the person that cut the rope".

b.    Ahoma no,    me    huu    onipa ko    a    otwaae.  
       Rope the    I    saw    person Sp.    Rel.    3sg:cut  
       "The rope, I saw the person that cut."

c.    Den    na,    wo    huu    onipa ko    a    otwaae?  
       What    Foc.    you    saw    person Sp.    Rel.    3sg:cut  
       "What did you see the person that cut?"

---

movement (a process which the word "extraction" connotes) but by base-generation of the affected constituent in [Spec, CP] and the base-generation of a resumptive pronoun in situ in the complement clause. I will, however, continue to use the word extraction as a blanket term to cover the processes of questioning and/or topicalizing as they occur in both Akan and English.

<sup>2</sup> Where name and other substitutions have been made, the version in parentheses is the one used in the English test.

**Condition II: Object Extraction out of a VP- Complement**

- a. Kofi kää se Ama dii akutu no.  
K. said that A. ate orange the  
“Kofi said that Ama ate the orange”.  
(John said that Mary ate the orange.)
- b. Akutu no, Kofi kää se Ama dii(ε).  
Orange the K. said that A. ate  
“The orange, Kofi said that Ama ate”.  
(The orange, John said that Mary ate.)
- c. Den na Kofi kää se Ama dii(ε)?  
What Foc. K said that A. ate  
“What did Kofi say that Ama ate?”  
(What did John say that Mary ate?)

**Condition III: Subject Extraction out of a VP-complement**

- a. Peter dwene se John beto kaa no.  
P. thinks that J. will:buy car the  
“Peter thinks that John will buy the car.”
- b. John, Peter dwene se obeto kaa no.  
J. P. thinks that he:will:buy car the  
“John, Peter thinks that he will buy the car.”  
(John, Peter thinks that will buy the car.)

- c. Hena na Peter dwene se obeto kaa no?  
 Who Foc. P. thinks that 3sg:will:buy car the  
 "Who does Peter think will buy the car?"  
 (Who does Peter think that will buy the car?)

**Condition IV: Object Extraction out of a Wh-complement**

- a. Obisae se hena na ofaa adaka no.  
 3sg:asked that who Foc. 3sg:took box the  
 "She asked who took the box."
- b. Adaka no, obisae se hena na ofae.  
 Box the 3sg:asked that who Foc. 3sg:took  
 "The box, she asked who took".
- c. Den na obisae se hena na ofae?  
 What Foc. 3sg:asked that who Foc. 3sg:took  
 "What did she ask who took?"

**Condition V: Object Extraction out of Temporal 'before' Clause**

- a. Ama kane *Graphic* ansa na orekyerew lete no.  
 A. read G. before she:wrote letter the  
 "Ama read the *Graphic* before she wrote the letter".  
 (Mary read the *Citizen* before she wrote the letter.)

b.     Lete    no, Ama kanee   *Graphic* ansa na ɔrekyerew.  
 Letter   the A.   read    G.       before she:wrote  
 “The letter, Ama read the *Graphic* before she wrote”.  
 (The letter, Mary read the *Citizen* before she wrote.)

c.     Den     na Ama kanee   *Graphic* ansa na ɔrekyerew?  
 What    Foc. A.   read    G.       before she:wrote  
 “What did Ama read the *Graphic* before she wrote?”  
 (What did Mary read the *Citizen* before she wrote?)

**Condition VI: Object Extraction out of a Temporal 'after' Clause**

a.     Kofi   nom    nsu    bere    a       odii    paanoo no wiei no.  
 K.     drank   water   time    Rel.    he:ate   bread   the finish CD.  
 “Kofi drank water after he ate the bread”.  
 (John drank water after he ate the bread.)

b.     Paanoo no, Kofi nom nsu       bere    a       odi     wiei    no.  
 Bread   the K.   drank water       time    Rel.    he:ate   finish   CD  
 “The bread, Kofi drank water after he ate ”.  
 (The bread, John drank water after he ate.)

c.     Den     na     Kofi   nom nsu       bere a   odi     wiei    no?  
 What    Foc.   K.     drank water       time Rel. he:ate   finish   CD.  
 “What did Kofi drink water after he ate?  
 (What did John drink water after he ate.)

**Condition VII: Violation of Canonical Word Order**

Kwame lete kyerew kɔmaa Ama.

K. letter wrote go give A.

(Bill a letter wrote to Mary.)

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Three questionnaires were made up as follows: each questionnaire contained nine blocks of one token of each of the seven conditions in Table 1. A sentence from condition VII was the seventh sentence in each block. Each questionnaire contained three tokens of each of the subconditions, and were constructed such that only one version of an individual sentence token (declarative, topicalized, question) occurred in a given questionnaire.

No subject received the same version of the questionnaire for both the aural and written stimuli. A subject who received the aural version of questionnaire 1, for example, was given the written version of questionnaire 2 or 3. For the aural task subjects had approximately 10 seconds to make their judgements after hearing the sentence before the next one was presented. Subjects did the written task at their own pace but they were timed. Each sentence was written on a separate page and subjects were not allowed to refer back to sentences they had already judged. After judging the sentences, subjects were asked to go through the questionnaire again to 'correct' those sentences they had rated between 0 and 3 (inclusive) using a different colour of ink<sup>3</sup>.

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<sup>3</sup> Subjects were not told at the beginning that they would be required to 'correct' those sentences they rated below 4. This was to guard against any tendency on the part of subjects to rate sentences high to avoid the trouble of 'correcting' them later.

### **7.2.2 Subjects**

The subjects, different from those who participated in the tests described in chapter 6, comprised six native (adult) speakers of Akan. They were all graduate students with a mean age of 30 studying in the Ottawa area. They had had their undergraduate studies in Ghana and had not been in Ottawa for more than three years. Six native speakers of English, all undergraduate students at the University of Ottawa with a mean age of 23 took the English version of the test. Both the Akan and English subjects had to meet an eligibility requirement that stipulated that one of their parents must be Akan or English.

### **7.2.3 Results**

Table 2A and 2B give the mean acceptability ratings of the sentences for the aural and written tests and Table 3 gives a graphic representation of the scores of the written test for both Akan and English for comparison.

**Table 2A:**  
**Mean Acceptability Ratings for Aural Judgement Test**  
**Akan and English**

|          | <u>I: Relative Clauses</u> |      |      | <u>II: VP Object</u> |      |      | <u>III: VP Subject</u> |      |       |
|----------|----------------------------|------|------|----------------------|------|------|------------------------|------|-------|
|          | Dec                        | Top  | Ques | Dec                  | Top  | Ques | Dec                    | Top  | Ques  |
| Akan     | 5                          | 3.50 | 2.44 | 4.83                 | 3.94 | 4.33 | 4.75                   | 3.50 | 5     |
| English  | 4.22                       | .44  | .33  | 4.83                 | 2.34 | 4.67 | 4.45                   | .33  | 1.94  |
| t(10) =  |                            | 3.04 | 1.97 |                      | 1.14 | .17  |                        | .32  | 4.43  |
| p =      |                            | <.01 | <.05 |                      | ns   | ns   |                        | ns   | <.005 |
| p x 19 = |                            | <.19 | <.95 |                      |      |      |                        |      | <0.95 |

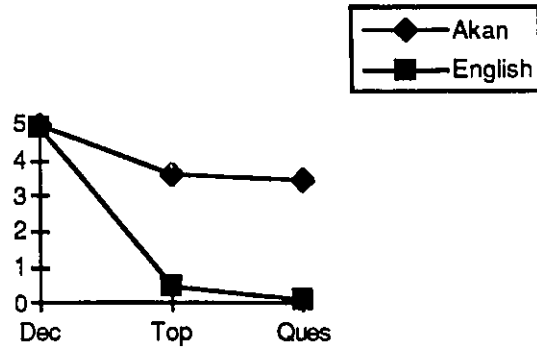
  

|          | <u>IV: Wh-Comp</u> |       |       | <u>V: Temp. "Before"</u> |       |      | <u>VI: Temp. "After" W/O</u> |      |      |     |
|----------|--------------------|-------|-------|--------------------------|-------|------|------------------------------|------|------|-----|
|          | Dec                | Top   | Ques  | Dec                      | Top   | Ques | Dec                          | Top  | Ques |     |
| Akan     | 4.89               | 3     | 2.56  | 5                        | 3.78  | 2.44 | 4.56                         | 1.72 | 1.28 | .66 |
| English  | 4.34               | 1.06  | .22   | 4.78                     | .61   | .50  | 4.95                         | 1.11 | .61  | .69 |
| t(10) =  |                    | 1.92  | 2.40  |                          | 2.31  | 1.33 |                              | .39  | .44  |     |
| p =      |                    | <.025 | <.025 |                          | <.025 | ns   |                              | ns   | ns   |     |
| p x 19 = |                    | <.475 | <.475 |                          | <.475 |      |                              |      | ns   |     |

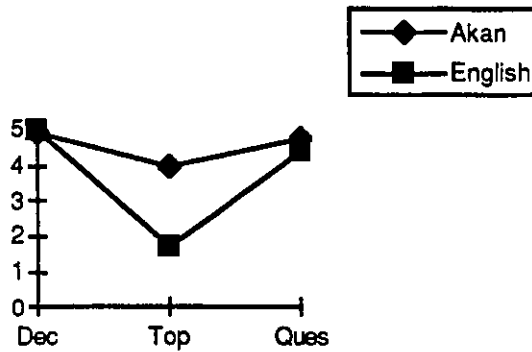
**Table 2B:**  
**Mean Acceptability Ratings for Written Judgement Test**  
**Akan and English**

|          | <u>I: Relative Clauses</u> |        |       | <u>II: VP Object</u>     |      |        | <u>III: VP Subject</u>   |      |      |            |
|----------|----------------------------|--------|-------|--------------------------|------|--------|--------------------------|------|------|------------|
|          | Dec                        | Top    | Ques  | Dec                      | Top  | Ques   | Dec                      | Top  | Ques |            |
| Akan     | 5                          | 3.61   | 3.44  | 4.95                     | 4    | 4.78   | 5                        | 3.50 | 4.92 |            |
| English  | 4.93                       | .45    | .11   | 5                        | 1.72 | 4.44   | 4.89                     | .28  | 2.45 |            |
| t(10) =  |                            | 5.18   | 2.59  |                          | 1.62 | .49    |                          | 1.85 | 1.74 |            |
| p =      |                            | <.0005 | <.029 |                          | <.10 | ns     |                          | <.05 | <.10 |            |
| p x 19 = |                            | <.0095 | <.475 |                          | <1.9 |        |                          | <.95 | <1.9 |            |
|          | <u>IV: Wh-Comp.</u>        |        |       | <u>V: Temp. "Before"</u> |      |        | <u>VI: Temp. "After"</u> |      |      | <u>W/O</u> |
|          | Dec                        | Top    | Ques  | Dec                      | Top  | Ques   | Dec                      | Top  | Ques |            |
| Akan     | 5                          | 3.89   | 3.50  | 4.89                     | 4.16 | 4.28   | 4.72                     | 2.28 | 1.72 | .70        |
| English  | 4.33                       | 1.56   | .11   | 5                        | 1.28 | .33    | 4.83                     | 1.28 | .22  | .85        |
| t(10) =  |                            | 1.73   | 2.61  |                          | 2.11 | 5.64   |                          | .70  | 1.32 |            |
| p =      |                            | <.10   | <.025 |                          | <.05 | <.0005 |                          | ns   | ns   |            |
| p x 19 = |                            | <1.9   | <.475 |                          | <.95 | <.0095 |                          |      | ns   |            |

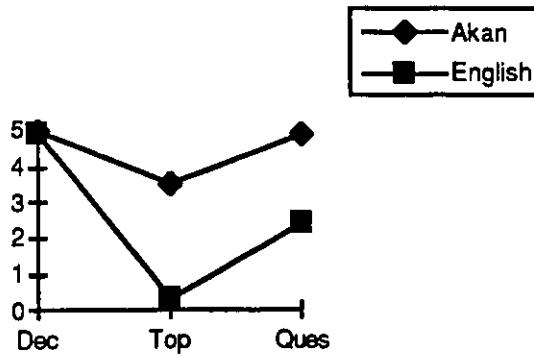
**Table 3:**  
**Graphs Showing Mean Acceptability Ratings**  
**for the Written Judgement Task**



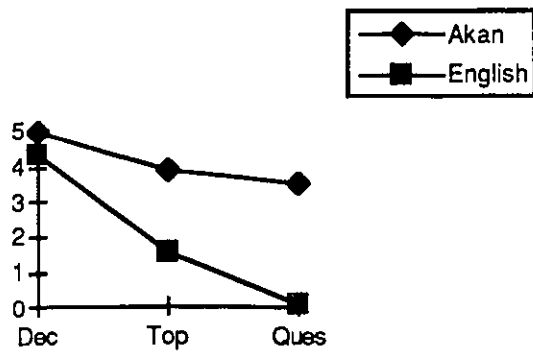
**I: Object Extraction out of a Relative Clause**



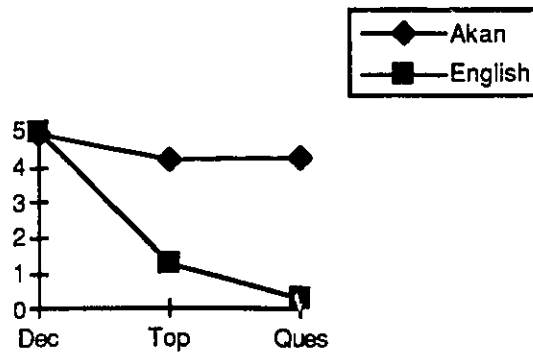
**II: Object Extraction out of a VP-Complement**



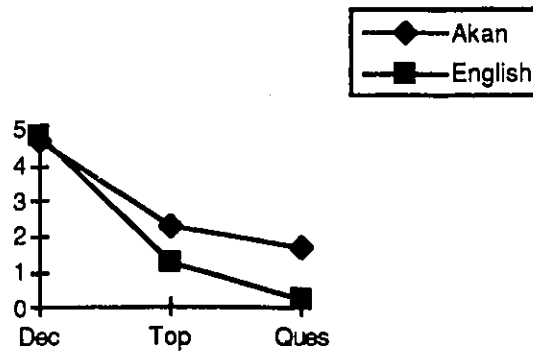
**III: Subject Extraction out of a VP-Complement**



**IV: Object Extraction out of a Wh-Complement**



**V: Object Extraction out of a Temporal "Before" Clause**



**VI: Object Extraction out of a Temporal "After" Clause**

It must be noted that for declarative sentences, in both the aural and written stimuli, the Akan/English mean acceptability ratings were roughly the same for the first six experimental conditions as shown in Tables 4A and 4B. This can be taken to mean that the notions of 'grammaticality' are consistent across the two groups of speakers. The difference between the two languages emerges with judgement of structures involving extractions.

**Table 4A:**

**Mean Acceptability Ratings for Aural Stimuli: Declaratives**

| Condition | <i>I</i> | <i>II</i> | <i>III</i> | <i>IV</i> | <i>V</i> | <i>VI</i> | <i>Total</i> |
|-----------|----------|-----------|------------|-----------|----------|-----------|--------------|
| Akan      | 5        | 4.83      | 4.75       | 4.89      | 5        | 4.56      | 29.03/30     |
| English   | 4.22     | 4.83      | 4.45       | 4.34      | 4.78     | 4.95      | 27.57/30     |

**Table 4B:**

**Mean Acceptability Ratings for Written Stimuli: Declaratives**

| Condition | <i>I</i> | <i>II</i> | <i>III</i> | <i>IV</i> | <i>V</i> | <i>VI</i> | <i>Total</i> |
|-----------|----------|-----------|------------|-----------|----------|-----------|--------------|
| Akan      | 5        | 4.95      | 5          | 5         | 4.89     | 4.72      | 29.56/30     |
| English   | 4.93     | 5         | 4.89       | 4.33      | 5        | 4.83      | 28.98/30     |

With the 'extraction' structures, the sentences in the written version appears to have been rated higher overall in Akan than those in the aural version while the opposite was the case for English. For example, the Akan subjects rated extractions from relative clauses with a mean of 3.45 and 2.44 (topicalized and questioned) for the oral judgement; and 3.61 and 3.44 for the written. The English subjects rated them .44 and .33 ( oral) and .44 and .11 (written). In the written version, extraction from temporal clauses was judged highly acceptable by the Akan subjects; the mean rating was 4.28 for questions such as (4):

- (4) Dɛn na Ama kanee *Graphic* ansa na ɔrekyerɛw?  
 What Foc. A. read *Graphic* before she:wrote  
 "What did Ama read the *Graphic* before she wrote?"

The English subjects, on the other hand, rated its equivalent .33. In the aural test, this type of sentence was scored 2.44 (Akan) and .50 (English). This discrepancy in the aural and written scores may be due to the fact that subjects had very little time (about 10 seconds) to reflect on the sentences before ranking them while they did the written task according to their own pace. It appears that as the Akan speakers became used to the sentences, they found them to be more acceptable, while the English speakers found them to be unacceptable as they got used to them.

It is not clear why habituation would produce such opposite effects in Akan and English. The English subjects on the whole took a shorter time on the written test than the Akan speakers, spending an average of 10 minutes while the Akan subjects appeared to ponder longer, spending an average of 15 minutes on the 63 sentences. This may be taken as the Akan speakers willingness to ponder carefully over the sentences before judging them or it may also be a confirmation of my initial suspicion that they do not do much reading in Akan after their elementary school education. During informal discussions I had with some of the Akan subjects, they appeared to find some of the sentences they had rated 3 and below more acceptable when a discourse context was created for them<sup>4</sup>. This seems to suggest that

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<sup>4</sup> One subject, for example, consistently rated topicalizations a 4 . When asked about this, he said they were not 'normal'. He preferred the declaratives. Though not required to, he 'corrected' the sentence in (i) as either (ii) or (iii)

- i. Aduane no, me mpe se Ama di. (see Appendix E, condition II, 8b)  
 Food the, I Neg:want that A. eat  
 "The food, I don't want Ama to eat it"
- ii. Me mpe se Ama di aduane no.

habituation and context are important in the processing of novel and difficult to process sentences.

There is a marked difference in the way the two types of temporal clauses (*before* and *after*) were ranked. The *before* clauses were ranked higher than the *after* clauses in Akan. In the written test, the mean rating was 4.89 (Dec), 4.16 (Top), and 4.28 (Q) for the *before* condition in Akan as compared to 4.72, 2.28, and 1.72 for the *after* condition. But there was not much difference in the English results which were 5, 1.28, and .33 for the *before* condition and 4.83, 1.28, and .22 for the *after* condition. English does not allow extraction from temporal clauses and this is reflected in the subjects' judgement of these structures and the lack of significant difference between the two conditions — '*before*' and '*after*'. The Akan subjects' preference of the '*before*' clauses over the '*after*' clauses, as hinted at in section 6.4.3 of chapter 6, has to do with the complexity of the structure of the latter. For example, (4) repeated here as (5a) involves the embedding of the temporal clause by the use of *ansa na* "before". It has the structure in (5b):

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I Neg:like that A. eat food the  
"I don't want Ama to eat the food."

- iii. Aduane no koraa, me mpe se Ama di.  
Food the KORAA I Neg: want A. eat  
"I don't Ama to eat the food"

The topicalized sentence was acceptable to him if it occurred with the emphatic word *koraa*. When an appropriate context was created for the utterance of (i) he agreed that it was perfectly acceptable and that he would not have scored the sentence a 4 if he had had such information earlier on; he would have judged the sentence a 5. This indicates that context may be important in the judging or processing a sentence. Juana Liceras (p. c.), however, tells me that this is not always the case.

- (5) a. Den na Ama kanee *Graphic* ansa na  
 What Foc. A. read *Graphic* before  
 ɔrekyerɛw?  
 she:wrote  
 “What did Ama read the *Graphic* before she wrote (it)?”
- b. [CP Den [C' na [IP Ama [VP kanee *Graphic* [AdvP ansa na [IP  
 ɔrekyerɛw?]]]]]]

An *after* sentence like (6a) on the other hand has the structure in (6b):

- (6) a. Den na Bill kan nuuspepa bere a  
 What Foc. B. read newspaper time Rel.  
 ɔnomm wiei no?  
 he:drink finish CD  
 “What did Bill read a newspaper after he drank?”
- b. [CP Den [C' na [IP Bill [VP kan newspaper [AdvP bere [Adv' a  
 [IP ɔnomm [Adv wiei no?]]]]]]]]

The sentence involves the use of a relative clause to express the *after* temporal adjunct as can be seen in the English gloss of (6a)<sup>5</sup>. This structure

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<sup>5</sup> An anonymous reviewer of *The Linguistic Review* points out to me that this is consistent with the fact that in many Kwa languages (e.g. Yoruba), such temporal adjuncts are relative clauses. S/he also points out that even in languages with resumptive pronoun strategies, it is often the case that relative clauses remain stronger islands than other types of islands.

involves more nodes than the *before* sentence and this may be the source of the processing difficulty that speakers have with it and its low rate of acceptability.

From their 'corrections' most of the subjects preferred structures in which the *after* clause is in sentence-initial position followed by the question as in (7). This structure is not ambiguous as the question word can only be linked to the direct object position in the lower clause.

- (7) Bill nomm kɔfe        wiei no,    dɛn na    okanee?  
Bill drank coffee      finish CD,    what Foc. he: read  
"After he drank coffee, what did Bill read?"

The Akan *after* clauses in general pattern like relative clauses with respect to acceptability ratings. Extraction from relative clauses and the temporal *after* adjuncts were generally given lower scores than the other experimental conditions in the test as the following Tables 5A and 5B show. The Akan results seems to support the view (see Tellier 1991) that even in languages with resumptive pronoun strategies, relative clauses remain stronger islands than other islands.

Table 5A

Comparison of Mean Acceptability Ratings for Akan Extractions:

|         | <u>Questions</u> |              |            |           |           |               |
|---------|------------------|--------------|------------|-----------|-----------|---------------|
|         | I                | VI           | II         | III       | IV        | V             |
|         | <u>RC</u>        | <u>after</u> | <u>OBJ</u> | <u>SU</u> | <u>wh</u> | <u>before</u> |
| Aural   | 2.44             | 1.28         | 4.33       | 5         | 2.56      | 2.44          |
| Written | 3.44             | 1.72         | 4.78       | 4.92      | 3.5       | 4.28          |

Table 5B

Comparison of Mean Acceptability Ratings for Akan Extractions:

|         | <u>Topicalizations</u> |              |            |           |           |               |
|---------|------------------------|--------------|------------|-----------|-----------|---------------|
|         | I                      | VI           | II         | III       | IV        | V             |
|         | <u>RC</u>              | <u>after</u> | <u>OBJ</u> | <u>SU</u> | <u>wh</u> | <u>before</u> |
| Aural   | 3.5                    | 1.72         | 3.94       | 3.5       | 3         | 3.78          |
| Written | 3.61                   | 2.28         | 4          | 3.5       | 3.89      | 4.16          |

Other conditions in test 5 show that the Akan subjects' acceptance of extraction from a temporal clause was not a reflex of an overall tendency to accept sentences. For example, grossly ungrammatical sentences (word order violations) received mean ratings of less than 1 for both languages — .47 for Akan and .85 for English. Another reason to believe that the Akan speakers were not simply more inclined to accept sentences could be found in how they rated extractions from subject position (Condition III). Extraction from such a position requires the complementizer to be present, contrary to English, where it must be omitted. It was intended to omit the complementizer in the Akan materials to provide a further sentence type for which the predicted judgement for Akan was ungrammatical. By

error, however, the complementizer was kept in two of the three tokens. The scores in Tables 2A and 2B are based on the two tokens where the complementizer was present. The score for the one token where the complementizer was absent was 2, 1, and 1.5 (aural) and 2.85, 1.67, and .67 (written) in Akan, showing that the subjects were not accepting sentences at random.

The t-values for the difference in means for Akan and English are given in the third row of Tables 2A and 2B. Since there was a predicted direction of difference for the topicalized and question comparisons, one-tail probabilities are reported. As a conservative measure, the probabilities have been multiplied by 19 (the total number of conditions in each test). As shown in the last row of Tables 2A and 2B. The scores for extraction from relative clauses (written test), VP-Complement (subject extraction; aural test) and temporal clause (*before* condition; written test) differ significantly, with the probabilities multiplied by 19.

The results clearly show a higher degree of acceptability of sentences involving extraction from relative clauses, VP complements, Wh-complements, and temporal clauses in Akan than in English and confirm that the two languages indeed differ. In other words, island constraints do hold in English but not in Akan. This poses the problem of how to explain the similarity in the performance of speakers of the two languages in test 3 (and 4) and the source of island effects in language processing.

It must be noted that the adult Akan speakers in these tests were all fluent in English, as is normal for all Ghanaians with formal education. Whenever the results have been presented (with Helen Goodluck) at conferences, we have been asked whether this knowledge of English could have affected the Akan speakers' performance on the question-response as well as the 'Good'/'Not Good' sentence judgement tasks. As a check on this, the question-response task was given to nine individuals in a rural area of Ghana who had no knowledge of English. The results

are highly similar to those for the subjects who knew English. The only discernible difference for the two groups of subjects was that for one of the three items in condition 2 in which 7/9 speakers who did not know English gave a downstairs response as compared to 0/9 and three out of nine downstairs responses to the remaining two items in condition 2. I have no explanation for this finding with respect to the one item for the non-English speakers. However, it is interesting to note that this item caused the non-English speakers more trouble than the other two items on the follow-up question, with only 0/9 correct responses on the follow-up of this item, compared to 5/9 and 3/9 correct on the follow-up for the other two items.

### 7.3 Discussion

The results of the question response task (test 3) and the binary judgement task (test 4) on one hand, and the scalar judgement task (test 5) on the other, pose this problem: the Akan speakers acted in tests 3 and 4 as if the temporal island constraint holds in their language, while the results test 5 (taken by adults only)<sup>6</sup> indicate that extraction is possible from a temporal clause. To reconcile this conflict, I suggest, following Saah and Goodluck (1993, forthcoming in *The Linguistic Review*), that temporal clauses are parsing islands in Akan, but not competence islands. The results of tests 3 and 4 which involve quick, non-reflective answers reflect the operation of the sentence processor, whereas the results of the scalar judgement task reflects the competence grammar of Akan. A parsing island, as stated in Saah and Goodluck (op. cit.) is a position in the sentence that is not considered as a potential location for a wh-word during the course of sentence

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<sup>6</sup> It was not possible to get child subjects fluent enough in Akan in the Ottawa-Carleton area to take part in the scalar judgement test. Besides that, the task proved hard enough for the adults and I was not sure of how I could get child subjects to make the fine grained distinction in grammaticality that the test required. Most of the children who took part in 'Good'/Not Good' judgement task had difficulties with this kind of task.

processing. Such parsing islands may remain opaque throughout the processing of a sentence or may only be temporarily disregarded as positions for the wh-word. They may or may not correspond to competence islands (positions from which the competence grammar of a language blocks extraction).

It could be argued that the results of test 3, for example was the consequence of a lexical preference — the preference for making one particular verb transitive. But this view is not tenable because as the *before/after* manipulation showed for both Akan and English, the main clause effect is independent of the predicates in the main and subordinate clauses. We must therefore look elsewhere for a solution to the problem. In the next sections, I discuss two current proposals concerning the parsing mechanism for identifying positions for a displaced constituent such a question word, showing how they may explain the status of temporal clauses as parsing islands.

### 7.3.1 The Theta Reanalysis Constraint (Pritchett, 1992)

Pritchett (1992) has argued that island constraints can be explained as a consequence of principles of sentence processing. On this analysis, entry into a temporal clause for the purposes of binding a wh-word is blocked by his *Theta Reanalysis Constraint* (TRC) which he formulates as:

(8) **Theta Reanalysis Constraint (TRC)**

- a. Syntactic reanalysis which reinterprets a  $\theta$ -marked constituent as outside of its current  $\theta$ -domain renders a sentence unacceptable.
- b.  $\theta$ -domain:  $\alpha$  is in the  $\gamma$   $\theta$ -domain of  $\beta$  iff  $\alpha$  receives the  $\gamma$   $\theta$ -role from  $\beta$  or by a constituent which receives the  $\gamma$   $\theta$ -role from  $\beta$ .

(Pritchett, 1992: 326, ex. 4 & 5)

The TRC claims that “islandhood” (i.e parsing islandhood) of temporals comes about in the following way: The processor seeks a position for the Wh-word in the main clause; if this is incorrect, then reanalysis is permitted only if the reanalysis places the gap in a position that is in the theta-domain of the main clause verb (this results in reanalysis being possible in the case of complements but not temporals).

Pritchett’s analysis accounts for the unacceptability of a sentence like (9)

(9) \*What<sub>i</sub> did you eat  $\emptyset$  after John ruined  $e_i$ .

as follows: First, a local attachment is made of the wh-word immediately following the encounter of the verb *eat* (as it has a thematic role to assign). This creates a chain that can receive a theta-role and case locally to satisfy the theta-criterion and Case theory with respect to that chain. After the verb *ruin* is encountered, reanalysis becomes necessary because the verb is obligatorily transitive. As a result of this, the variable that is bound by the wh-operator must be reanalyzed as within the internal theta-domain of the lower verb (ibid. p. 335). Since this new location of the gap is no longer in the internal domain of the verb *eat* and does not receive the internal theta-role nor is it dominated by any constituent that receives that role, the TRC is violated, thereby correctly predicting that the sentence is unacceptable.

This processing-based analysis Pritchett gives for the temporal island constraint in English has problems as he himself admits. One seemingly undesirable consequence of this account is that it must be that the processor seeks a position after the main clause verb even when that verb is intransitive as in :

(10) \*What did John sleep before eating?

In other words, the gap-location mechanism must initially operate in a manner blind to the subcategorical properties of the verb — looking initially only at whether a lexical item is of the category of proper governor. Although this may seem counterintuitive and inefficient as a parsing procedure, there is some evidence to support it. Nicol and Swinney (1989) report a cross-modal priming study in which the position following an intransitive verb activated priming for a *wh*-word. This is contrary to Clifton and Frazier's (1989) study which reports a difference between transitive and intransitive verbs in initiating gap location. Their task, however, was off-line and this difference may follow from a later clean-up of candidate trace positions.

Pritchett's analysis appears to generalize to Akan but it cannot adequately explain the comprehension of long distance dependencies in Akan, a language in which linkage of a question word to a position inside a temporal island is grammatical, according to my intuitions and the results of test 5 (the scalar sentence judgement task). It must be noted that Pritchett does not discuss Akan nor other languages such as the Scandinavian languages (e.g., Swedish, Danish and Norwegian) which have been shown to violate one island constraint or other (cf. Allwood, 1982; Engdahl 1982) even though he states that his theta-attachment model is intended to be universal and capable of accounting for a variety of known cross-linguistic garden path effects (Pritchett, *ibid.* p. 330). While the TRC can be maintained as a principle of processing that may mimic the effects of island constraints in the course of sentence processing, it cannot replace those constraints. By locating the *wh*-word in the main clause in the majority of cases in conditions 1 and 2 of test 3, the Akan subjects were acting as if they were obeying the island constraints, but the language allows violations of these constraints. For example, to the question (Condition 1, story 1):

- (11) Den na Adanko kanee ansa na ɔredrɔw?  
 What Foc. Rabbit read before he:drew  
 “What did Rabbit read before he drew?”

subjects answered **nuspepa** “newspaper”. This means that they made the local attachment of the wh-word after the main clause verb **kan** “read” and not the subordinate clause verb **drɔw** “draw” and it may appear to be the result of the TRC. It must be noted however that if the subjects had located the wh-word after the subordinate verb it would have resulted in an acceptable sentence in Akan. That is, both (12a & b) are acceptable. Thus reanalysis may not be necessary when the processor encounters the subordinate clause verb after locating the wh-word in the main clause.

- (12) a. Den na Adanko kanee nuspepa ansa na ɔredrɔw?  
 What Foc. Rabbit read newspaper before he:drew  
 “What did Rabbit read a newspaper before he drew?”
- b. Den na Adanko kanee ansa na ɔredrɔw flawa?  
 What Foc. Rabbit read before he:drew flower  
 “What did Rabbit read before he drew a flower?”

The results of tests 3 and 4 in Akan on one hand, and of test 5 on the other, show a dissociation of performance (on the first two tests) from reflective judgement on the grammaticality of sentences in Akan and this argues for the irreducibly grammatical (competence) nature of island constraints in languages such as English in which the constraints hold. In his study of an aphasic individual with severe comprehension deficit, Saddy (1992) showed that the computation of

thematic structure is independent of a recognition of island violations. The fact that the Akan speakers in the first two tests behaved as if they were speaking a language like English where island constraints hold while in the reflective judgement, they showed that sentences that may be considered ungrammatical in English (because they violate islandhood) were acceptable in Akan seems to suggest that they were behaving differently in the two tasks. It also suggests that there is a clear-cut distinction between the subjects' competence grammar and their performance and that island constraints seem not to be the factor influencing the choices the Akan subjects made. The TRC, therefore, may be seen as a processing constraint but not as a grammatical constraint and it cannot shed light on how the Akan subjects behaved in the tests whose results are under discussion here.

### **7.3.2 The Completeness Constraints on Binding**

The preference of the Akan subjects for main clause answers in the temporal clause conditions in the question response task (test 3) may be seen to be arising from independently motivated principles of sentence processing and one analysis (of the comprehension of sentences with long distance dependencies) that seems to hold the key to our understanding of the Akan data is the propositional *completeness hypothesis* (CH) discussed by Goodluck, Sedivy and Finney (1992); Goodluck and Finney (1993); and also reviewed in Saah and Goodluck (1993), and Goodluck, Kudra, and Saah (1994). The CH claims that question words are linked to potential locations only where the result is a complete proposition. A complete proposition is defined as a "well-formed syntactic structure, obedient to any restrictions imposed by the lexical items it contains, that translates into a closed sentence at the level of semantic interpretation" (Goodluck, Sedivy and Finney 1992:2). The explanatory power of the CH is demonstrated by the following sentence:

- (13) The teacher asked what the team laughed about Greg's fumbling the ball for.

Goodluck, Sedivy and Foley point out that reaction times are not elevated relative to a non-wh control at the position filled by *the team* in (13). The absence of this gap non-location effect is explained as due to the fact that "The teacher asked what" is not a complete sentence.

Goodluck and Finney (1993) postulate the *Completeness Condition on Binding* (CCB) which they consider to be a descriptive account of the conflicting results in the study reported in Goodluck, Sedivy and Finney (1992). This constraint is formulated as:

**(14) Completeness Constraints on Binding**

Gaps are located at all potential positions in the incoming string  
but are (in the normal case) bound to the antecedent only at positions  
that are potential ends of sentences.

(Goodluck, Sedivy, and Finney, 1992: .2)

The basic idea behind this constraint is that the processor chooses as the location for the wh-element the first position in the sentence that will result in a complete proposition. The response of the Akan (and English) subjects in test 3 may be explained in terms of the CCB which proposes that: i) all proper governors are located in the incoming string; ii) binding of a filler to a trace takes place only when the resultant structure is a complete sentence at the level of LF, with all lexical specifications met. The CCB intuitively accounts for the tendency to bind a filler to the main clause object position in test 3, since binding to that position will result in

a complete proposition/sentence. In other words, it explains why the syntactic processor would bind the *wh*-word to the object position in the main clause in the examples in (12) — the result is a complete proposition/sentence.

The notion of 'complete proposition' must be defined to exclude temporal clauses from the first complete proposition while including complements to a VP in the first complete proposition. While the former is true, for the latter to be true, the processing mechanism must compute completeness with reference to the argument structure of the main verb. For example, the first clause of the questions for the animate temporal condition and the first clause of the questions for the VP complement condition in test 3, are well-formed complete propositions in both Akan and English in the stories used:

(15) a. Hena na ɔsono bisaa no?  
Who Foc Elephant asked 3sg

b. Who did the elephant ask?

(cf. Test 3 Condition. 2, Story 3))

(16) a. Hena na Agyinamoa bisaa no?  
Who Foc. Cat ask 3sg.

b. Who did the cat ask?

(cf. Test 3, Cond. 3, Story 2)

As Goodluck, Kudra and Saah (op. cit.) point out, it must be the case that the processor looks ahead to the first word of the temporal clause/complement before deciding whether a complete proposition is to be formed and that a complement to

the VP is enough to block completeness of the main clause. These assumptions are plausible in view of the fact the sentence boundaries which are generally coextensive with complete propositions have been known to induce interpretive closure processes (cf. Caplan 1972). The preference for main clause interpretation of the question word extends to questions with VP complements for some speakers. In the question response task (test 3), four Akan adults and three children gave two or three main clause answers to the VP complement questions.

It appears that the notion of complete proposition is stronger than the other factors that might be considered when deciding where to link or bind the *wh*-word. The result of this, especially for the Akan experiment, is that both the child and adult speakers did not utilize the option that would have allowed them to locate the *wh*-word in the lower clause in their interpretation of questions such as (17a, b):

- (17) a. Hena na ɔsono        bisaa no ansa na ɔreboa no?  
 Who Foc Elephant    asked 3sg before he helped 3sg  
 "Who did Elephant ask him before he helped him?"

(cf. Test 3, condition 2, Story 3)

- b. Hena na Agyinamoa    bisaa no    se wɔmboa no?  
 Who Foc Cat            asked 3sg that they help 3sg  
 "Who did Cat ask him/her that they help him/her?"

(cf. Test 3, Condition 3, Story 2)

The adults also rejected questions such as the one in (18) in the binary 'good'/not good' judgement task:

- (18) Den na Kofi kyerɛw anansesem ansa na ɔredi?  
 What Foc. K. wrote story before he:ate *pro*  
 "What did Kofi write a story before he:ate?"

Failure to link the wh-word to a position inside a temporal clause, therefore, may not be seen an indicative of the absence of such a possibility in either Akan- or English-speaking children's grammar. It can be argued, following Goodluck, Kudra, and Saah (op. cit.), that contrary to the findings of the Goodluck, Sedivy, and Foley (1989) and Goodluck, Finney, and Sedivy (1992) studies, the experiments on English (which were adapted for the Akan study) do not necessarily provide evidence that children have arrived at the English setting for the movement parameter in syntax; they are rather neutral on the issue. And that is to say that the question response task may not necessarily be a good technique for the evaluation of sensitivity to the temporal island constraint because processing effects are confounded with the effects of syntactic islandhood.

Throughout this study, it has been assumed that there is a consistent difference between English and Akan in that while, i) the former has gaps the latter does not; it has resumptive pronouns instead, and following from this, ii) while the former has syntactic wh-movement that obeys island constraints, the latter has no movement and does not respect such constraints. There may be a slight oversimplification in this since English has been shown to have a resumptive pronoun strategy (cf. Sells, 1984; Erstechik-Shir, 1992). The difference, however, is that the resumptive pronoun strategy is restricted to relative clauses in English, while in Akan, they are found in a wide range of construction types. Secondly, while resumptive pronouns in English only get better with several clauses intervening between them and their antecedents, this is not so in Akan. It must be

pointed out here that the types of sentences involved in both the question response and sentence judgement tasks in tests 3 and 5 were all bi-clausal in nature and that English permitted only gaps in these structures while Akan had resumptive pronouns in them.

The presence of resumptive pronouns in the Akan and gaps in the English structures, raises the issue of the different processing procedures for gaps and resumptive pronouns and how they affect the analysis assumed here. It has been proposed in the literature on English (for example, Erteschik-Shir, 1992), that gaps are processed differently from resumptive pronouns. While gaps must be retrieved, resumptive pronouns trigger a search for antecedents. It is not possible to provide a full discussion of the different processing strategies for gaps and resumptive pronouns here. However, the similarity in the results of test 3 (for English and Akan suggests that speakers of languages without successive cyclic movement and which employ resumptive pronouns across the board (such as Akan), use the same processing procedure for resumptive pronouns as speakers of successive cyclic languages for gaps.

#### **7.4 On Learnability**

The processing effects observed in the Akan tests suggest that the processor effectively denies the speaker of Akan access to some interpretations of the input that the grammar of his language permits. A language learner using the sentence processing mechanism as I have characterized it can be expected to be conservative in its analysis of the sentences it is exposed to. That is, the effect of the processor will be to direct the learner to a narrow range of interpretations, and hence potentially prevent the learner from hypothesizing an overly permissive grammar. Thus the operation of the processor, in this instance, may represent the psychological reality behind the frequently discussed idea that the learner posits

grammars that correspond to the most restrictive interpretation of the input - the *subset principle* (Berwick, 1985).

## 7.5 Conclusion

The similarity in the results of the Akan and English studies reported here, especially for test 3, appears to be saying that both languages obey island constraints but the results of test 5 have shown that the two languages differ. That is, the constraints hold in English but not in Akan. This poses a serious problem for processing and/or grammatical theory, something which grammarians need to keep in mind. The study shows that island constraints may be mimicked by processing principles but the constraints may not be reducible to principles of sentence processing. In other words, a distinction must be made between parsing islands and competence islands. While the two may not be coextensive, they may overlap to a large extent and that a native speaker's intuitions of an island may result not only from the principles of grammar alone, but by both grammatical and processing principles acting in concert (as in a language such as English) or processing principles alone (as in Akan).

## APPENDIX A

### Materials for Production Test 1

- |                                       |  |
|---------------------------------------|--|
| 1. Gyata rekan nwoma.                 | "Lion is reading a book."                  |
| Den na Gyata reye nwoma no?           | "What is Lion doing to the book?"          |
| 2. Sisi gyina nwoma no so.            | "Bear is standing on the book".            |
| Den na Sisi reye nwoma no?            | "What is Bear doing to the book?"          |
| 3. Gyata de kwadu no reto ɔpon no so. | "Lion is putting the banana on the table." |
| Den na Gyata reye kwadu no?           | "What is Lion doing to the banana?"        |
| 4. ɔkwaku redi kwadu.                 | "Monkey is eating a banana."               |
| Den na ɔkwaku reye kwadu no?          | "What is Monkey doing to the banana?"      |
| 5. Sisi renom akutu nsu.              | "Bear is drinking orange juice."           |
| Den na Sisi reye akutu nsu no?        | "What is Bear doing to the orange juice?"  |
| 6. Gyata repia akutu nsu no.          | "Lion is pushing the orange juice."        |
| Den na Gyata reye akutu nsu no?       | "What is Lion doing to the orange juice?"  |
| 7. Gyata retaa Sisi.                  | "Lion is chasing Bear."                    |
| Den na Gyata reye Sisi?               | "What is Lion doing to the Bear?"          |
| 8. ɔkwaku gyina Sisi so.              | "Monkey is standing on Bear."              |
| Den na ɔkwaku reye Sisi?              | "What is Monkey doing to Bear?"            |

- |                           |                                 |
|---------------------------|---------------------------------|
| 9. ɔkwaku repia Gyata.    | "Monkey is pushing Lion."       |
| Den na ɔkwaku reye Gyata? | "What is Monkey doing to Lion?" |
| 10. Sisi retiti Gyata.    | "Bear is scratching Lion".      |
| Den na Sisi reye Gyata?   | "What is Bear doing to Lion?"   |
| 11. Sisi rekyia ɔkwaku.   | "Bear is greeting Monkey".      |
| Den na Sisi reye ɔkwaku?  | "What is Bear doing to Monkey?" |
| 12. Gyata reba ɔkwaku.    | "Lion is hitting Monkey".       |
| Den na Gyata reye ɔkwaku? | "What is Lion doing to Monkey?" |

## APPENDIX B

### Production Test 2: Questioning

Mepe se yedi agoro bi. Se meka asem bi se: Metee akutu a, mepe se wobisa me se: "Kofi , wotee no bere ben?"

"I want us to play a game. If I say: "I plucked an orange", I want you to ask me: "Kofi you plucked it when?"

1. Metoo nwoma bi. "I bought a book".  
Bisa me bere a metoo nwoma no: "Ask me when I bought the book."
2. Metoo agyinoaba bi. "I bought a kitten".  
Bisa me bere a metoo agyinoaba no: "Ask me when I bought the kitten".
3. Mehuu me nuabaa ketewa no. "I saw my little sister".  
Bisa me bere a mehuu me nuabaa ketewa no: "Ask me when I saw my little sister".
4. Me huu me mpaboa no. "I saw my sandals".  
Bisa me bere a mehuu me mpaboa no: "Ask me when I saw my sandals".
5. Memenee me pills no. "I swallowed my pills".  
Bisa me bere a memenee me pills no: "Ask me when I swallowed my pills".
6. Memenee nwansena. "I swallowed a fly".  
Bisa me bere a memenee nwansena no: "Ask me when I swallowed the fly".

## Appendix C

### Materials for Test 3: Question-Response Task

#### Condition 1

##### Story 1:

Adanko ani gyee awiabere no. "Rabbit was very happy that afternoon".

Nea edi kan no, ɔkan nuuspepa. "First, he read a newspaper".

Afei, ɔdrɔɔ flawa. "Then he drew a flower".

Adanko nyaa ahomka paa. "Rabbit became very contented".

BC Question: Den na Adanko kanee ansa na ɔredrɔw? "What did Rabbit read before he drew (it)?"

Upstairs ans. = nuuspepa "newspaper"; Downstairs ans. = flawa "flower"

AC Question: Den na Adanko drɔe bere a ɔkan wiei no? "What did Rabbit draw after he read (it)?"

Upstairs ans. = flawa "Flower"; Downstairs ans. = nuuspepa "newspaper"

##### Story 2:

Atwere soree ntem. Na ewimu ye fe paa. Frog woke up early. The sky was very beautiful.

ɔnomm nsu. He drank water.

Afei, ɔkan nhoma. Then, he read a book.

Da no Atwere ani gyei paa. That day, Frog was very happy.

BC Question: Den na Atwere nomee ansa na ɔrekan ? What did Frog drink before he read (it)?

Upstairs ans.: nsu "water"; Downstairs ans.: nwoma "book"

AC Question: Den na Atwere kanee bere a ɔnom wiei no ? What did Frog read after he drank (it)?

Upstairs ans.: nwoma “book”; Downstairs ans.: nsu “water”

**Story 3:**

Sakraman tuu mirika kɔɔ nsu no ho. Fox ran to the river.

Odii aiskrim. He ate icecream.

Afei, ɔkyerew lete kɔmaa ne maame. Then he wrote a letter to his mother.

Sakraman ye aboa onyansafo. Fox is a wise animal.

BC Question: Den na Sakraman dii ansa na ɔrekyerew? What did Fox eat  
before he wrote (it)?

Upstairs ans.: aiskrim “icecream”; Downstairs ans.: lete “letter”

AC Question: Den na Sakraman kyerewee bere a odi wiei no? What did  
Fox write after he ate (it)?

Upstairs ans.: lete “letter”; Downstairs ans.: aiskrim “icecream”

**Condition 2**

**Story 1:**

Na ɔwɔ pɛ obi ne no adi agoro. Snake wanted someone to play with.

Obisaa Sisi sɛ, “Me mfrɛ Anoma?” He asked Bear, “Shall I call Bird?”

Sisi anka hwee, nso ɔwɔ frɛɛ Anoma. Bear didn’t answer but Snake called Bird.

Wodii agoro bi. They played a game.

Afei ɔwɔ ani gyei sen kane no. After that, Snake became happier than before.

BC Question: Hena na ɔwɔ bisaa no ansa na ɔrefrɛ no? Who did Snake ask  
him/her before he called him/her?”

Upstairs ans. = Sisi “Bear”; Downstairs ans. = Anoma: “Bird”

Follow-up Question if an upstairs answer was given: Hena na ɔwɔ frɛɛ no? Who  
did Snake call him/her?; follow-up question if a downstairs answer was given:

Hena na ɔwɔ bisaa no? Who did Snake ask him/her?

AC Question: Hena na ɔwɔ frɛɛ no bere a obisaa no wiei no? Who did

Snake call him after he asked him/her?

Upstairs ans. = Anoma "Bird"; Downstairs ans. = Sisi "Bear".

Follow-up question if an upstairs answer was given: Hena na ɔwɔ bisaa

no? Who did Bird ask him/her?; follow-up question if a downstairs answer was

given: Hena na ɔwɔ frɛɛ no? Who did Snake call him/her?

### Story 2:

ɔkraman ho pere no.

Dog was excited.

Obisaa Nantwi se , "Me mpam Oguan? He asked Cow, "Shall chase

Sheep?"

Nantwi ammua, nso ɔkraman pamm Oguan. Cow didn't answer but Dog

chased Sheep.

ɔkraman ani gyee mirikatu no ho. Dog enjoyed the running.

BC Question: Hena na ɔkraman bisaa no ansa na ɔrepam no? Who did Dog

ask him/her before he chased him/her?

(Upstairs ans. = Nantwi "Cow"; Downstairs ans. = Oguan "Sheep".)

Follow-up question if an upstairs answer was given: Hena na ɔkraman pam

no? Who did Dog chase him/her?; follow-up question if a downstairs answer was

given: Hena na ɔkraman bisaa no? Who did Dog ask him/her?

AC Question: Hena na ɔkraman pam no bere a obisaa no wiei no? Who

did Dog chase him/her after he asked him/her?

(Upstairs ans. = Oguan "Sheep"; Downstairs ans. = Nantwi "Sheep".)

Follow-up question if an upstairs answer was given: Hena na ɔkraman bisaa no?

Who did Dog ask him/her?; follow-up question if a downstairs

answer was given: Hena na ɔkraman pam no? Who did Dog chase him/her?



### Condition 3

#### Story 1:

Prako ani nka.

Pig was not feeling happy.

oyee n'adwen se one mboa no bedi agoro bi. He decided to play with the animals.

Prako ka kyere Apɔnkye se, "Hwehwe Nwa ma me!" Pig told Goat:

"Find Snail for me!"

Prako dwene se n'ani ate paa.

Pig thinks that he is very clever.

Question: Hena na Prako pe se ohwehwe no? Who does Pig want to find him/her?

Upstairs answer = Apɔnkye "Goat"; Downstairs answer = Nwa "Snail"

#### Story 2:

Agyinamoa wo garden no mu.

Cat is in the garden.

Na ope se oye adwuma no bi.

She wanted to work.

Obisaa Akoko se:

She asked Hen:

"Yen mboa Akyekyere ma ondua aburaw no? "Shall we help Tortoise to sow the corn?"

Agyinamoa pe adwuma ye paa.

Cat likes working.

Question: Hena na Agyinamoa bisaa no se womboa no? Who did Cat ask

him/her that they should help him/her?

Upstairs answer = Akoko "Hen"; Downstairs answer = Akyekyere "Tortoise".

### Story 3:

Afurupɔnkɔ ani agye paa. Camel was very happy.  
Na ɔpɛ sɛ okyia obiara. He wanted to greet everybody.  
Obisaa Gyata se: “Yɛn nkyia ɔkwaku? He asked Lion: “Shall we greet  
Monkey?  
Afurupɔnkɔ yɛ aboa papa. Camel is a very kind animal.  
Question: Hena na Afurupɔnkɔ bisaa no sɛ wɔnkyia no? Who did Camel  
ask him/her that they greet him/her?  
(Upstairs answer = Gyata “Lion”; Downstairs answer = ɔkwaku “Monkey”).

## Appendix D

### Materials for Test 4

#### Good/Silly Judgement Task Based on Stories

Oyi wɔfrɛ no Kuuku; ɔnte Akan papa enti mepɛ sɛ woboa no. Asem a  
ɔbekā biara no, mepɛ sɛ wokā sɛ “ɛyɛ” anaa sɛ “ɛnye”.

"This one here is called Kuuku; he doesn't speak Akan very well so I want  
you to help him. Whatever he says, I want you to tell me whether it is “Good” or  
“Not good” (i.e. “Silly”).

Action: Gyata repia Sisi. Lion is pushing Bear.

Kuuku : “Gyata repia Sisi” Lion is pushing Bear.

Action: ɔkwaku gyina Kuuku anim Monkey is standing before Kuuku.

Kuuku: “ɔkwaku yɛ blau” Monkey is blue.

Action: ɔkwaku rekan nwoma no. Monkey is reading the book.

Kuuku: "ɔkwaku rekan nwoma no" Monkey is reading the book.

Action: Sisi renom akutu nsu Bear is drinking orange juice.

Kuuku: "Sisi renom ɔpon no" Bear is drinking the table.

Action: Gyata gyina Sisi so. Lion is standing on Bear.

Kuuku: "Den na Gyata reyɛ ?" What is Lion doing to Bear?

Action: ɔkwaku renom akutu nsu. Monkey is drinking orange juice.

Kuuku : "Den na ɔkwaku renom akutu nsu no?" What is Monkey drinking  
the orange juice?

Action: Gyata repia Sisi. Lion is pushing Bear.

Kuuku: "Hena na Gyata piala Sisi?" Who did Lion push Bear?

Action: ɔkwaku rekan nwoma akyere Gyata. Monkey is reading a book to Lion.

Kuuku: "Hena na ɔkwaku rekan nwoma akyere no no?" Who is Monkey reading  
a book to him/her?

### **Sentences Based on Condition 1 Stories**

Afei yenhwe se Kuuku pe anasesem a merebeto yi. Obebisa nsem afa ho.

Mepe se wokā se n'asem a orebisa no ye anaa se enye.

"Now let's see if Kuuku likes the stories I'm going to tell him. He will ask questions about them and I want you to tell me if his questions are "Good" or "Not Good".

ADANKO Hõ ASεM

Rabbit Story

Adanko ani gyee awiabere no.

Rabbit was very happy that afternoon.

Nea edi kan no, ɔkan nuuspepa.

First, he read a newspaper.

Afei, ɔdrɔw flawa.

Then he drew a flower.

Adanko nyaa ahomka paa.

Rabbit became very contented.

Kuuku :

"Before Question: Den na Adanko kanee flawa no ansa na ɔredrɔw?  
What did Rabbit read the flower before he drew (it)?"

"After Question: Den na Adanko drɔw flawa bere a ɔkan wiei no?  
What did Rabbit draw a flower after he read (it)?"

ATWεRE Hõ ASεM

Frog Story

Atwere soree ntem.

Frog woke up early.

Nã ewimu ye fe paa

The sky was very beautiful.

ɔnomm nsu.

He drank water.

Afei, ɔkan nhoma.

Then, he read a book.

Da no Atwere ani gyei paa.

That day, Frog was very happy.

Kuuku:

"Before" Question: Den na Atwere nomee ansa na ɔrekan nsu?  
What did Frog drink before he read water?"

"After" Question: Den na Atwere kanee bere a ɔnom nsu wiei no?  
What did Frog read after he drank water?"

SAKRAMAN HŌ ASɛM:

Fox Story

Sakraman tuu mirika kɔɔ nsu no ho.

Fox ran to the river.

Odii aiskrim.

He ate icecream.

Afei, ɔkyerew lete kɔmaa ne maame.

Then he wrote a letter to his mother.

Sakraman ye aboa onyansafo.

Fox is a wise animal.

Kuuku:

"Before" Question: Den na Sakraman dii ansa na ɔkyerew lete no?

What did Fox eat before he wrote the letter?

"After" Question: Den na Sakraman kyerew aiskrim bere a odi wiei no?

What did Fox write an icecream after he ate (it)?

KOFI HŌ ASɛM:

Kofi's Story

Kofi ani gye ne homwɛek no hŏ.

Kofi was happy with his homework.

ɔkyerew anasesem dɛdɛdɛ bi.

He wrote a very beautiful story.

Afei odii keek kɛse bi.

Then, he ate a big piece of cake.

Owiei no, ɔnantee kɔɔ sukuu ntemntem. After that, he walked quickly to school.

Kuuku:

"Before" Question: Den na Kofi kyerew anasesem ansa na oredi?

What did Kofi write a story before he ate (it)?

"After" Question: Den na Kofi dii bere a ɔkyerew keek kɛse no wiei no?

What did Kofi eat after he wrote the big piece of cake?

**Appendix E**  
**Materials for Test 5<sup>1</sup>**  
**Scalar Judgement Task**

**Condition I: Object Extraction out of a Relative Clause**

- (1) a. Me nim onipa ko a okaa asem no.  
 I know person Sp. Rel. 3sg:told story the  
 "I know the person that told that story".
- b. Asem no, me nim onipa ko a okae.  
 Story that I know person Sp. Rel. 3sg:told *pro*  
 "That story, I know the person that told (it.)"
- c. Den na wonim onipa ko a okae?  
 What Foc. you:know person Sp. Rel. 3sg:told *pro*  
 "What do you know the person that told (it)?"
- (2) a. Me huu onipa ko a otwaa ahoma no.  
 I saw person Sp. Rel. 3sg:cut rope the  
 "I saw the person that cut the rope".

---

<sup>1</sup> Changes had to be made in translating from Akan into English . The following are some of the important ones:

- i. Familiar English proper names were used instead of Akan/ Ghanaian ones.
- ii. Some verbs changed for cultural plausibility as well as problems with usage. For example the verb which translates from Akan into English as "call/ call to" was changed to "phoned" in the English material in condition I (3) and also condition IV A (6), e.t.c. Tense and aspectual forms were also manipulated a little bit in the translation. All these manipulations resulted in the two interpretations/translations of the Akan sentences as shown by the use quotation marks ( " ") and parentheses ( ) after each of the Akan sentences in this appendix.
- iii. Where two interpretations of the Akan sentences are given in English, those in parentheses indicate the actual sentences used in the English test. A comparison of the two versions, the one in quotation marks and the one in parentheses will show the changes that were effected in the English test.

- b. Ahoma no, me huu onipa ko a otwae.  
 Rope the I saw person Sp. Rel.3sg:cut *pro*  
 “The rope, I saw the person that cut (it).”
- c. Den na, wo huu onipa ko a otwae?  
 What Foc. you saw person Sp. Rel. 3sg:cut *pro*  
 “What did you see the person that cut (it)?”
- (3) a. Kojo free obaa a otɔn flaws no.  
 K. called to woman Rel. she:sells flowers the  
 “Kojo called to the woman that sells flowers”.  
 (Bill phoned the woman that sells the flowers.)
- b. Flawes no, Kojo free obaa a otɔn no.  
 Flowers the K. called to woman Rel. she:sells *pro* CD.  
 “The flowers, Kojo called to the woman that sells (them)”.  
 (The flowers, Bill phoned the woman that sells.)
- c. Den na Kojo free obaa a otɔn no?  
 What Foc K. called to woman Rel. she:sells *pro* CD.  
 “What did Kojo call to the woman that sells (them)?”.  
 (What did Bill phone the woman that sells?)
- (4) a. Me nim onipa ko a okyerew nwoma yi.  
 I know person Sp.Rel. 3sg:wrote book this  
 “I know the person that wrote this book.”

- b. Nwoma yi, me nim onipa ko a ɔkyerɛwee.  
 Book this I know person Sp. Rel. 3sg:wrote *pro*  
 “This book, I know the person that wrote (it).”
- c. Den na wo nim onipa ko a ɔkyerɛwee?  
 What Foc. you know person Sp. Rel. 3sg:wrote *pro*  
 “What do you know the person that wrote (it)?”
- (5) a. Me ne onipa a osii ofie no kasae.  
 I and person Rel. 3sg:built house the spoke  
 “I spoke to the person that built the house.”
- b. Ofie no, me ne onipa a osiie no kasae.  
 House the I and person Rel. 3sg:built *pro* CD. spoke  
 “The house, I spoke to the person that built (it).”
- c. Den na, wo ne onipa a osiie no kasae?  
 What Foc. you and person Rel. built *pro* CD spoke  
 “What did you speak to the person that built (it)?”
- (6) a. Ama huu ɔkraman a ɔwee dompe no.  
 A. saw dog Rel. 3sg:ate bone the  
 “Ama saw the dog that ate the bone.”  
 (Mary saw the dog that ate the bone.)

- b. Dompe no, Ama huu ɔkraman a ɔweɛ no.  
 Bone the A. saw dog Rel. 3sg:ate *pro* CD  
 “The bone, Ama saw the dog that ate (it).”  
 (The bone, Mary saw the dog that ate.)
- c. Den na, Ama huu ɔkraman a ɔweɛ no?  
 What Foc. A. saw dog Rel. 3sg:ate *pro* CD  
 “What did Ama see the dog that ate (it)?”  
 (What did Mary see the dog that ate?)
- (7) a. Mary rehwehwe onipa ko a otuu tokuro no.  
 M. is looking for person Sp. Rel. 3sg:dug hole the  
 “Mary is looking for the person that dug the hole.”
- b. Tokuro no, Mary rehwehwe onipa ko a otue.  
 Hole the M. is looking for person Sp. Rel. 3sg:dug *pro*  
 “The hole, Mary is looking for the person who dug (it).”
- c. Den na Mary rehwehwe onipa ko a otue?  
 What Foc. M. is looking for person Sp. Rel. 3sg:dug *pro*  
 “What is Ama looking for the person who dug (it)?”
- (8) a. Me nnkae onipa ko a ɔtenaa agua yi mu.  
 I not:remember person Sp. Rel. 3sg:sat chair this in  
 “I don’t remember the person that sat in this chair.”

b. Agua yi, me nnkae onipa ko a ɔtenaa mu.  
Chair this I not:remember person Sp. Rel. 3sg:sat in  
“This chair, I don’t remember the person that sat in (it).”

c. Den na wo nnkae onipa ko a ɔtenaa mu?  
What Foc. you not:remember person Sp. Rel. 3sg:sat in  
“What don’t you remember the person that sat in (it)?”

(9) a. Ama were afi onipa a odii keek no.  
A. has forgotten person Rel. 3sg:ate cake the  
“Ama has forgotten the person that ate the cake.”  
(Mary has forgotten the person that ate the cake.)

b. Keek no, Ama were afi onipa a odie.  
Cake the A. has forgotten person Rel. 3sg:ate *pro*  
“The cake, Ama has forgotten the person that ate (it).”  
(The cake, Mary has forgotten the person that ate.)

c. Den na, Ama were afi onipa a odie?  
What Foc.A. has forgotten person Rel. 3sg:ate *pro*  
“What has Ama forgotten the person that ate (it)?”  
(What has Ama forgotten the person that ate?)

**Condition II: Object Extraction out of a VP-Complement**

- (1) a. Kofi kãã se Ama dii akutu no.  
K. said that A. ate orange the  
“Kofi said that Ama ate the orange”.  
(John said that Mary ate the orange.)
- b. Akutu no, Kofi kãã se Ama die.  
Orange the K. said that A. ate *pro*  
“The orange, Kofi said that Ama ate (it)”.  
(The orange, John said that Mary ate.)
- c. Den na Kofi kãã se Ama die?  
What Foc. K. said that A. ate *pro*  
“What did Kofi say that Ama ate (it)?”  
(What did John say that Mary ate?)
- (2) a. Ama pe se Kofi sensen akutu no.  
A. wants that K. peel orange the  
“Ama wants Kofi to peel the orange.”  
(Mary wants John to peel the orange.)
- b. Akutu no, Ama pe se Kofi sensen.  
Orange the A. wants that K. peel *pro*  
“The orange, Ama wants Kofi to peel (it).”  
(The orange, Mary wants John to peel.)

- c. Den na Ama pe se Kofi sensen?  
 What Foc. A. wants that K. peel *pro*  
 “What does Ama want Kofi to peel (it)?”  
 (What does Mary want John to peel?)
- (3) a. Sam gye di se John na okyerew ndwom no.  
 S. believes that J. Foc. he:wrote song the  
 “Sam believes that John wrote the song.”
- b. Ndwom no, Sam gye di se John na okyerewee.  
 Song the S. believes that J. Foc. he:wrote *pro*  
 “The song, Sam believes that John wrote.”
- c. Den na Sam gye di se John na okyerewee?  
 What Foc.S. believes that J. Foc. he:wrote *pro*  
 “What does Sam believe that John wrote (it)?”
- (4) a. Me gye di se abofra no ahu toy no.  
 I believe that child the has:seen toy the  
 “I believe that the child has seen the toy.”  
 (I believe that the boy has seen the toy.)
- b. Toy no, me gye di se abofra no ahu.  
 Toy the I believe that child the has:seen *pro*  
 “The toy, I believe the child has seen (it).”  
 (The toy, I believe the boy has seen.)

- c.     Dɛn   na   wɔ   gye   di   sɛ   abofra   no   ahu?  
 What   Foc.   you   believe   that   child   the   has:seen *pro*  
 “What do you believe that the child has seen (it)?”  
 (What do you believe that the boy has seen?)
- (5)   a.     ɔpɛ           sɛ   John   hwehwɛ   nwoma   no   ma   no.  
 3sg:wants   that   J.   look   for   book   the   give   3sg.  
 “She wants John to find the book for her.”
- b.     Nwoma   no,   ɔpɛ           sɛ   John   hwehwɛ   ma   no.  
 Book   the   3sg:wants   that   J.   look   for   give   3sg.  
 “The book, s/he wants John to find it for him/her.”  
 (The book, she wants John to find for her.)
- c.     Dɛn   na   ɔpɛ           sɛ   John   hwehwɛ   ma           no?  
 What   Foc.   3sg:wants   that   J.   look   for   give           3sg.  
 “What does s/he want John to find it for him/her?”  
 (What does she want John to find for her?)
- (6)   a.     Wɔ   pɛ           sɛ   wɔtɔn   wɔn   kaa   dada   no.  
 They   want   that   they:sell   their   car   old   the  
 “They want to sell their old car.”
- b.     Wɔn   kaa   dada   no,   wɔ   pɛ           sɛ   wɔtɔn.  
 Their   car   old   the   they   want   that   they:sell *pro*  
 “Their old car, they want to sell (it)”

- c. Den na wo pɛ sɛ wɔtɔn?  
 What Foc. they want that they:sell *pro*  
 “What do they want to sell (it)?”
- (7) a. Me kãã sɛ Kofi mfa sika no.  
 I said that K. Sub.:take money the  
 “I said that Kofi should take the money.”  
 (I said that John should take the money.)
- b. Sika no, me kãã sɛ Kofi mfa.  
 Money the I said that K. Sub.:take *pro*  
 “The money, I said that Kofi should take (it).”  
 (The money, I said that John should take.)
- c. Den na wo kãã sɛ Kofi mfa?  
 What Foc. you say that K. Sub.:take *pro*  
 “What did you say that Kofi should take (it)?”  
 (What did you say that John should take?)
- (8) a. Me mpe sɛ Ama di aduane no.  
 I not:like that A. eat food the  
 “I don’t want Ama to eat the food.”  
 (I don’t want Mary to eat the food.)

b. Aduane no, me mpe se Ama di.  
 Food the I not:like that A. eat *pro*  
 "The food, I don't want Ama to eat (it)."  
 (The food, I don't want Mary to eat.)

c. Den na wo mpe se Ama di?  
 What Foc. you not:like that A. eat *pro*  
 "What don't you want Ama to eat (it)?"  
 (What don't you want Mary to eat?)

(9) a. Me pe se Kojo hye wo mpaboa no.  
 I want that K. wear your shoes the  
 "I want Kojo to wear your shoes."  
 (I want Sam to wear your shoes.)

b. Wo mpaboa no, me pe se Kojo hye.  
 Your shoes the I want that K. wear *pro*  
 "Your shoes, I want Kojo to wear (it)."  
 (Your shoes, I want Sam to wear.)

c. Den na wo pe se Kojo hye?  
 What Foc. you want that K. wear *pro*  
 "What do you want Kojo to wear (it)?"  
 (What do you want Sam to wear?)

**Condition III: Subject Extraction out of a VP-Complement**

- (1) a. Peter dwene se John beto kaa no.  
P. thinks that J. will:buy car the  
“Peter thinks that John will buy the car.”
- b. John, Peter dwene se obeto kaa no.  
J. P. thinks that he:will:buy car the  
“John, Peter thinks that he will buy the car.”  
(John, Peter thinks that will buy the car.)
- c. Hena na Peter dwene se obeto kaa no?  
Who Foc. P. thinks that 3sg:will:buy car the  
“Who does Peter think that he will buy the car?”  
(Who does Peter think that will buy the car?)
- (2) a. Kojo kãã se Kofi pïaa aɡua no.  
K. said that K. pushed chair the  
“Kojo said that Kofi pushed the chair.”  
(Bill said that John pushed the chair.)
- b. Kofi, Kojo kãã se opïaa aɡua no.  
Kofi K. said that he:pushed chair the  
“Kofi, Kojo said that he pushed the chair.”  
(John, Bill said that pushed the chair.)

- c. Hena na Kojo kãã se opiaa      agua no?  
Who Foc. K. say that 3sg:pushed chair the  
“Who did Kojo say that he pushed the chair?”  
(Who did Bill say that pushed the chair?)
- (3) a. Tikya no nim   se abofra no akan anansesem   no.  
Teacher the knows that child the has:read story    the  
“The teacher knows that the child has read the story.”  
(The teacher said that the child has read the story.)
- b. Abofra no, tikya no nim   se   ɔakan anansesem no.  
Child the teacher the knows that 3sg:has:read story the  
“The child, the teacher knows that s/he has read the story.”  
(The child, the teacher said has read the story.)
- c. Hena na tikya no nim   se   ɔakan anansesem no?  
Who Foc.teacher the knows that 3sg:has:read story the  
“Who does the teacher know that s/he has read the story?”  
(Who does the teacher say that has read the story?)
- (4) a. Kofi dwene se Efua apam   ataade no.  
K.   thinks that E. has:made dress the  
“Kofi thinks that Efua has made the dress.”  
(Bill thinks that Sally has made the dress.)

b. Efua, Kofi dwene se ɔapam ataade no.  
 E. K. thinks that she:has:made dress the  
 “Efua, Kofi thinks that she has made the dress.”  
 (Sally, Bill thinks that has made the dress.)

c. Hena na Kofi dwene se ɔapam ataade no?  
 Who Foc. K. thinks that 3sg:has:made dress the  
 “Who does Kofi think that she has made the dress?”  
 (Who does Bill think that has made the dress?)

(5) a. John pe se Bill to ntokura no mu.  
 J. wants that B. close window the in  
 “John wants Bill to close the window.”  
 (John thinks that Bill closed the window.)

b. Bill, John pe se ɔto ntokura no mu.  
 B. J. wants that he:close window the in  
 “Bill, John wants that he close the window.”  
 (Bill, John thinks that closed the window.)

c. Hena na John pe se ɔto ntokura no mu?  
 Who Foc.J. wants that 3sg:close window the in  
 “Who does John want that he close the window?”  
 (Who does John think that closed the window?)

- (6) a. John kãã se Bill atɔn mfonɪ no.  
 J. said that B. has:sold picture the  
 "John said that Bill has sold the picture."
- b. Bill, John kãã se ɔatɔn mfonɪ no.  
 B. J. said that he:has:sold picture the  
 "Bill, John said that he has sold the picture."  
 (Bill, said that has sold the picture.)
- c. Hena na John kãã se ɔatɔn mfonɪ no?  
 Who Foc. J. said that 3sg:has:sold picture the  
 "Who did John say that he has sold the picture?"  
 (Who did John say has sold the picture?)
- (7) a. Kojo kãe Ama asesa n'ataade.  
 K. said A. had:changed her:dress  
 "Kojo said Ama had changed her dress."  
 (John said that Mary had changed her dress.)
- b. Ama, Kojo kãe wasesa n'ataade.  
 A. K. said she:had:changed her:dress  
 "Ama, Kojo said she had changed her dress."  
 (Mary, John said that had changed her dress.)

- c. Hena na Kojo kãe wasesa n'ataade?  
 Who Foc. K. saidshe:had:changed her dress  
 "Who did Kojo say she had changed her dress?"  
 (Who did John say that had changed her dress?)
- (8) a. Me nim abofra no adi akutu.  
 I know child the has:eaten orange  
 "I know the child has eaten an orange."  
 (I said that the boy had eaten an orange.)
- b. Abofra no, me nim ɔadi akutu.  
 Child the I know 3sg:has:eaten orange  
 "The child, I know s/he has eaten an orange."  
 (The boy, I said that had eaten an orange.)
- c. Hena na wo nim ɔadi akutu?  
 Who Foc.you know 3sg:has:eaten orange  
 "Who you know has eaten an orange?"  
 (Who did you say that had eaten an orange?)
- (9) a. Kwasi kãe Ama awie sukuu.  
 Kw said A. has:finished school  
 "Kwasi said Ama had finished school."  
 (John said that Mary had finished school.)

b. Ama, Kwasi kãe ɔawie sukuu.

A Kw. said she:has:finished school

“Ama, Kwasi said she has finished school.”

(Mary, John said that had finished school.)

c. Hena na Kwasi kãe ɔawie sukuu?

Who Foc. Kw. said she:has:finished school

“Who did Kwasi say she has finished school?”

(Who did John sa that had finished school?)

#### Condition IV: Object Extraction out of a Wh-Complement

(1) a. Obisae se hena na ɔfaa adaka no.

3sg:asked that who Foc. 3sg:took box the

“She asked who took the box.”

b. Adaka no, obisae se hena na ɔfae

Box the 3sg:asked that who Foc. 3sg:took *pro*

“The box, she asked who took (it)”.

c. Den na obisae se hena na ɔfae?

What Foc. 3sg:asked that who Foc. 3sg:took *pro*

“What did she ask who took (it)?”

(2) a. Obisaa Kwame se hena na ohuu safoa no?

3sg:asked K. that who Foc 3sg:saw key the

“She asked Kwame who saw the key”.

(She asked Sam who saw the key.)

- b. Safoa no, obisaa Kwame se hena na ohui?  
 Key the 3sg:asked K. that who Foc. 3sg:saw *pro*  
 “The key, she asked Kwame who saw (it).”  
 (The key, she asked Sam who saw.)
- c. Den na obisaa Kwame se hena hui?  
 What Foc. 3sg:asked K. that who saw *pro*  
 “What did she ask Kwame who saw (it)?.”  
 (What did she ask Sam who saw?)
- (3) a. Obisae se hena na otuaa sika no.  
 3sg:asked that who Foc. 3sg:paid money the  
 “She asked who paid the money”.
- b. Sika no, obisae se hena na otuae.  
 Money the 3sg:asked that who Foc 3sg:paid *pro*  
 “The money, she asked who paid (it)”.
- c. Den na obisae se hena na otuae ?  
 What Foc 3sg:asked that who Foc 3sg:paid *pro*  
 “What did she ask who paid (it)?”
- (4) a. Obisae se hena na odii kwadu no.  
 3sg:asked that who Foc 3sg:ate banana the  
 “She asked who ate the banana.”

- b. Kwadu no, obisae se hena na odie.  
Banana the 3sg:asked hat who Foc 3sg:ate *pro*  
“The banana, she asked who ate (it).”
- c. Den na obisae se hena na odie?  
What Foc 3sg:asked that who Foc 3sg:ate *pro*  
“What did she ask who ate (it)?”
- (5) a. Obisae se hena na ofaa sika no.  
3sg:asked that who Foc 3sg:took money the  
“He asked who took the money.”
- b. Sika no, obisae se hena na ofae.  
Money the 3sg:asked that who Foc 3sg:took *pro*  
“The money he asked who took (it).”
- c. Den na obisae se hena na ofae?  
What Foc 3sg:asked that who Foc 3sg:took *pro*  
“What did he ask who took (it)?”
- (6) a. Kwame bisae se hena na onaaa nkosua no.  
Kw. asked that who Foc cooked eggs the  
“Kwame asked who cooked the eggs”.  
(Bill asked who cooked the eggs.)

b. Nkosua no, Kwame bisae se hena na ɔnoae.  
 Eggs the Kw. asked that who Foc 3sg:cooked *pro*  
 “The eggs, Kwame asked who cooked (it)”.  
 (The eggs, Bill asked who coked.)

c. Den na Kwame bisae se hena na ɔnoae?  
 What Foc Kw. asked that who Foc 3sg:cooked *pro*  
 “What did Kwame ask who cooked (it)?”  
 (What did Bill ask who cooked.)

(7) a. Kofi bisae se hena na ɔpe mfonɔ no.  
 K. asked that who Foc 3sg:likes picture the  
 “Kofi asked who likes the picture”.  
 (John asked who liked the picture.)

b. Mfonɔ no, Kofi bisae se hena na ɔpe.  
 Picture the K. asked that who Foc 3sg:likes *pro*  
 “The picture, Kofi asked who likes (it)”.  
 (The picture, John asked who liked.)

c. Den na Kofi bisae se hena na ɔpe?  
 What Foc K. asked that who Foc 3sg:likes *pro*  
 “What did Kofi ask who likes (it)?”  
 (what did John ask who liked?)

- (8) a. Mary bisaa se hena na oyee kofe no.  
M. asked that who Foc 3sg:made coffee the  
“Mary asked who made the coffee”.
- b. Kofe no, Mary bisaa se hena na oyee.  
Coffee the M. asked that who Foc 3sg:made *pro*  
“The coffee, Mary asked who made (it)”
- c. Den na Mary bisaa se hena na oyee?  
What Foc M. asked that who Foc 3sg:made  
“What did Mary ask who made (it)?”
- (9) a. Kwame bisaa se hena na obedi keek no.  
K. asked that who Foc 3sg:will eat cake the  
“Kwame asked who will eat the cake.”  
(John asked who will eat the cake.)
- b. Keek no, Kwame bisaa se hena na obedi?  
Cake the Kw. asked that who Foc.3sg:will eat *pro*  
“The cake, Kwame asked who will eat (it)?”  
(The cake, John asked who will eat.)
- c. Den na Kwame bisaa se hena na obedi?  
What Foc. K. ask that who Foc. 3sg:will eat *pro*  
“What did Kwame ask who will eat (it)?”  
(What did John ask who will eat.)

**Condition V: Object Extraction out of Temporal “Before” Clause**

- (1) a. Ama kanee *Graphic* ansa na ɔrekyerew lete no.  
A. read G. before she:wrote letter the  
“Ama read the *Graphic* before she wrote the letter”.  
(Mary read the *Citizen* before she wrote the letter.)
- b. Lete no, Ama kanee *Graphic* ansa na ɔrekyerew.  
Letter the A. read G. before she:wrote *pro*  
“The letter, Ama read the *Graphic* before she wrote (it)”.  
(The letter, Mary read the *Citizen* before she wrote.)
- c. Den na Ama kanee *Graphic* ansa na ɔrekyerew?  
What Foc.A. read G. before she:wrote *pro*  
“What did Ama read the *Graphic* before she wrote (it)?”  
(What did Mary read the *Citizen* before she wrote?)
- (2) a. Mary nomm tii ansa na ɔredi kwadu no.  
M. drank tea before she:ate banana the  
“Mary drank tea before she ate the banana.”
- b. Kwadu no, Mary nomm tea ansa na ɔredi.  
Banana the M. drank tea before she:ate *pro*  
“The banana, Mary drank tea before she ate (it)”.
- c. Den na Mary nomm tii ansa na ɔredi?  
What Foc. M. drank tea before she:ate *pro*?  
“What did Mary drink tea before she ate (it)?”

- (3) a. Dəkota no hohoroo ne nsa ho ansa na ɔrefa sekan no.  
 Doctor the washed his hands before he:took scalpel the  
 “The doctor washed his hands before he took the scalpel”.
- b. Sekan no, Dəkota no hohoroo ne nsa ho ansa na ɔrefa.  
 Scalpel the Doctor the washed his hands before he:took *pro*  
 “The scalpel, the doctor washed his hands before he took (it)”.
- c. Den na Dəkota no hohoroo ne nsa ho ansa na ɔrefa?  
 What Foc Doc. the washed his hands before he:took *pro*  
 “What did the doctor wash his hands before he took (it)?”
- (4) a. Dinah fii Ottawa ansa na ɔrekan nwoma no.  
 D. left O. before she:read book the  
 “Dinah left Ottawa before she read the book”.
- b. Nwoma no, Dinah fii Ottawa ansa na ɔrekan.  
 Book the D. left O. before she:read *pro*  
 “The book, Dinah left Ottawa before she read (it)”.
- c. Den na Dinah fii Ottawa ansa na ɔrekan?  
 What Foc D. left O. before she:read *pro*  
 “What did Dinah leave Ottawa before she read (it)?”

- (5) a. Sue too ndwom ansa na ɔredi aiskrim no.  
S. sang song before she:ate ice cream the  
“Sue sang a song before she ate the icecream”.
- b. Aiskrim no Sue too ndwom ansa na ɔredi.  
Ice cream the S. sang song before she:ate *pro*  
“The icecream, Sue sang a song before she ate (it).”
- c. Den na Sue too ndwom ansa na ɔredi?  
What Foc. S. sang song before she:ate *pro*  
“What did Sue sing a song before she ate (it)?”
- (6) a. Kofi frɛɛ ɔbaa no ansa na ɔretɔ flawa no.  
K. called to woman the before he:bought flowers the  
“Kofi called to the woman before he bought the flowers”.  
(John phoned the woman before he bought the flowers.)
- b. Flawa no, Kofi frɛɛ ɔbaa no ansa na ɔretɔ.  
Flowers the K. called to woman the before he:bought *pro*  
“The flower, Kofi called to the woman before he bought (it)”.  
(The flower, John phoned the woman before he bought.)
- c. Den na Kofi frɛɛ ɔbaa no ansa na ɔretɔ?  
What Foc. K. called to woman the before he:bought *pro*  
“What did Kofi call to the woman before he bought (it)?”  
(What did John phone the woman before he bought?)

- (7) a. John duu fie ansa na ɔrete asem no.  
 J. arrived home before he:heard news the  
 “John arrived home before he heard the news.”
- b. Asem no, John duu fie ansa na ɔrete.  
 News the J. arrived home before he:heard *pro*  
 “The news, John arrived home before he heard (it).”
- c. Den na John duu fie ansa na ɔrete?  
 What Foc. J. arrived home before he:heard *pro*  
 “What did John arrive home before he heard (it)?”
- (8) a. Ama dii keek no ansa na ɔreto anansesem no.  
 A. ate cake the before she:told story the  
 “Ama ate the cake before she told the story.”  
 (Mary ate the cake before she told the story.)
- b. Anansesem no, Ama dii keek no ansa na ɔreto.  
 Story the A. ate cake the before she:told *pro*  
 “The story, Ama ate the cake before she told (it).”  
 (The story, Mary ate the cake before she told.)
- c. Den na Ama dii keek no ansa na ɔreto?  
 What Foc.A. ate cake the before she:told *pro*  
 “What did Ama eat the cake before she told (it)?”  
 (What did Mary eat cake before she told?)

- (9) a. Kofi gyee license ansa na ɔrekā kaa no.  
 K. got license before he:drove car the  
 “Kofi got a license before he drove the car.”  
 (John got a license before he drove the car.)
- b. Kaa no, Kofi gyee license ansa na ɔrekā.  
 Car the K. got license before he:drove *pro*  
 “The car, Kofi got a license before he drove (it).”  
 (The car, John got a license before he drove.)
- c. Den na Kofi gyee license ansa na ɔrekā?  
 What Foc. K. got license before he:drove *pro*  
 “What did Kofi get a license before he drove (it)?”  
 (What did John get a license before he drove?)

**Condition VI: Object Extraction out of a Temporal “After” Clause**

- (1) a. Kofi nom nsu bere a odii paanoo no wiei no.  
 K. drank water time Rel.he:ate bread the finish CD.  
 “Kofi drank water after he ate the bread”.  
 (John drank water after he ate the bread.)
- b. Paanoo no, Kofi nom nsu bere a odi wiei no.  
 Bread the K. drank water time Rel. he:ate finish CD.  
 “The bread, Kofi drank water after he ate (it) ”.  
 (The bread, John drank water after he ate.)

- c. Den na Kofi nom nsu bere a odi wiei no?  
 What Foc K. drank water time Rel. he:ate finish CD.  
 “What did Kofi drink water after he ate (it)?  
 (What did John drink water after he ate.)
- (2) a. Kofi dii keek bere a ɔkyerɛw letɛ no wiei no.  
 K. ate cake time Rel. he:wrote letter the finish CD.  
 “Kofi ate a cake after he wrote the letter.”  
 (John ate cake after he wrote the letter.)
- b. Letɛ no,Kofi dii keek bere a ɔkyerɛw wiei no.  
 Letter the K. ate cake time Rel. he:wrote finish CD.  
 “The letter, Kofi ate a cake after he wrote (it).”  
 (The letter, John ate cake after he ate.)
- c. Den na Kofi dii keek bere a ɔkyerɛw wiei no?  
 What Foc. K. ate cake time Rel.he:wrote finish CD.  
 “What did Kofi eat a cake after he wrote (it)?”  
 (What did John eat cake after he wrote?)
- (3) a. Sam kāā kaa no bere a ɔgyee laisins wiei no.  
 S. drove car the time Rel. he:got license finish CD.  
 “Sam drove the car after he got the licence.”

b. Laisens no, Sam kãã kaa no bere a ɔgye wiei no.  
 License the S. drove car the time Rel. he:got finish CD.  
 "The license, Sam drove the car after he got (it)."

c. Dɛn na Sam kãã kaa no bere a ɔgye wiei no?  
 What Foc. S.drove car the time Rel. he:got finish CD.  
 "What did Sam drive the car after he got (it)?"

(4) a. Ama hohoroo nkyense no mu bere a ɔnoaa  
 A. washed dishes the in time Rel. she:cooked  
 aduane no wiei no.  
 food the finish CD.  
 "Ama washed the dishes after she cooked the meal".  
 (Susan washed the dishes after she cooked the meal.)

b. Aduane no, Ama hohoroo nkyense no mu  
 Food the A. washed dishes the in time  
 bere a ɔnoaa wiei no.  
 Rel.she:cooked finish CD.  
 "The meal, Ama washed the dishes after she cooked (it)".  
 (The meal, Susan washed the dishes after she cooked.)

- c.     Dɛn na Ama hohoroo nkyense no mu bere a  
 What Foc.A. washed dishes the in time Rel.  
 ɔnoaa           wiei no?  
 she:cooked    finish CD.  
 “What did Ama wash the dishes after she cooked (it)?”  
 (What did Susan wash the dishes after she cooked?)
- (5) a.     Esi tenaa mpa no so bere a ɔkãã     asɛm no wiei no.  
 E. sat bed the on time Rel.she:told news the finish CD  
 “Esi sat on the bed after she told the story”.  
 (Sally sat on the bed after she told the story.)
- b.     Aɛm no, Esi tenaa mpa no so bere a ɔkãwiei no.  
 News the E. sat bed the on time Rel. she:told finish CD.  
 “The story, Esi sat on the bed after she told (it)”.  
 (The news, Sally sat on the bed after she told.)
- c.     Dɛn na Esi tenaa mpa no so bere a ɔkã wiei no?  
 What Foc. E. sat bed the on time Rel. she:told finish CD.  
 “What did Esi sit on the bed after she told (it)?  
 (What did Sally sit on the bed after she told.)
- (6) a.     Kofi anni aduane no bere a otiee     asɛm no wiei no.  
 K. not:eat food the time Rel. he:heard news the finish CD.  
 “Kofi did not eat the food after he heard the news.”  
 (John didn;t eat the food after he heard the news.)

- b. Asem no, Kofi anni aduane no bere a otie wiei no.  
 News the K. not:eat food the time Rel. he:heard finish CD  
 “The news, Kofi did not eat the food after he heard (it).”  
 (The news, John didn’t eat the food after he heard.)
- c. Den na Kofi anni aduane no bere a otie wiei no?  
 What Foc. K. not:eat food the time Rel. he:heard finish CD.  
 “What did Kofi did not eat the food after he heard (it)?”  
 (What did John not eat the food after he heard?)
- (7) a. Bill kann nuuspepa bere a onomm kɔfe wiei no.  
 B. read newspaper time Rel. he:drink coffee finish CD.  
 “Bill read a newspaper after he drank coffee.”  
 (Bill read a newspaper after he drank tha coffee.)
- b. Kɔfe, Bill kann nuuspepa bere a onomm wiei no.  
 Coffee B. read newspaper time Rel. he:drink *pro* finish CD.  
 “Coffee, Bill read a newspaper after he drank (it).”  
 (The coffee, Bill read a newspaper after he drank.)
- c. Den na Bill kan nuuspepa bere a onomm wiei no?  
 What Foc.B. read newspaper time Rel. he:drink finish CD.  
 “What did Bill read a newspaper after he drank (it)?”

- (8) a. Adjoa dii akutu bere a ɔnomm aduru no wiei no.  
 A. ate orange time Rel. she:took medicine the finish CD.  
 “Adjoa ate an orange after she took the medicine”.  
 (Mary ate an orange after she took the medicine.)
- b. Aduru no, Adjoa dii akutu bere a ɔnom wiei no.  
 Medicine the A. ate orange time Rel. she:took finish CD.  
 “The medicine, Adjoa ate an orange after she took (it)”.  
 (The medicine, Mary ate an orange after she took.)
- c. Den na Adjoa dii akutu bere a ɔnom wiei no?  
 What Foc.A. ate orange time Rel. she:took finish CD.  
 “What did Adjoa eat an orange after she took (it)?  
 (What did Mary eat an orange after she took?)
- (9) a. Sam hwɛɛ TV bere a ɔyɛɛ ne homwɛɛk no wiei no.  
 S. watched TV time Rel. he:did his homework the finish CD  
 “Sam watched TV after he did his homework”.
- b. Ne homwɛɛk no, Sam hwɛɛ TV bere a ɔyɛ wiei no.  
 His homework the S.watched TV time Rel. he:did finish CD  
 “His homework, Sam watched TV after he did (it)”.
- c. Den na Sam hwɛɛ TV bere a ɔyɛ wiei no?  
 What Foc.S. watched TV time Rel. he:did finish CD  
 “What did Sam watch TV after he finished (it)?”

**Condition VII: Violation of Canonical Word order**

- (1) Kwame letε kyerew kɔmaa Ama.  
K. letter wrote go give A.  
(Bill a letter wrote to Mary.)
- (2) Kofi ka kyereε Esi asem wɔ kaa no mu.  
K. told E. news at car the in  
(Paul said mary something to in the car.)
- (3) Adaka nera no Kofi piaε.  
Box yesterday the K. pushed  
(The yesterday box Mike pushed.)
- (4) Kwame den na ɔka kyereε Ama?  
K. what Foc. he:said to A.  
(John what did say to Mary?)
- (5) Mary kan Ottawa ansa na ɔreko nwoma no.  
M. read O. before she:went book the  
(Mary read Ottawa before she went to the book.)
- (6) ɔbaa no flawa tɔn wɔ Byward Market.  
Woman the flowers sell at Byward Market  
(The woman flowers sells at Byward market.)

(7) Me abofra a ɔtɔn akutu no nim.  
I child Rel. 3sg:sell orange the know  
(I the boy that sells oranges know.)

(8) Dɔkota no sekan no fae.  
Doctor the knife the took  
(The doctor a knife took.)

(9) Kofi huu no abofra wɔ ɔdan no mu.  
K. saw the child at room the in  
(John saw boy the in the room.)

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