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BIJECTIVE RELATIONS IN UNIVERSAL GRAMMAR AND THE SYNTAX OF HAUSA

University of California, Los Angeles

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Bijective Relations in Universal Grammar
and the Syntax of Hausa

A dissertation submitted in partial satisfaction of the
requirements for the degree of Doctor of Philosophy
-- in Linguistics

by

Laurice Anne Tuller

1986
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TABLE OF CONTENTS

CHAPTER 1: HAUSA AND GB, AN OVERVIEW

1. Introduction .................................................. 1

2. Modularity .................................................... 3

3. Lexical Features and the Projection Principle ................. 5

4. Theta-Theory ................................................ 11
   4.1 Thematic Roles ........................................ 11
   4.2 The Theta-Criterion ................................ 13
   4.3 Subject/Object Asymmetry in θ-Theory ................. 15

5. Case Theory .................................................. 19
   5.1 Outline .................................................. 19
   5.2 Nominative Case Assignment in Hausa ................. 24
   5.3 Genitive Case Assignment in Hausa ................. 28
     5.3.1 Inside NPs ....................................... 28
     5.3.2 The "Previous Reference Marker" and
           The "Compound Marker" .......................... 32
     5.3.3 Verbal Nouns ..................................... 39

6. 'Move-α' and Bounding Theory ................................ 50
   6.1 Syntactic Movement .................................. 50
     6.1.1 'Move-α' .......................................... 50
     6.1.2 Wh-Movement in Hausa ......................... 52
   6.2 Bounding Theory ..................................... 75
     6.2.1 Outline ........................................... 76
     6.2.2 Relativization vs. Other Wh-Extraction .......... 80
     6.2.3 Extraction out of N-Complement CNPs .......... 86
   6.3 Tense Features and wh-Movement in Hausa ............... 90
     6.3.1 Tense Features .................................. 91
     6.3.2 Subsequence Marking and Temporal Dependency ... 95
     6.3.3 The "Narrative Use" of Relative Aspect Marking . 101
     6.3.4 Operators and Relative Aspect Marking .......... 105
       6.3.4.1 Preagentual Focus and
               Indefinite Determination .................. 105
       6.3.4.2 Wh-Movement and Relative Aspect Marking . 109
       6.3.4.3 Temporal and Other Operators ........... 112
     6.3.5 Generalized "Wh-Marking" ......................... 120
     6.3.6 Wh-marking and wh-in situ ...................... 128
       6.3.6.1 Relative Marking as an S-structure
               Phenomenon ................................ 128
       6.3.6.2 Implications for the Vacuous
               Movement Hypothesis ...................... 133
     6.3.7 Implications for the Representation
               of Parasitic Gaps ................................ 138
     6.3.8 Concluding Remarks ............................... 141
7. The ECP ........................................ 145
  7.1 The Canonical Facts .............................. 145
  7.2 That-trace "Violations" in Null Subject Languages .... 149
  7.3 ECP Effects in Hausa ............................ 152
  7.4 S-structure Resumptive Pronouns ............... 157
  7.5 Extraction of Adjuncts and Extraction
      out of Non-Bridge Verb Complements ............. 161
      7.5.1 Proper Government of Empty COMP .......... 162
      7.5.2 Further Support for the S-Structure
            Resumptive Pronoun Analysis ............. 166

8. Control Theory ................................. 170
  8.1 Introduction ................................... 170
  8.2 Control in Verbal Noun Clauses ............... 172
  8.3 Proximate pro ................................. 175

9. Binding Theory .................................. 177
  9.1 Binding of Lexical Categories ................. 177
  9.2 Binding of Empty Categories ................. 182
  9.3 On the Status of Raising in Hausa .......... 183
      9.3.1 The General Case ........................ 183
      9.3.2 Copular Constructions .................. 184
      9.3.3 Raising out of Copular Constructions .... 190
      9.3.4 Other Raising Constructions ............ 192
  9.4 OPC Effects .................................. 194
  9.5 Subjunctive Disjoint Reference Effects ....... 200

Chapter One Notes .................................. 205

CHAPTER 2: BIJECTIVE RELATIONS

1. Introduction .................................... 223

2. Lexical Features and Bijection .................. 224
   2.1 Lexical Features and Feature Assignment .... 224
   2.2 The Bijective Character of Lexical Feature Relations .... 243

3. Case as a Bijective Relation .................... 250
   3.1 Introductory Remarks ........................ 250
   3.2 The CRP .................................... 251
   3.3 Generalized Case Conflict .................... 268
       3.3.1 Deriving the CRP ....................... 268
       3.3.2 Oblique Case .......................... 276
       3.3.3 PP Subjects, Adverb Subjects, and Default Case .... 282
   3.4 NP-Movement ................................ 288
       3.4.1 Raising from Noninfinite Verbs .......... 289
       3.4.2 Raising in Hausa Revisited ............ 291
       3.4.3 Raising in Romanian ................... 296
       3.4.4 Non-nominative Passives ............... 299

4. Bijection Deformations .......................... 305
   4.1 Motivating Abstract Elements and Structures .... 305
CHAPTER 3: NULL FEATURE-BEARERS: IDENTIFYING pro

1. Introductory Remarks .................................. 319
   1.1 Null feature-bearers in Hausa .................. 319
   1.2 Null arguments, "Rich" agreement, and the position of INFL .................................. 320

2. Null [NP, VP] ........................................... 325
   2.1 Introduction ......................................... 325
   2.2 Null object ≠ English "Indefinite Object Deletion" or "Null Complement Anaphora" ................ 327
   2.3 Null Object = ac .................................... 330
   2.4 Null object ≠ vbl ................................. 335
      2.4.1 Huang (1984) .................................... 335
      2.4.2 Null Object ≠ vbl ................................ 341
   2.5 Null Object = pro ................................... 344

3. Null [NP, NP] ........................................... 354
   3.1 Facts and an Analysis ............................... 354
   3.2 Rizzi (1986) ......................................... 362
   3.3 Similarities and Differences with French "Orphan Prepositions" ................................ 370
      3.3.1 Some similarities and differences .......... 370
      3.3.2 Accounting for the facts ..................... 376

4. Subject pro .............................................. 384
   4.1 Copular Constructions .............................. 385
      4.1.1 Introductory Remarks ......................... 385
      4.1.2 An Analysis ..................................... 388
   4.2 "AGR-drop" .......................................... 390
      4.2.1 The phenomenon ................................ 390
      4.2.2 Elements of an analysis ..................... 396
   4.3 Small clauses ....................................... 401

Chapter Three Notes ....................................... 403

CHAPTER 4: AUXILIARY VERB CONSTRUCTIONS IN HAUSA

1. Introduction ........................................... 409

2. The continuous aspect marker .......................... 411
   2.1 A surface bijective relation violation .......... 411
   2.2 The continuous marker is in INFL, not VP .......... 416
      2.2.1 Introductory remarks ......................... 416
      2.2.2 Interpolation of adverbial particles ......... 419
2.2.3 Null Complement Anaphora .................................. 421
2.2.4 Left Dislocation of VP ....................................... 423
2.2.5 Focus-Fronting of VP ......................................... 427
2.2.6 Focus-Fronting and Left Dislocation of VP in Hausa versus Breton Predicate Topicalization .... 438
2.2.7 Summary ......................................................... 443
2.3 CONT + (yin) + NP .............................................. 448
2.3.1 NP Complement? ............................................... 448
2.3.2 yin-Deletion? ................................................ 450
2.3.3 Ve .......................................................... 454
2.4 VP Complements: 8-role and Case Assignment .............. 458
2.4.1 8-role Assignment ........................................... 458
2.4.2 Case Assignment ............................................ 464
2.5 PP Complements ................................................. 466
2.5.1 Pe .......................................................... 466
2.5.2 On the Distribution of a .................................... 469
2.5.3 [P NP] ...................................................... 473
2.5.4 KE versus KEE ............................................... 476
2.6 Summary ......................................................... 479
3. Modals and Aspectuals ............................................. 479
3.1 The Pattern ..................................................... 479
3.2 Modals and Aspectuals are in VP, not INFL ................. 482
3.3 An Analysis .................................................... 484
3.3.1 Internal Argument ......................................... 484
3.3.2 External Argument ......................................... 488
4. Summary and Discussion ......................................... 490
Chapter Four Notes ............................................... 495

BIBLIOGRAPHY ..................................................... 500
LIST OF ABBREVIATIONS

*         ungrammatical
*(X)      ungrammatical if X is not present
(*X)      ungrammatical if X is present
1         first person
2         second person
3         third person
Adj        adjective
Adv        adverb
AGR        agreement
Cl         clitic
COMP       complementizer
COMPL      compleative aspect (= perfective)
CONT       continuous aspect
COP        copula
CP         = C" = S'
g/sg      empty category
ECP        Empty Category Principle
FOG        focus-marker
f         feminine
FUT        future
H         high tone
HAB        habitual aspect
I/INFL     inflection
indf      indefinite person marking ('one')
IP         = I" = S
L         linker; low tone
LF         logical form
LF'        discourse grammar
m         masculine
N         noun
NEG        negative particle
p         plural
P         preposition
PERF       perfective
PF         phonological form
Pr         primary verbal noun
PRT        adverbial/modal particle
REL       relative aspect
s         singular
Sec        secondary verbal noun
SPEC       specifier
STAT       adverbial noun of state
SUB        subjunctive
t         trace
TOP        topic
wh-        interrogative
V         verb
X0         lexical category
Xmax       maximal projection
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ABSTRACT OF THE DISSERTATION

Bijective Relations in Universal Grammar
and the Syntax of Hausa

by

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Doctor of Philosophy in Linguistics
University of California, Los Angeles, 1986
Professor Russell G. Schuh, Co-Chair
Professor Timothy A. Stowell, Co-Chair

This study investigates the syntax of Hausa from the point of view of the model of Universal Grammar being developed in the Government and Binding framework of generative grammar. Consequences of the idea that lexical feature-assignment relations, and identification relations in general, are one-to-one (bijective) are explored.

The principal theoretical results based on this hypothesis that are argued for in this work are: 1) a notion of generalized Case conflict, 2) a system of parameters of pro-Identification, and 3) evidence for the positing of empty feature-assigners (e.g. [y e]) as analogues to empty feature-bearers (e.g. pro).

Chapter one presents an outline of various aspects of Hausa syntax under an approach which attempts to explain similarity and variation among languages as the result of the interaction of general principles.
with parameters which are fixed on the basis of appropriate data. In chapter two, the hypothesis that there is a bijective condition on lexical feature-assignment relations is presented and extended, and its implications are noted. Chapters three and four represent in-depth investigation of two types of structures which are of interest in light of chapter two: (non-A' or A-bound) empty categories serving as feature-bearers or as feature-assigners in the bijective relation between feature-assigners and feature-bearers. Chapter three studies and develops a set of parameters to account for the appearance and distribution of zero pronouns in Hausa, as compared with languages such as Chinese, Portuguese, and French. Chapter four offers an analysis of the Hausa continuous aspect marker, which differs significantly from auxiliary-type verbs in many other languages.
CHAPTER ONE: HAUSA AND GB, AN OVERVIEW

1. Introduction

Linguistics can broadly speaking be defined as the science which studies the nature of human language. It is clear that what is referred to as language is in fact the result of a number of different phenomena. Factors such as knowledge of the world, socialization, and acoustics, for example, all enter into the production and comprehension of language. However, as neurolinguistic and other research continues to show, there appears to be a part of language which cannot be reduced to or derived from other areas (see discussion and references in Newmeyer (1983) for neurolinguistics and Anderson (1981b) for phonology, for example). That is, among the modules which together produce language is one which is specifically linguistic in nature; we can thus speak of linguistic knowledge or competence as a separate domain. It is this particular area, and its interaction with related domains such as those mentioned above, which is of interest to the study of the nature of human language.

Centuries of reflection on human language have led over and over again to the conclusion that some aspects of language are common to all human languages. Such was the opinion of the Port Royal grammarians in the 17th century who spoke of grammaire générale, for example. The recurrence of the idea of linguistic universals is not surprising given the remarkable similarities that can be observed among the languages of the world. This, plus the complexity of linguistic knowledge, the rapidity with which children acquire language, and the far from ideal
circumstances under which children learn their native language (lack of direct negative evidence and lack of presorted and filtered data) have led researchers to hypothesize that there is an innate language faculty—a linguistic part of each individual’s biological attributes. However, just as there are clearly similarities among the languages of the world, there are also differences. Linguistic theory must provide an explanation for both the universal aspects of human language and for the variation between languages. The goal of linguistic theory, then, is to give an explanation to the acquisition problem, while at the same time accounting for the existing (and apparently tremendous) diversity among individual languages.

One linguistic theory which I believe is making progress toward this goal is that of generative grammar, and, more specifically in the realm of syntax, the Government and Binding Theory (GB) developed in Chomsky (1981, 1986b) and related work. I will therefore adopt here the essentials of this theoretical framework and the general research program of generative grammar within which it is embedded.

The purpose of this introductory chapter is twofold. In keeping with the twin goals of providing explanation for both the universal and language-specific aspects of human language, it seems fitting to provide an introduction to both the theoretical constructs that will be used to give such explanation and to the principal language to which I propose to extend the empirical coverage of the theory. It is also hoped that this part of the thesis, in providing an outline of a GB analysis of Hausa syntax, will make the following chapters accessible to those who are unfamiliar with the “secrets” of GB theory and to
those who are unfamiliar with the "secrets" of Hausa syntax.\footnote{1}

This dual introduction consists of a presentation of the various subtheories of the GB framework and, where relevant, an analysis of Hausa phenomena covered by the subtheory. Certain topics will be treated in greater detail in order to illustrate the interaction of the various subtheories and to pave the way for discussion in later chapters. Since the major purpose here is to provide an overview of issues to be dealt with more fully in the remainder of the thesis, many questions of analysis and theory will necessarily be left open-ended.

2. Modularity

As has already been indicated, the view of language being taken here is a highly modular one. Language is seen as the result of the interaction of various independent modules such as perception and pragmatics. Intersecting with each of these is the module containing the language faculty, the principle concern of linguistic investigation. The model of universal grammar (UG = the language faculty) developed in work in generative grammar also shows a high degree of internal modularity. That is, it is hypothesized that the language faculty is made up of various independent components and principles which together account for the linguistic competence each native speaker brings to the acquisition task. A given linguistic phenomenon, then, may be the result of a rather complex interaction of various subparts of the grammar, themselves (ideally) simple in form.

Consider in this light the structure of the model of grammar that has grown out of work in generative grammar:
(1) Lexicon
   D-structure
   S-structure
   Move-α
   PF
   LF

It is hypothesized that UG contains the levels of representation or subcomponents in (1). D-structures (deep structures) are created by insertion of lexical items into structures of a restricted type in accordance with their lexical specifications. These D-structures are then "mapped onto" S-structure by the rule 'Move-α' (α being any set of categorial features). S-structures are then assigned PF (phonetic form) and LF (logical form) representations by rules, including 'Move-α', of these components. UG, then, contains a series of independent subcomponents. It also contains a series of subsystems of principles which specify the properties of the various levels. These subsystems of principles, which will be presented and discussed in the remainder of this chapter, are listed in (2).

(2)  (i) X-bar Theory  
      (ii) Theta Theory  
      (iii) Case Theory  
      (iv) Bounding Theory  
      (v) Binding Theory  
      (vi) The ECP  
      (vii) Control Theory  

(1) and (2) together constitute UG, the language faculty that each human possesses at birth. Consider now how the problem of descriptive adequacy is handled in this model. It is posited that embedded in the various subtheories of UG are a number of parameters whose value is fixed by the learner on the basis of linguistic input from the
surrounding speech community. Ideally, tremendous surface variation can be derived from the different settings of a limited number of parameters, thereby reducing the task of the learner and providing the building blocks of an answer to the acquisition problem. Notice that once again it is the modular character of UG which allows for the interaction of a small number of options to result in great surface diversity. UG with all parameters set produces the core grammar of a given language. That is, the "core" linguistic phenomena are represented by this model. However, the actual grammar of (an) individual speaker(s) of the language in question may include some non-core or peripheral properties—for example, constructions resulting from historical residue, borrowings, analogy, etc. Presumably such marked structures are limited and must be learned by direct evidence, as in the case of irregular noun plurals, for example.

3. Lexical features and the Projection Principle

The elemental assumption of the GB model of UG is the Projection Principle, stated informally in (3).

(3) Projection Principle (Chomsky 1981)

Representations at each syntactic level (i.e. LF, D- and S-structures) are projected from the lexicon, in that they observe the lexical properties of lexical items.

Consider first what the lexical properties referred to in (3) include. The lexicon consists of a set of lexical entries themselves made up of inherent features of various types which represent what it is to "know" a word. That is, all non-rule governed information about a word is
listed in each lexical entry. This includes phonological features which allow for phonetic interpretation of the word and semantic features which allow for semantic interpretation of the word, at the appropriate levels. Syntactic information includes indication of where the word may occur in a phrase—i.e. its categorial status (noun, verb, adjective, etc.), the type of complements it may take, and what semantic roles are assigned to these complements. Take the verb mine, for example. Its lexical entry will express the fact that it is a verb and that it subcategorizes for an NP complement to which it assigned the semantic role "Theme". What the Projection Principle requires is that these lexical specifications be met at all syntactic levels. That is, mine must have an NP complement at all relevant levels, this complement must bear the semantic role "Theme", and so on.

What are the consequences of this seemingly innocuous principle? They are in fact quite far-reaching; but, particularly significant is the result that many independently undesirable analyses are excluded, while other independently well-motivated analyses are required. Thus, for example, the analysis of 'NP to VP' infinitival clause complements as an NP complement followed by a phrasal complement is excluded because of the fact that the complement of such verbs is clausal at LF. It must therefore be clausal at all levels according to the Projection Principle: there may not be an NP object at any level. See Chomsky (1981: chapter one) for detailed discussion of this and other examples.

Let us now examine in greater depth two major consequences of incorporating the Projection Principle into UG. The first of these, trace theory (and empty categories, quite generally) is an instance
where the Projection Principle has the effect of forcing an analysis which has independent motivation. The second major effect of the Projection Principle is the significant reduction of the Base component, a result which advances the quest for a satisfactory answer to the acquisition question.

There is a variety of syntactic, semantic, and phonological evidence in support of abstract S-structures including traces of movement, which is reported in the literature and which we will not review here. See, for example, Chomsky (1975) in this regard. The basic idea is that various rules of these components require or are sensitive to the presence of an empty element which marks the original position of a moved element. What is of interest to us here is that the Projection Principle forces the presence of traces.

Consider again the verb mine. The trace theory of movement requires that there be a coindexed trace in object position when the direct object has been moved, as in a passive or wh-structures:

(4) a. the harbour was mined t₁

b. what did the CIA mine t₁

Notice now that since mine requires a direct object as a lexical property, this requirement must be met at all syntactic levels because of the Projection Principle. Therefore mine must have an NP complement in (4)—quite apart from trace theory. So, trace theory is subsumed by the Projection Principle, a positive result given the independent motivation for traces.

Another positive outcome of the Projection Principle is that it
allows for the Base to be reduced considerably. The Base has traditionally been taken to consist of a lexicon and a categorial component. The categorial component is a set of rules like that in (5) which specify phrase structure.

(5) VP --> V (NP) (PP) (S')

These rules are highly constrained by X-bar Theory (Chomsky 1970, Jackendoff 1977). X-bar Theory is a system of principles which places restrictions on the form of phrase structures and allows for the expression of cross-categorical generalizations. Stowell (1981) summarizes the X-bar principles as follows:

(6) X-bar Principles (Stowell 1981)

a. Every phrase is endocentric
b. Specifiers appear at the X" level; subcategorized complements appear within X'.
c. The head always appears adjacent to one of the boundaries of X'.
d. The head term is one bar-level lower than the immediately dominating phraseal node.
e. Only maximal projections may appear as non-head terms within a phrase.

This means that phrase-markers must have the form given in (7), where X ranges over the feature bundle [+N, +V], [+N, -V] defining a noun, [-N, +V] defining a verb, [+N, +V] defining an adjective, and [-N, -V] defining a preposition.

(7) a. X" --> [SPEC X'] - X'
b. X' --> X - ...

"SPEC" refers to specifier; its content varies according to category. The subject NP is taken to be a specifier of the predicate and
determiners, etc. are specifiers of NP, for example. '...' refers to the complements of a head: it is assumed that in the unmarked case all \(X^0\) may have the same types of complements. Assuming then (7) plus an INFL(ection) node (the AUX node of Aspects; see Akmaian et al (1979)) and a COMP(lementizer) node (see Bresnan 1972) and that both of these define maximal projections (Stowell 1981), we arrive at the structure in (8) for SVO languages like Hausa or English.

\[
(8)\]
\[
\begin{array}{c}
\text{COMP'} (S') \\
\text{COMP} \\
\text{SPEC} \\
\text{N'' (NP)} \\
\text{SPEC} \\
\text{N} \\
\text{...}
\end{array} \\
\begin{array}{c}
\text{I'' (S)} \\
\text{I' (Predicate)} \\
\text{I (INFL)} \\
\text{V'' (VP)} \\
\text{V} \\
\text{...}
\end{array}
\]

Notice that, as (6c) states, the head will in principle always occur in the same position with respect to its complements within a given language. The X-bar principles leave open to parametric variation the possibility of head initial language, like Hausa or English, in (8), or head final languages--deriving thus SVO and SOV languages, respectively. This parameter in turn has been argued to be a consequence of yet another parameter, the directionality of government (or feature assignment) (cf. Horvath 1986, Koopman 1984, Travis 1984), leftward assignment entailing a final head and rightward assignment entailing an initial head.

Notice now that the combination of X-bar Theory and the Projection Principle makes categorial rules like that in (5) largely redundant.
That the verb in a language like English is initial in VP follows from the head-initial setting of X-bar theory for English. The type of complements a given verb may occur with follows from the subcategorization frame of that verb and the Projection Principle, which requires that this frame be satisfied at all syntactic levels. Remaining categorial component effects, such as the relative order of complements, can also be made to follow from general principles (see Chomsky 1981, Stowell 1981, and discussion in section 5 of this chapter), resulting in total elimination for the need for a categorial component. The implications for the acquisition problem appear quite promising. Once the learner has discerned the subcategorization properties of a word, he has the information necessary to ascertain the character of the various syntactic configurations in which this word may appear: this information does not have to be learned separately. This acquisition advantage of the Projection Principle is summarized in Chomsky (1981:31) and bears repeating here given its centrality to the GB framework:

The grammar of a particular language can be regarded as simply a specification of values of parameters of UG, nothing more. Since the projection principle has the consequence of substantially reducing the specification of the categorial component for a particular grammar, it has corresponding implications for the theory of language acquisition. Someone learning English must somehow discover the subcategorization features of persuade, one aspect of learning it meaning. Given this knowledge, basic properties of the syntactic structures in which persuade appears are determined by the projection principle and need not be learned independently. Similarly, a person who knows the word persuade (hence knows its lexical properties, specifically, its subcategorization features) can at once assign an appropriate LF-representation and S- and D-structure when the word is heard in an utterance, or in producing the word, and will recognize the sentence to be deviant if other properties of the
utterance conflict with this assignment. Hence languages satisfying the projection principle in their basic design have obvious advantages with respect to acquisition and use.

4. Theta-Theory

4.1 Thematic Roles

Among the features generally assumed to be needed for an adequate semantic description are notions such as "agent", "goal", "theme", etc. This property of semantic description is maintained in GB Theory, where it is supposed that at the level of LF, the various expressions of a proposition must contain an indication of their thematic relation in the proposition. The term "argument" is used to indicate elements that must so bear a thematic (θ-) role to distinguish them from pleonastic elements such as there and impersonal it which do not bear θ-roles. Elements which bear θ-roles, then, are elements which have independent reference, basically elements appearing in complement position and subject (of NP or S) position.

θ-roles are matched/assigned under government, a structural notion underlying the various subtheories of GB. (See Stowell (1981) for development of development of θ-role matching.) Various formal definitions of government can be found in the literature, most of which are based on the notion c-command extended from that given in Reinhart 1976, whereby an element α c-commands an element β if the first branching node dominating α also dominates β, so that "first branching node" is replaced by "first maximal projection". For concreteness, the definition in (9) can be assumed for now.

(9) Government: α governs β iff α = X₀, α c-commands β, and β is not "protected" by an intervening maximal projection.
Clearly, then, lexical heads assign 8-roles to their complements, but how do subjects get 8-roles? There is evidence that subject 8-roles are assigned compositionally through VP. That is, the semantics of both the verb and its complement(s) may determine the nature of the subject. The by now classic example is the verb break (Chomsky 1981:104):

(10) a. John broke the window.  
b. John broke his arm.

The subject of break, under its most normal interpretation, bears an agent 8-role in (10a), but a patient 8-role in (10b). It is cases such as these which demonstrate that the subject 8-role is assigned indirectly by the VP which gathers the semantic requirements of both the verb and its complements.

Thus far, we have been referring to 8-rules as if they were unitary notions. This may be misleading, though, and it might be more accurate to talk about 8-roles as being made up of one or more semantic notions or features (Marantz 1981:53, Zubizarreta 1982:29). In a sentence like (11) (cf. Zubizarreta op. cit.), for example, John is clearly thetheme, but he may also be the agent (if he is himself the magician responsible for the transformation).

(11) John turned into a pumpkin.

There are in fact cases where it is the presence of an element in the sentence which adds a 8-role to an argument. Such is the case of manner adverbials, for example, which require the subject to be an
agent, as in (12) (from Jackendoff 1972).

(12) John **deliberately** rolled down the hill.

*John* is theme and agent here. As Chomsky (1981:139) suggests, one might want to distinguish basic grammatical relations such as verb-object, VP-subject, etc., and relations such as adverb-VP, adverb-subject, etc. Zubizarreta (1982), elaborating on this suggestion, develops a theory which differentiates argument 8-roles, the former, from "adjunct" 8-roles, the latter, based on differences between the two types of semantic relations.

We turn now from the nature and assignment of 8-roles to the status of 8-Theory in the grammar, restricting ourselves for now to argument 8-roles.

4.2 The Theta-Criterion

As was suggested above, there must be some sort of well-formedness condition on LF which will ensure that arguments be associated with a 8-role and vice versa. Chomsky (1981) proposes the 8-Criterion, an extension of proposals in Freidin (1978):

(13) **8-Criterion** (Chomsky 1981:36)

Each argument bears one and only one 8-role, and each 8-role is assigned to one and only one argument.

(13) means that a sentence like *John hit himself*—that is, *John* cannot simultaneously bear the agent and the patient 8-roles of the verb *hit*. This would be a case of one argument (*John*) bearing more than one 8-role. Similarly, *John hit Bill by Mary*
is not a grammatical sentence since hit, which assigns a single agent 8-role, here has two agent arguments, John and Mary.

Consider now the implications of (13) for 'Move-α' given the Projection Principle. Recall from the discussion surrounding (4) above that a trace may fulfill the subcategorization requirement of a verb. Consider the case of wh-movement, for example. The COMP position is a 8'-position—a position to which no 8-role is assigned. Therefore arguments originating in 8-positions may move to COMP without incurring a 8-Criterion violation. It is the trace of wh-movement, a variable, which bears the 8-role, satisfying the 8-Criterion. Movement from a 8-position to a 8'-position is thus in principle possible. However, movement of an argument from a 8-position to another 8-position is excluded since the moved argument ends up with two 8-roles. Hence, an analysis of *John hit as [John hit t₁] is excluded, as are all cases of subject to object raising: e.g. [I want John [t₁ to leave]]. In order for John to appear as the subject of to leave, this latter must assign it a 8-role (since the 8-Criterion holds at D-structure). And, if want has a direct object position, it must 8-mark it. That is, subcategorization entails 8-role assignment, and, in fact, it is likely that the former can be reduced to the latter (cf. Chomsky (1981:37) and discussion in chapter 2). This means that John, after movement, bears two 8-roles, in violation of the 8-Criterion.

We have considered the role of the 8-Criterion and the limits it places on the rule 'Move-α'. Our remarks have been primarily concerned with 8-marking of complements and movement to a complement position. We consider in the next section the nature of 8-marking to the subject.
position and what this entails for 'Move-α'.

4.3 Subject/Object Asymmetry in θ-Theory

We have just seen that movement to object position is excluded since subcategorization for an object entails θ-marking of the object. What about movement to subject position? A fundamental asymmetry between subjects and complements is that a verb (or VP) does not subcategorize for a subject as it does for an object. Rather, the apparent obligatory presence of the subject position must be made to follow from other considerations—perhaps a requirement on predicates that they must be predicated of something. We leave this open for now.² What follows from the fact that the subject position has nothing to do with subcategorization is that the subject position is not necessarily a θ-position. A verb may or may not (indirectly) determine a subject θ-role. This means that non-arguments may appear in subject position of certain verbs, as the sentences in (14) illustrate for raising verbs and verbs with passive morphology.

(14) a. It seems that Mary is happy.
   b. There were several students in the library.
   c. It is thought that John is crazy.

We saw above in reference to wh-movement that movement from a θ-position to a θ'-position is permitted by the θ-Criterion. We should expect it to be permissible to θ'-subject positions as well. The result is a raising structure: Mary seems to be happy. Several students were in the library, etc. The θ-role is assigned to the chain composed of the trace and its coindexed antecedent. The unique relation imposed
by the θ-Criterion holds then of θ-assigners and argument chains.

Consider now structures which allow pleonastic subjects in Hausa. Hausa, like many languages which allow null subjects (= “pro-drop”), has no overt pleonastic elements. This is not surprising since pronominal subjects are generally used only for emphasis in pro-drop languages: the function of a place-holder certainly does not involve emphasis, as the fact that contrastive stress is impossible on pleonastic pronouns in English indicates. There are two types of structures in which a pleonastic element, formally an empty category with third person singular INFL, appears in Hausa. The first is with predicates, such as fi ‘exceed’ and yanaa da + N ‘it is with N’, which may take propositional subjects. These correspond more or less to English ‘It-Extraposition’ constructions.

(15) a. [Mu taashi yanzu] yaa fi kyau
   1p leave now 3sm exceed goodness
   ‘For us to leave now is better’

   b. ti yaa fi kyau [i mu taashi yanzu]
   ‘It’s better that we leave now’

   c. A sami gooro a Poitiers yanaa da wuyaa
      indef get kolas in P 3sm with difficulty
      ‘To get kola nuts in Poitiers is difficult’

   d. ti yanaa da wuyaa [i a sami gooro a Poitiers]
      3sm with difficulty indef get kolas in P
      ‘It’s hard to get kola nuts in Poitiers’

(16) a. Aisha taα fi Aabu girmac
     A. 3sf exceed A. size
     ‘Aisha is bigger than Abu’

   b. *Yaa fi Aisha (Aabu) girmac
      3sm exceeds A. A. size
      ‘Aisha is bigger (than Abu)’
c. Maalamar naa da wuyaa
teacher this 3sf with difficulty
'This teacher is hard'

d. *Yanaa da wuyaa maalamar naa.
3sm with difficulty teacher this
'This teacher is hard'

These predicates clearly assign subject θ-roles, as the examples in (16) show. As in English, sentential subjects may be extraposed, in which case they are presumably adjoined to VP, as in (15b) and (d). The empty category in subject position in this case is an empty pleonastic element, equivalent to English it.

The other structure which has a pleonastic subject is that containing predicates such as kamaataa 'be necessary', doolee (nee) 'be obligatory', gaaara 'be preferable', sulo kadan 'soon; almost' and others; these are exemplified with the verb kamaataa in (17a). Like raising verbs such as seem in English, kamaataa may not appear with a sentential subject, as in seen in (17b).

(17) a. Yaa kamaataa Aisha ta gama aikinta
3sm be-necessary 3sf finish work-her
'It's necessary for Aisha to finish her work'

b. *(Aisha ta gama aikinta) yaa kamaataa
3sm
'That Aisha finish her work is necessary'

c. *Aisha taa kamaata tta gama aikinta
3sf 3sf
'Aisha must finish her work'

The subject position of kamaataa is therefore a θ'-position, occupied at D-structure by a non-argument empty pleonastic element, which is third person singular masculine in Standard Hausa (as seen by the agreement on its INFL), though in some dialects it is feminine (R.
Schuh, p.c.). From what has been said so far, we should expect that *kamaataa* is a raising verb—that is, an embedded subject ought to be able to move to the matrix 0'-position. However, this is not possible, as (17c) illustrates. We shall see in section 6 below that raising is normally blocked in Hausa by the requirements of the Binding Theory, and, in particular, the fact that Hausa has subjunctive clauses where English has infinitival clauses.

Completing now our discussion of the types of elements that may occur in subject position, we turn to quasi-arguments (Chomsky 1981). These are the type of NPs found in the subject position of a weather verb for instance. They are not referential in that they do not denote, yet they are similar to arguments in that they can control PRO: 

*It sometimes rains after [PRO snowing].* (We return to Control Theory in section 8 below.) Weather predicates in Hausa consist of the verb *yii* 'do/make' plus a noun such as *sanyii* 'cold', *ruwaa* 'water', *iskaa* 'wind', *zaafii* 'heat', etc. The subject of such predicates is empty, as in the case of non-arguments. But, instead of the third person singular INFL which appears in the latter case, weather predicates require an indefinite INFL, the inflectional equivalent of the pronoun *on* in French or *one* in English. (Hausa has no pronoun corresponding to this combination of person, number, and gender features.)

(18) An yi zaafii/ruwaa/sanyii/iskaa jiya
    indef do heat water cold wind yesterday
    'It was hot/rained/was cold/was windy yesterday'

The acceptability of sentences like that in (19), where a weather predicate clearly takes an argument subject, suggests that viewing
weather expressions as instances of verb-subject idioms (Chomsky 1981) may be correct.

(19) a. Raanaa taa yi zaafii
sun 3sf do heat
'The sun was hot'

b. Allah yaa yi ruwa'a.
A. 3sm water
'Allah rained'

(cf. French: Jupiter/Dieu/IIl tonne 'Jupiter/God/It is thundering')

A verb such as kaanaa 'catch', for example, may take a semantically full complement, as in Ali yaa kaanaa dookii 'Ali caught the horse'. It may also be part of the idiomatic expression kaana baakii 'abstain from eating in deference to a fast', where baakii (literally 'mouth') is analyzed as a quasi-argument. Likewise, the predicate yi zaafii 'do heat' may take an argument like raanaa 'sun' as subject (19a) or it may participate in an idiomatic expression with an impersonal/indefinite subject (18). (See Koopman 1984:111 for discussion of the nature of the 9-role assigned to quasi-arguments.)

5. Case Theory
5.1 Outline

Continuing our survey of lexical properties and the principles which govern them, we turn to Case Theory. Case Theory regulates the matching/assignment of abstract Case features such as nominative, objective, genitive. Whether or not these abstract Case features are realized phonologically, and, if so, in what way, has to do with the morphology of the particular language. Though not a lot of work has
been devoted to the relation between morphological ("surface") Case and abstract Case, it has generally been argued that the two do not necessarily coincide and that they are subject to different kinds of constraints. See, in particular, Vergnaud (1982) on this. The most obvious divergence between surface Case and abstract Case is that while it is hypothesized that NPs in all languages have abstract Case, clearly only a subset of languages has morphological Case. Postulation of abstract Case allows for a characterization of the distribution of lexical NPs and the appearance of semantically empty prepositions, such as of in English.

Consider the Case-assignment rules in (20), proposed for English, and the Case Filter in (21), proposed for UG (Rouveret and Vergnaud 1980, Chomsky 1980).

(20) a. NP is nominative if governed by AGR
b. NP is objective if governed by V
c. NP is oblique if governed by P
d. NP is genitive in the structure [NP ___ X']

(21) Case Filter: *NP if NP has phonetic content and has no Case

These predict, for example, that NPs may occur as subject of a tensed clause (in English, [+Tense] and AGR must co-occur) or object of a transitive verb, as in (22a), though they may not occur as subject of a tenseless clause, as in (22b).

(22) a. John likes pea soup
b. *John tried [g' himself to leave]

Notice that θ-Theory would not rule out (22b) since the infinitival does assign a θ-role to its subject which is separate from that
assigned to the matrix subject. That this is so can be seen more
obviously by comparing with the sentence in (23).

(23) It is unclear [g' who | g PRO to see t₁ ]

The matrix predicate here does not assign a θ-role to its subject as is
evidenced by the fact that non-referential it occurs in this position,
yet the predicate 'to see t₁' clearly does have an experiencer subject,
symbolized as PRO, though its reference is arbitrary. Thus, it is the
Case Filter (21) which disallows (22b) since himself is not in a
position to which Case can be assigned.

Recall from Section 3 above that one of the results of X-bar
Theory is that significant cross-categorical generalizations can be
made. It is predicted that all X₀, no matter what X is, ought to be
able to take the same kind of complements. One should expect that a
noun derived from a verb taking an NP complement may itself take an NP
complement. However, Case Theory, and the fact that only [-N]
categories are Case assigners in English, prevent 'N NP' sequences
from surfacing as such. Rather, a so-called "dummy" Case-marker is
inserted in order for NP to receive Case--hence the existence of
alternations such as destroy *(of) the city/ destruction *(of) the city,
which would otherwise be anomalous for X-bar Theory. This "rescue"
technique is rather widespread in languages of the world and there
exists in the literature a myriad of evidence that dummy Case-markers
do not always behave like true (and sometimes, even homophonous)
prepositions. See, for example, Vergnaud 1974 and Jaeggli 1982 on
French and Spanish and Borer 1983 on Hebrew.
Besides the government requirement on the Case assignent relation, it has been proposed (Chomsky 1981, Stowell 1981) that there is also an adjacency requirement on this relation. That is, Case-asginers must not only govern but be linearly adjacent to the NP to which they assign Case. This requirement, alluded to above in section 3, gives an account of the respective ordering of the complements of a head in examples like those in (24), allowing ultimately for elimination of the categorial component, a desirable result, for the reasons given above.

(24) a. John bought the book yesterday/for Mary
    b. *John bought yesterday/for Mary the book

The NP the book, in order to receive objective Case from the verb buy, must be adjacent to it; (24a) obeys this requirement, while (24b) does not.

The Case Filter is generally assumed to be accompanied by some sort of prohibition of Case conflict--i.e. instances where a single NP is assigned two distinct Cases.8 A restriction of this kind allows for a stipulation-free account of the distribution and appearance of the complementizers for and that in English, for example.

(25) a. For/*That Mary to leave now would be insane
    b. That/*For Mary left is better for everyone

(26) a. I prefer for/*that Mary to leave now
    b. I prefer that/*for Mary leave now

(27) For [3 Mary AGR leave ]
   |     ↑   ↑   |
   |     _____ |

22
Tenseless clauses with an overt subject require the Case-assigning complementizer for in order for Case to be assigned to the subject, which cannot be assigned nominative Case since tenseless clauses lack AGR. However, tensed clauses, which do contain AGR, may not occur with the complementizer for since the subject NP would receive two Cases—nominative Case from AGR and oblique Case from for, as is schematized in (27). Configurations like that in (27) are excluded because of "Case conflict".

In chapter 2 of this study, an enlarged version of "Case conflict" will be examined. This is the proposal that the Case relation is unique (Ayoub 1981, Koster 1984, Vergnaud 1982)—that is, that there is only one Case-assigner per Case-bearing element and vice-versa. Ayoub (1981:194) argues, on the basis of facts regarding the accusative Case-assigning complementizer ?anna in Standard Arabic, that the notion of Case conflict should be extended to mean that a lexical NP cannot receive Case, whether identical or different, from two different sources. In (28) the NP ražula 'man' cannot be moved to the position following ?anna:

(28) *basiba ?anna r-ražulan1 ra?a zaydun e1
   believe-you that the-man-acc saw Z-nom
   'You believed that Zaydun saw the man'

The one-to-one restriction on the Case relation predicts this result since ražula has accusative Case from its position of origin, as a complement of V, and by virtue of the fact that it is governed by ?anna, an accusative Case-assigner. In other words, ražula has accusative Case from two sources. I will adopt, and extend, this
proposal (which is formalized in Vergnaud 1982) in this study.

Summarizing, Case Theory consists of a set of Case-assignment (matching) rules, which assign (or match) Case features of verbs and prepositions (and nouns, in some languages) to NPs, and a Case Filter which ensures that every lexical NP has Case. The relation between Case-assigners and Case-bearers, like that between θ-role assigners and bearers, is a unique relation in the sense that there is a bijective correspondence between Case-assigners and lexical NPs. This latter property will be explicitly developed and more fully argued for in chapter 2.

As in English, Case in Hausa is assigned by [-N] lexical categories. Assignment of objective and oblique Case (if these are to be distinguished in these languages—see Kayne (1984, Ch.9)) presents no novelties. Nominative and genitive Case in Hausa, however, raise interesting questions which will become important in later discussion.

5.2 Nominative Case Assignment in Hausa

We saw above that nominative Case is assigned to the subject position of tensed clauses in English, but not to the subject position of tenseless clauses. Since [+Tense] and AGR always co-occur in English, it is rather difficult to affirm whether it is the presence of tense or of agreement which is responsible for nominative Case assignment. These two components of INFL do not necessarily coincide, however, in all languages.

It has been argued, on the basis of agreement-bearing infinitives in languages like Portuguese, which do allow subjects, that it is AGR
which assigns nominative Case. Following work by Piccallo (1984) on Catalan, I would argue that Hausa subjunctives provide another example of nominative Case assignment by INFL containing only AGR.9

Piccallo argues that the difference between infinitival clauses and subjunctive clauses is that the former are (generally) [-AGR], while the latter are [+AGR]; both lack specification for tense features. The parallel between infinitives and subjunctives can be seen by examining languages which use both constructions productively, as in French. The time reference of the subjunctive clauses, like the infinitival clause, is dependent on that of the matrix predicate:

(29) a. Ecoute, il a fallu que tu dises la vérité
    \[ \text{dire} \]
    \[ 'Listen, it was necessary that you tell the truth' \]
    PERF \[ \text{to tell} \]
    
    b. Ecoute, il fallait que tu dises la vérité
    \[ \text{dire} \]
    \[ 'Listen, it was necessary that you tell the truth' \]
    IMPERF \[ \text{to tell} \]
    
    c. Il faut que tu dises la vérité
    \[ \text{dire} \]
    \[ 'It is necessary that you tell the truth' \]
    PRES \[ \text{to tell} \]

Both versions of (29a) entail that you told the truth. (29b) leaves the possibility open, and in (29c) dire is a hypothetical (future) action. Piccallo further demonstrates that the morphological tense marking on subjunctive verbs in Romance languages like Spanish and Catalan in which the subjunctive still contains this marking is entirely dependent on the tense marking of the subcategorizing verb.

In these languages which have productive use of both a subjunctive and an infinitive, only the infinitival structure may be used in a
context where the matrix subject is coreferential with the embedded subject.

(30) a. *Je veux que j’aille en ville
   b. Je veux aller en ville

Chomsky (1981:142, fn. 45) cites J. Guéron in this regard, who suggests that this fact may be related to the Avoid Pronoun Principle, an informal principle of UG which states that lexical pronouns are to be rejected if an equivalent structure with an empty category is available, though there are problems with this approach, as Piccallo (1984) argues, for languages (like Spanish and Catalan) which allow empty subject pronouns quite generally and yet still are subject to the restriction in (30). Whatever the correct explanation, it is not surprising that in Hausa, where (30a) is grammatical (see (31a)), (30b) is non-existant. A sentence like that in (31b), whose equivalent in French must involve disjoint reference between the two subjects, is ambiguous in Hausa.

(31) a. Inaa soo in tafi garii
    ls want ls go town
    CONT SUBJ
    'I want to go to town'
   
   b. Ali yanaa soo ya tafi garii
      A 3sm want 3sm go town
      CONT SUBJ
      'Ali wants (him) to go to town'

An overt subject pronoun in the embedded clause of (31b) forces coreference between the two subjects; we return to these structures below in section 8.
It seems reasonable to me to analyze Hausa subjunctive clauses as being like infinitives in that the tense operator is unspecified and like tensed clauses in that they contain AGR. The dependency of a subjunctive clause in Hausa on the higher verb can be seen in the examples in (32). Where the realization of the action of the verb is hypothetical (/unrealized), as in (32d), it is the subjunctive which is used, supporting the idea that the subjunctive has an unspecified (completely unrealized) tense operator.

(32) a. Ali yaa ssa yaaraa su ci naaman raaRumii
   A 3sm make children 3pm eat meat-of camel
   PERF SUBJ
   'Ali made the children eat camel meat'

b. Ali yaa cee su ci naaman raaRumii
   A 3sm say 3pm eat meat-of camel
   PERF SUBJ
   'Ali said for them to eat camel meat'

c. Yaaraa su ci naaman raaRumii yaa baar ni maamaaaki
   children 3pm eat meat-of camel 3sm give me surprise
   SUBJ PERF
   'That the children ate camel meat surprised me'

d. Yaaraa su ci naaman raaRumii baa laifii ba nee
   children 3pm eat meat-of camel NEG fault NEG COP
   SUBJ
   'For children to eat camel meat is not a sin'

We have suggested that nominative Case is assigned in Hausa whenever there is agreement. This raises the question of whether there exist any clauses at all in Hausa in which an NP may not appear in subject position. We should expect that these clauses, if they exist, would have no agreement. This is the situation found in gerund clauses, which do not allow nominative subjects, as (33) illustrates.
(33) (*Ali) karanta littaafii ga (*Musa) rubuuta littaafii ba a d'aya
   A  reading  book  and  M  writing  book  NEG  one
   ba nee
   NEG  COP
   '(*Ali) reading a book and (*Musa) writing a book are not the same
   thing'

Although gerund clauses lack agreement features, they also lack tense
features, and thus these facts, like the others mentioned in this
subsection, are compatible with a hypothesis in which nominative Case
assignment is dependent on either an overt AGR or an overt Tense. We
will have occasion to return to this matter in our discussion of "AGR-
drop" in chapter 3.

Although subjects in gerund clauses cannot receive nominative
Case, since this latter is dependent on overt material in INFL, they
may appear there with genitive Case, as we will see directly in our
discussion of genitive Case in Hausa.

5.3 Genitive Case Assignment in Hausa

5.3.1 Inside NPs

As in English, nouns may not take bare NP complements in Hausa.
Like French, Hausa has but one "solution" for NP complements of Ns (not
having a structural rule of genitive Case assignment like 'a in
English): "dumay" Case-insertion. This involves insertion of a
preposition na (masculine) /ka (feminine) which agrees in gender with
the head noun. Case-insertion in Hausa provides an illustration of the
independence of syntactic and phonological attachment of clitics (cf.
Klavans 1985). While na/ka are presumably attached to the NP
complement to which they must assign Case, like of in English, de in
French, etc., they are phonologically attached to the head noun resulting in a suffixed \(-n/-\rlap{r}\), respectively. (\(\rlap{r} \longrightarrow \rlap{r}\) syllable-finally in Hausa.) This phonological attachment, though usually greatly preferred, is not obligatory, and is in fact impossible when the head is empty or when it already has a suffixed clitic.

(34) a. gidaa na Aisha / gidan Aisha
    house of A    house-of A
    'Aisha's house'

    b. mootaa ta Ali / mootar Ali
    car of A    car-of A
    'Ali's car'

    c. na Aisha / ta Ali
    of A        of A
    'Aisha's (m)'    'Ali's (f)'

In the case of "stacked" genitival constructions, the Case-marker may attach to the last word of the preceding \(N'\), providing it governs this element. Thus, in (35a) and (b), phonological attachment is impossible since the Case-marker (which is part of the following NP in the syntax) does not govern the preceding word (since the latter is protected by an intervening maximal NP or AP, whereas in (35c) phonological attachment is possible because the preceding word is governed by \(na/ta\) (i.e., there is no intervening maximal projection). (The gender of the Case-marker must agree with the head \(N\) when \(na/ta\) is not phonologically attached; with phonological attachment, the \(na\) Case-marker may agree with the gender of either the head \(N\) or the \(N\) it attaches to, as illustrated in (35d).)
(35)  a. [N' unguwär [NP mātaanen [NP daa'ii]] na Mātaamai
       *daa'ii Mātaamai
       quarter people bush of M
       'Matameye’s neighborhood of people from the country'

    b. [N' hiilin waasan] [NP makaaranta [AP Aaraamaa]] na
       *Aaraaman/r
       field-of play-of school small of
       Mātaamai yard da kyau
       M 3sm with nice
       'Matameye’s small school’s play yard is nice'

    c. [N' buuhan [NP [N haatsi]]] na Ali
       haatsin
       sack millet of A
       'Ali’s sack of millet’

    d. [N' akwaatin [NP [N taabaal]]] na/*ta Ali
       taaban/taabar
       box(m) cigarettes(f) of A
       'Ali’s box of cigarettes’

When the NP complement is extraposed, however, phonological attachment
of the Case-marker is impossible, indicating that while syntactic
insertion and attachment may apply in the domain of N’ or N”,
phonological attachment may occur only within the domain of N’. Compare
(a)-(c) in (37)-(39), where (a) is the non-extraposed structure and (b)
and (c) are extraposed structures. I am supposing here, following
Stowell (1981), that modifiers such as PP, AP, S’, etc., are
immediately dominated by NP, and preceded by N’, as illustrated in
(36).

(36)
(37) a. [NP[N' littaafin Ali] [pp bisa sarkii]]
   book-of A on emir
   'Ali's book about the emir'

b. littaafii ti bisa sarkii na Ali

c. *littaafii ti bisa sarkin Ali

(38) a. [NP[N' zanee Aisha] [Ap baRii]]
   cloth-of A black
   'Aisha's black cloth'

b. zanee ti baRii na Aisha

c. *zanee ti baRin Aisha

(39) a. [NP[N' littafin Aisha] [sg da muka ganii]]
   book-of A REL lp see
   'Aisha's book that we saw'

b. littaafii ti da muka ganii na Aisha

c. *littaafii ti da muka ganin Aisha

The fact, illustrated in (40), that na/ta may not be "pied-piped"
like other prepositions can be explained, following Borer 1983, by the
fact that Case-insertion applies at PF in Hausa, or at least after the
syntactic rule of 'Move-α'. In other words, the preposition does not
pied-pipe simply because it is not present at the time of syntactic
movement, and after movement of the NP, its environment is no longer
met. Notice that if some Case-assignment takes place only at PF, this
entails that the Case Filter is a PF condition, as Borer argues, since
NPs to be Case-marked in PF are Caseless at S-structure.

(40) a. *Na waa1 kika karanta littaafii ti
   of who 2sf read book
   'Whose book did you read?'

b. Da waa kika zoo
   with who 2sf come
   'With whom did you come?'

31
c. Daga inaa kika zoo
   from where 2af come
   'From where do you come?'

d. Bisa mee kika doora littasfii
   on what 2af put book
   'On what did you put the book?'

Summarizing, we have seen that genitive Case-assignment in Hausa
involves adjunction of a dummy preposition na/ta to an NP dominated by
N' or N". This Case-marker then criticizes to a host phrase to its
left in N'.

(41) na-Insertion (Preliminary version):

O ---> na/ta / [x ... NP], where X is some projection of [+N, -V]

We assume here a model like that in Borer 1984 in which rules of
inflection (of which na-Insertion is one) may in principle apply at any
level. Rule (41) contains the restriction that it may not apply prior
to 'Move-α'. (And, in fact, in cases of movement, it must apply at S-
structure in order for the requirements of the ECP, an LF condition, to
be met; we return to this below.)

5.3.2 The "Previous Reference Marker" and The "Compound Marker"

Before turning to other environments of genitive Case-assignment,
I would like to distinguish the na/ta Case-marker from two other
(largely) homophonous morphemes. One is the so-called "previous
reference marker" and the other is what I will call the "compound
linker". I will discuss each of them in turn.

It is fairly clear that the previous reference marker (PRM),
synchronously speaking has nothing to do with the Case-marking, though
it may be related to the compound linker (and ultimately to the Case-

marker), as will be seen later on. Unlike the Case-marker, it may
appear only as a suffixed -\text{n/-r} and may be attached only to the head N.
Furthermore, it has an associated low tone which is added to the tone
of the final syllable of the head N, whereas the high tone of the na/\text{ta}
Case-marker deletes under phonological attachment. Finally, the PRM
may co-occur with the Case-marker. These properties are illustrated in
(42a-d), respectively.

(42) a. Naa san m\text{oot\-\text{\`a}}} / *mootaa ta
  le know car-PRM
  'I know the car (in question)'

  (NB. Low tone (\text{`}\}) + Low tone ---\rightarrow Low tone)

b. ga b\text{\`aak\-\text{\`o}}} daga K\text{\`a}}no / b\text{\`aak\-\text{\`o}}} daga tsooh\text{\`oo}}
  here's guest-PRM from K  guest-PRM old
  'Here's the guest from Kano (in question)'
  'Here's the old guest (in question)'

  (NB. High tone (\text{`}\}) + Low tone ---\rightarrow Falling tone (\text{\`}))

c. b\text{\`aak\-\text{\`o}}} daga K\text{\`a}}no / b\text{\`aak\-\text{\`o}}} daga Ali
  guest-PRM from K  guest-of A
  'the guest from Kano (in question)'/ 'Ali's guest'

  (NB. High tone (\text{`}\}) + Low tone ---\rightarrow Falling tone (\text{\`}))

d. b\text{\`aak\-\text{\`o}}} *(na) Ali
  guest-PRM of A
  'The guest of Ali (in question)'

I conclude that the PRM is a specifier of N, generated in \{SPEC, N\}'
position, like other determiners in Hausa. In PF, it criticizes to the
head of the N' it specifies.

There is also a suffixed -\text{n/-r} linker(L) between prenominal
adjectives and the nouns they modify. Like the PRM, it never appears
as na/\text{ta}, though it has no associated low tone. As we have already

33
seen, adjectives may also appear postnominally, giving two possibilities for adjectival modification of a noun.

(43) a. saabon zanee
    new-L cloth
    'new cloth'

b. zanee :saaboo
cloth new
    'new cloth'

Since all other nominal modifiers—prepositional, relative, etc.—must follow the head, I will assume that the modifier position in post-head, (np N' MOD), in general and that prenominal adjectives are not a consequence of lexical insertion following X' Theory. Rather, it can be argued, following an idea of Stowell (1981:282-8) for English, that prenominal adjectives in Hausa are the result of a word formation rule. It will be shown that the sequence adjective plus noun in Hausa is a sort of compound and that the -n/-ɛ marker on the adjective is not a Case-assigner, but part of compound formation.

There is no evidence that the -n/-ɛ linker on prenominal adjectives is a Case-assigner. If it were a Case-assigner, we would expect its appearance to depend on whether or not the following head is in a Case-marked context. If, for example, a noun preceded by an adjective occurs in a non-Case-marked position, insertion of a Case-marker should be unnecessary if the noun already has Case from the marker on the adjective. Since in fact Case-insertion is required in this situation, as illustrated in (44), we have an argument that the adjective linker does not assign Case.
(44) son / *soo saabon zanee
    liking-of liking new-L cloth
    'liking new cloth'

What is the function of the adjective linker, then? Note, first
of all, that Hausa does have a category adjective, though adjectives
are very often indistinguishable from nouns since most adjectives may
also function as nouns. A word like faarii, for example, means either
'white' or 'whiteness', as the sentences in (45) illustrate.

(45) a. Faarin anasaaruu yaa baa su maamaakii
    white-of Europeans 3s give them surprise
    'They were surprised by the whiteness of the Europeans'

     b. Sun ga faraaren mutaanee
          3p see white(p)-L people
    'They saw White people'

Not all adjectives may appear as nouns, however, as (46) shows.

(46) a. *Kaaton anasaaruu yaa baa su maamaakii
    huge-of Europeans 3s give them surprise
    'They were surprised by the hugeness of the Europeans'

     b. Sun ga Rattan mutaanee
          3p see huge(p)-L people
    'They saw huge people'

An appropriate analysis of the structure of 'Adj + N' sequences
will also give us an answer to the question of the function of the
linker in these constructions. What I suggest is that these are
compounds. Besides the X' argument already given, there are several
facts which support this view. Fixed expressions such as 'White House'
and 'Caucasian' must use the order 'Adj + N' in Hausa, whereas 'white
house' and 'light-colored person' may use the order 'N + Adj'. This
difference is illustrated in the examples in (47).
(47) a. 'White House' = faarin gidaa / *gidaa faarii
white-L house house white
b. faarin mutum / mutum faarii
white-L man man white
'Caucasian' 'light-skinned person'
c. jan baaRii / baaRii jaa
red-L mouth mouth red
'Cardinal bird' 'red mouth'
d. Raramar salla / salla Raramaa
small-L festival festival small
'Ramadan Festival' 'small festival'

In constructions containing both a prenominal and a postnominal adjective, the prenominal adjective plus noun is taken as a constituent. Utterance of a phrase like that in (48a) presupposes the existence of a 'white one', where 'one' is 'little gown'. And, (48b) supposes the existence of a 'big black gown'.

(48) a. Raramar rigaa baaRaa
small(f)-L gown black(f)
'little gown which is black'
b. baaRar rigaa Raramaa
black(f)-L gown small(f)
'black gown which is little'

And, whereas more than one adjective may follow a noun, stacking of prenominal adjectives is extremely marginal at best (and gets worse with an increase in adjectives).

(49) a. Ga [np [N, zanen Aisha] baRii Raramii]
here's cloth-of A black(m) small(m)
'Here's Aisha's little black cloth'
b. *Ga Raramin baRin zanen Aisha
here's small(m)-L black(m)-L cloth-of A
'Here's Aisha's little black cloth'
Whereas X’ Theory does not limit the number of nominal modifiers, it is not surprising that a word formation process would have such limits. Also supporting the view of pronominal adjectives as being the result of a lexical process are the arguments in Mohamad (n.d.), based on frequency and distribution, that post-position is the "unmarked or 'favorite' order of the adjective in Hausa" and that pre-position is "marked or restricted".

We take the above facts to indicate that 1) pronominal adjective plus noun sequences form constituents and 2) this constituent is like that of a compound. The -n/-r linker here can be viewed as a result of compound formation.

There is one other similar compound in Hausa composed of a noun plus linker plus demonstrative adjective, as in (50).

(50) a. goonar cân
    farm-L there
    'that farm'

b. dookin nân
    horse here
    'this horse'

c. goonâr (*ta) cân
    farm-L/PRM of there
    'that farm (in question)'

d. goonar cân ta Aisha
    farm-L there of A
    'that farm of Aisha'

That the linker here is not a Case-marker can be seen in (50c) which shows that can/nan cannot take Case. (Compare with (42d) above.) I suggest that the marker found between a noun and a following demonstrative adjective is once again the compound linker. A noun is joined to a demonstrative adjective, the latter in fact criticising to the former, as shown by the polarity of the tones of the demonstrative adjective with that of the last syllable of the noun and the fact that
a Case-marker may not cliticize to the preceding demonstrative adjective (as in (50d) \textendash cf. (34d)).

Although it is certainly not unusual for a language to use one morphemic form for several functions (cf. English a, for example), the similarity of the environments of the various -n/-r in Hausa is rather curious and deserves an explanation. Note, first of all, that 'N + NP' compounds in Hausa always contain the Case-marker, as in English 
\textit{coat of arms}. A significant fact here, I think, is that unlike other uses of the na/ta Case-marker, that found in fixed expressions may not be left phonologically unattached, even marginally\textendash a fact reminiscent of the linker in the other types of compounds I have proposed here.

\begin{enumerate}
\item[(51)] \textit{gidan wayaa} / *\textit{gidaa na wayaa}
\textit{house-of wire} \quad \textit{house of wire}
\textit{post office}
\end{enumerate}

This suggests that perhaps the 'Adj + N' and 'N + Dem' compounds have been formed on analogy with the 'N + N' compounds. That is, the Case-marker in 'N + N' compounds has been reanalyzed as a compound marker, since a Case-assigner is not needed compound internally. Notice that both types of "compounds" do exist: there are what Borer (1984) refers to as "wordphrases", where internal structure is maintained and thus Case-markers appear (e.g. \textit{pain au chocolat}, \textit{coat of arms}) and there are also compounds which have no internal structure and hence no Case-marker (e.g. \textit{wagon-lit}, \textit{car keys}).

Finally, as Schuh (1983a) persuasively argues, the Case-marker can be derived historically from the definite determiner. This evolution is seen over and over again both in Chadic and in other branches of
Afroasiatic (e.g. Berber, Egyptian). This explains, among other things, the gender on the Case-marker in Hausa and Egyptian as a reflex of its determiner origin. I have suggested here that the Case-marker has, in turn, been reanalyzed as a compound linker.

Having seen the similarities and differences between the genitive Case-marker and analogous morphemes, we now return to the environments of genitive Case-marking. So far, we have seen that genitive Case-marking appears in the contexts [N N NP] and [NP N NP]. In the remaining section on Case, we will examine genitive Case-marking with respect to verbal nouns.

5.3.3 Verbal Nouns

Verbal nouns in Hausa are generally divided into two types—primary verbal nouns and secondary verbal nouns. These basically correspond to English gerunds and derived nominals, respectively. For each of the seven "grades" of the verb in Hausa, there is a particular form of primary verbal noun. Grade III forms primary verbal nouns by lengthening the final vowel, Grade II uses the regular verb stem form as its verbal noun, and all other grades use a verbal noun formed by suffixing /'a/ to the verb stem. The Hausa verbal grade system is the derivational repertoire for verbs in Hausa, corresponding roughly to the binyanim in (related) Hebrew and Arabic. The grades, the first three of which are considered as "basic" and the others as "derived", are listed in (52) with examples and a rough gloss of meaning. (Numerous details are omitted here; cf. Parsons (1960/81) for the original proposal of a grade system in Hausa and Newman (1973) for a revision and detailed discussion of same.)
(52) The Verbal Grade System

<table>
<thead>
<tr>
<th>Grade</th>
<th>Form</th>
<th>Meaning</th>
<th>Example</th>
<th>Primary VN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade I</td>
<td>HL(L)* -aa</td>
<td>Basic (Tr./Intr.)</td>
<td>koomììa</td>
<td>koomììawaa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>rubùutììa</td>
<td>rubùutììawaa</td>
</tr>
<tr>
<td>Grade II</td>
<td>LH(L) (L)*LHL -aa</td>
<td>Basic (Tr.)</td>
<td>sàììa</td>
<td>sàììa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>tàììbayàììa</td>
<td>tàììbayàììa</td>
</tr>
<tr>
<td>Grade III</td>
<td>LH(L) (L)*LHL -a</td>
<td>Basic (Intr.)</td>
<td>fità</td>
<td>fitàa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dòògarà</td>
<td>dòògaràa</td>
</tr>
<tr>
<td>Grade IV</td>
<td>H(L)*L -ee</td>
<td>Totality</td>
<td>sàììèè</td>
<td>sàììèèwaa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>hàkùùràììèììa</td>
<td>hàkùùràììèììawa</td>
</tr>
<tr>
<td>Grade V</td>
<td>H(H)*H -ar</td>
<td>&quot;Causative&quot;</td>
<td>sayàìì</td>
<td>sayàììwaa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>hàkuràìì</td>
<td>hàkuràììwaa</td>
</tr>
<tr>
<td>Grade VI</td>
<td>H(H)*H -oo</td>
<td>Ventive</td>
<td>sayòò</td>
<td>sayòòwaa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>rubùutòò</td>
<td>rubùutòòwaa</td>
</tr>
<tr>
<td>Grade VII</td>
<td>L(L)*H -u</td>
<td>&quot;Passive&quot;</td>
<td>sàììùù</td>
<td>sàììùùwaa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>shììfììòòììuìì</td>
<td>shììfììòòììuwaa</td>
</tr>
</tbody>
</table>

All verbs, except for some Grade II verbs, have a primary verbal noun, which has a predictable form (either waa or non-waa, as indicated in (52)) and meaning, like gerunds in English. In addition, many Grade I and II and some Grade III and IV have secondary verbal nouns, whose form and meaning is idiosyncratic, as is the case with English derived nominals. (Grade V, VI, and VII, and most Grade III and IV verbs have
only a primary verbal noun.)

As expected, secondary verbal nouns behave like nouns in every way. Their distribution is that of any other NP; for example, a verb such as yi 'do/make' which subcategorizes for an NP complement only, may take a secondary verbal noun complement, as illustrated in (53a). Like other [+N] categories, secondary VN's are not Case-assigners, and thus na/ta-Insertion must apply, as is shown in (53b). Finally, the grammatical function of the genitive complement of a secondary verbal noun may be subject as well as object (53c).

(53)  

a. Naa yi karaatuu
     1s do reading(Sec)
     'I did some reading'

b. Naa yi karaatun, littaafii
     1s do reading(Sec)-of book
     'I did some reading'

c. Faskaren Ali
     chopping(Sec)-of A
     'Ali's chopping wood'/'chopping up Ali'

Corresponding primary verbal nouns, on the other hand, may not occur in NP-only slots:

(54)  

a. *Naa yi karantaawaa / karanta littaafii
     1s do reading(Pr) reading(Pr)-book
     'I read (a book)'

b. *Naa yi faskaraa
     1s do chopping(Pr)
     'I chopped'

(55)  

a. *Sun yi sauraararshi
     3s do listening(Pr)-of-him
     'They listened to him'

b. Sun yi sauraaronshi
     3s do listening(Sec)-of-him

41
However, verbs which have no secondary verbal nouns, may use the primary verbal noun in NP environments (like certain -ing forms in English which have not corresponding nominal form); this is illustrated in (56a) and (b). And, not surprisingly, verbs which have no primary verbal noun, and therefore use a secondary verbal noun form in the continuous aspect, may also use the secondary verbal nouns form in NP environments (56c).

\[(56)\]

a. Mun yi kooran dabboobii
   1p do chasing(Pr)-of animals
   'We chased the animals'

b. Mun ga buusheewar shibkookii
   1p see drying(Pr)-of plants
   'We saw the dryness of the plants'

c. Sun yi yaboo cf. Sunaa yaboo
   3p do praising(Sec) 3pCONT praising(Sec)
   'They praised' 'They are praising'

The facts of (53) through (55) suggest that primary verbal nouns are in fact verbs. Some primary verbal nouns may also serve as nouns (e.g. koora 'chasing', buusheewa 'drying') if there is no available nominal form, and some secondary verbal nouns may also be used in the continuous (e.g. yaboo 'praise') if there is no gerundive form available.

As mentioned above, there are two types of primary verbal nouns: waa-VNs and non-waa-VNs. These differ with respect to Case-assigning properties. Waa-VNs appear to assign objective Case to their direct objects, like any other verb:
(57) a. Inaa karanta littaahin Ali
   is reading(Pr) book-of A
   'I'm reading Ali's book'

   (cf. Zan/Naa karanta littaahin Ali )
   is is read book-of A
   FUT PERF
   'I (will) read Ali's book'

   b. Mee kikaa karantaawaa
      what 2fm reading(Pr)
      'What are you reading?'

   (cf. Mee zaa ki/kika karantaa )
      what 2sf read
      FUT/PERF
      'What will/did you read?'

That is, an NP may appear in the complement position of a primary VN.
And verbs in the continuous aspect undergo the same vowel-shortening
before a lexical noun object as verbs in other aspects do. (I am
assuming here that the (')waa suffix, which appears only when there is
no complement, deletes as part of this same process.)

Non-waa primary VNs, however, require na/ta-Insertion when
 occurring with a direct object complement:

(58) a. Ali yanaa faskarar    itaacee
      A 3sm chopping(Pr)-of wood
      CONT
      'Ali is chopping wood'

   b. Sunaa sauraar    maganar sarki
      3p listening(Pr)-of speech-of emir
      CONT
      'They are listening to the emir's speech'

   c. Sunaa kooran    dabboobii
      3p chasing(Pr)-of animals
      CONT
      'They are chasing aways animals'

Yet, the distributional facts presented in (54) and (55) argue against
analyzing non-*waa* primary VNs as nouns. Moreover, genitive complements of primary verbal nouns (*waa* and non-*waa*) normally must be logical objects, a restriction which doesn’t hold of nouns. Notice that this means that intransitive verbal nouns (59b,c) normally may not take a genitive complement at all. Compare the phrases in (59), which all contain primary verbal nouns of verbs which have corresponding secondary verbal noun, with (60) which exemplifies the nominal usage of two primary verbal nouns of verbs which have no secondary verbal nouns.

(59) a. **faskarar** Ali
    chopping(Pr)-of A
    ‘chopping Ali’ /*Ali’s chopping’ (cf. (47c))

    b. ??daaraawarshi
    laughing(Pr)-of-his
    ‘His laughing’

    (cf. **Yanaa** daaraawa)
    3sm-CONT laughing(Pr)
    ‘He is laughing’

    c. **haKurur** maalum
    being patient(Pr)-of teacher
    ‘the teacher’s being patient’

    (cf. **Maalum** yanaa haKurua)
    teacher 3sm being patient(Pr)
    ‘The teacher is being patient’

(60) a. **fitar/isoowar** sarkii
    going out-of/passing-of emir
    ‘The emir’s going out/ passage’

This leads us to conclude that non-*waa* VNs are categorically verbs which simply lack an objective Case-assigning feature. Genitive complements of primary VNs must be logical objects because they are filling the subcategorized object position of these verbs. The domain of **ra/ta-**
Insertion is not restricted to N, then, but may also apply to V, supporting the notion that na/ta-Insertion is a Case-rescue device. The hesitancy on the part of speakers and the considerable dialectal and idiolectal variation with respect to which of na or ta to insert here (but not elsewhere) is not surprising given that verbs don’t normally have gender.

Sproat (1985), after arriving at similar conclusions for verbal nouns in Welsh (and Celtic languages, in general) suggests that genitive Case-assignment in VN constructions is simply a marked fact about these particular languages. The repetition of these facts in Hausa suggests that, although this may be marked a marked phenomenon, it is not without a certain amount of motivation. Given that verbal nouns move back and forth, both diachronically and synchronically, across the verbal-nominal boundary and that categorical status and Case-assigning features aren’t necessarily linked, it is not surprising that some verbal nouns have the categorical status of verbs, but the Case-assigning status of nouns.

Besides appearing in the VP of continuous clauses, verbal nouns may also occur as subjects (61) and as purposive clauses (62).

(61) a. karanta littaaflī da rubuuta littaaflī baa daya ba reading(Pr) book and writing(Pr) book NEG one NEG
nee
COP
‘Reading a book is not the same as writing a book’

b. Faskarar itaaee yanaa kaawoo kudii chopping(Pr)-of wood 3am bringing(Pr) money
‘Chopping wood brings in money’
(62) a. Taa shiga (don) dacokoo kwaanoo
   3sf enter so-that taking(Pr) bowl
   'She went in to get the bowl'

b. Taa tahi garii (don) saurarar shuugabaa
   3sf go town so-that listening(Pr)-of leader
   'She went to town to hear the president'

c. Taa tahi garii (don) aikii
   3sf go town so-that work
   'She went to town in order to work'

What is the categorial status of verbal nouns in these positions? Though purposive clause may consist of NPs, as in (62c), we concluded above that primary verbal nouns cannot be NPs since they do not have the full distribution of NPs. It would also be incorrect to say that purposive clause VN are VP complements since only certain verbs may take VP complements and the interpretation is that of an auxiliary plus verb and not that of a purposive clause. So, a construction containing a verb like shiga 'enter', which may take a VP complement as well as a verbal noun complement, is potentially ambiguous as to auxiliary or purposive interpretation, as is illustrated in (63).

(63) Yaa shiga karanta Kur‘aanii
    3sm enter read Koran
    'He went in to read the Koran'/'He began reading the Koran'

Furthermore, the fact that verbal noun purposive clauses and verbal noun subjects both have corresponding sentential (subjunctive) clauses, as in (64), suggests that the VN phrase in these positions may also be propositional.12

(64) a. Yaa shiga (don) ya karanta kur‘aanii
    3sm enter so-that 3sm read Koran
    SUBJ
    'He went in to read the Koran'

46
b. A karanta littaahii da a rubuuta littaahii baa guya
INDEF read book and INDEF write book NEG one
SUBJ
ba nee
NEG COP
'Reading a book is not the same as writing a book'

Verbal noun clausal structures would consist of a predicate headed by a
ermal noun, a null INFL node, and, since there is no AGR in INFL to
assign nominative Case, a null subject position: in other words, a
gerund clause, as in (65) (cf. Stowell 1981):

(65)

\[
\begin{array}{c}
I'' \\
\downarrow \\
NP \\
\downarrow \\
\emptyset \\
\downarrow \\
INFL \\
\downarrow \\
V'' \\
\downarrow \\
V \\
\downarrow \\
NP \\
karanta littaahii
\end{array}
\]

A gerund clause is then a cross between an NP and an S'. Gerunds are
like NPs in that they contain no tense/AGR nodes and no COMP node.
(Gerunds in Hausa, like English gerunds, may not be headed by a
complementizer or a wh-phrase.) Finally, gerunds may occur in
positions where both NPs and S's may occur. Developing similar
arguments for English gerunds, Stowell (1981) suggests that gerunds are
neutralized categories (see also Chomsky 1981): NPs are [+N, -V, -
Tense], S's are [+N, -V, +Tense], and gerunds are [+N, -V]. I will
adopt this system here, taking "+Tense" to indicate presence or absence
of a tense node, which if present may or may not have features (tensed
clauses vs. infinitives and subordinatives). As Stowell notes, the
absence of COMP in gerunds follows from the absence of a tense node, if
we suppose that COMP is where the tense operator appears and that therefore presence of COMP is dependent on presence of a tense operator in the clause (cf. Den Besten 1978). The neutralized category approach also entails that gerunds may appear anywhere that both NPs and S’s may; in order for both S’s and NPs to be subcategorized, gerunds must necessarily be permitted, assuming that subcategorization is restricted so that disjunction is not allowed, as in Stowell 1981. The conjunction/preposition done in Hausa (cf. the purposive clause examples above), for example, subcategorizes for ‘{___[+N, -V]’}, permitting S’, NP, and gerund clause complements.

I have suggested that primary verbal nouns may form gerund clauses having a propositional (subject-predicate) structure. We have seen that they do contain a predicate: the verbal noun (and its complement). Do these gerund clauses ever display full propositional structure?13 There can be no nominative subject since there is no AGR; however, one might expect that since dummy Case-insertion may apply within the domain of V as well N’ and N”, that it may apply within a projection of I as well. Notice that the only reason the specifier of I’, the subject, normally precedes I’ is that it must be adjacent to its (nominative) Case-assigner, INFL, which is the head of I’ (and heads are left-most in X’ in Hausa). In the absence of a Case-assigner in INFL, no principle prevents the subject from occurring in post-I’ position, providing it receives Case there. This is just the position in which an NP could receive genitive Case through insertion of the dummy na/ta Case-marker. Na/ta would be attached to the NP and then phonologically cliticized to the preceding words in X’ (I’ in this
case), resulting in a structure like that in (66a). (Cliticization is possible here by assuming that a null head--INFL here--makes government from "outside" possible; I' becomes V′max.)

(66) a.  
```
  I''
 /   \\
I'    NP
 \\       \\
V     NP 
```

b. ?Baa nāa son karanta Rur'aanin Ali
NEG is liking-of reading(Pr)-of Koran-of A
'I don't like Ali's reading the Koran'

Examples like (66b) are in fact acceptable, though very marginal, at least for some speakers. The preferred reading tends to be one where the final NP is interpreted as the possessor of the complement of the verb--e.g. 'reading Ali's Koran'. This result goes along with the fact that intransitive primary verbal nouns have difficulty taking a genitive complement; see the discussion of (59) above. Na/ta-Insertion, I conclude, (marginally) applies in the domain of I'.

Perhaps the marginality has to do with some sort of processing constraint which favors interpretation of post-verbal material as complements (since this is the normal complement position in Hausa).

(67) Na-Insertion (Revised):

```
0 --> na/ta / [X ... NP],
```

where X is some projection of N, V, I

This concludes our discussion of Case-assignment in Hausa. Summarizing, it has been argued that nominative Case in Hausa is a
function of AGR: when there is AGR, but no Tense, as in subjunctive clauses, there are nominative subjects, but when AGR is not present, as in gerund clauses, there can be no nominative subject. Genitive Case-marking in Hausa, which is done through insertion of the dummy Case-marker na/ta, appears in [N(’) NP] (noun phrases), [V(‘- Case) VP] (verb phrases), and [I’ NP] constructions—-that is, any environment in which no Case-assigning category is present.

6. 'Move-α' and Bounding Theory

We turn now to consider the syntactic rule of 'Move-α', its properties, and its language-particular realizations. Languages may vary as to the nature of α, the type of position α may move to (cf. Baltin 1982), the nodes which "bound" movement, and, indeed, whether there is any syntactic 'Move-α' at all. In this section we will begin looking at how the interaction of various parameters and principles produces this variation. We consider first the mechanics of 'Move-α', examining in detail wh-type movement in Hausa. We then begin our examination of constraints on movement rules with subjacency, focusing on surface violations of this condition in Hausa. Finally, to illustrate the interaction of different components of grammar, an analysis of the relation between tense marking and wh-movement in Hausa will be developed. This phenomenon will become important to later discussion in this work.

6.1 Syntactic Movement

6.1.1 'Move-α'

The idea of the rule 'Move-α' is that there are no individual
language-specific or construction-specific transformations, but one
general rule which says "to D-structure, move anything anywhere to
create S-structure". There are severe limitations though on what may
be moved, where it may be moved to, and what the result of movement is.
We have already reviewed the functioning of some of these limitations.
The projection principle has the effect that movement must result in a
trace in the original position of the moved argument, creating a chain
between the trace and its antecedent, the moved element. Movement to
non-argument positions is always permitted by the projection principle
and the \( \theta \)-Criterion since these positions, by definition, have no
assigned \( \theta \)-role. Movement to an argument position, however, is
possible only when the position is also a \( \theta \)′-position; otherwise the \( \theta \)-
Criterion, which by the Projection Principle must hold at all syntactic
levels, is violated. The configurations resulting from these two
"types" of movement have been shown to have different properties.
Movement to an A′-position typically involves movement to an S-
peripheral position referred to as "COMP" (since this is also where
sentential complementizers appear). This position may serve as an
"escape hatch" for movement out of a clause, allowing for apparent
"unbounded dependencies" between the wh-phrase and its position of
origin trace by virtue of successive cyclic "COMP-to-COMP" movement.
This type of movement is referred to as "wh-movement". "NP-movement",
on the other hand, refers to movement to an A-position. It is argued
that the relation between a trace of NP-movement and its antecedent is
like that between anaphors and their antecedents, whereas a trace of wh
is a variable bound by its antecedent in COMP, which is interpreted as
an operator-like element, in LF. These aspects of the antecedent-trace relation, which involve Binding Theory, will be taken up more directly in section 9 below.

Here we will look briefly at the various manifestations of syntactic movement in Hausa. Hausa, as was pointed out above, has no NP-movement (cf. note 4 and discussion of (17)). This fact, I will argue, is a result of the interaction of morphological facts of Hausa with the Binding Theory. Thus, it is unnecessary to have a special statement in the grammar of Hausa to the effect that only movement to A'-positions is allowed; rather, one can assume that the rule 'Move-α' is the same as in a language like English, the restriction to wh-movement being a consequence of independent facts of the grammar. This line of reasoning may run into obstacles when confronted with Chinese, which according to Huang (1982), has NP-movement, but no (syntactic) wh-movement (i.e., wh-phrases always occur in situ). It may be that there are independent parameters in Chinese which derive the lack of syntactic wh-movement just as there are in Hausa for the lack of NP-movement, though their formulation will be left open here.

6.1.2 Wh-Movement in Hausa

There are several constructions in Hausa which display the properties of wh-movement: they contain a gap, movement may be COMP-to-COMP, and, as will be shown in section 6.2, conditions on movement are obeyed. Wh-interrogation, relativization, focus-fronting, and a cleft-like construction in Hausa are all clear examples of wh-movement. These are illustrated in (68a)-(d), respectively.
(68) a. Mee?i / wane littaafii [g kakaa tsamaanii [g, ti [g Ali yaa
what which book 2sm think A 3sm
sayaa ti]]
buy
'that which book do you think Ali bought?'

b. littaafin [g, (wan)da [g sukee tsamaani [g, ti [g Ali
book-the which-that 3p think A
yaa sayaa ti]]]
3sm buy
'the book they think Ali bought'

c. Wani littaafii sukee tsamaani [g, ti [g Ali yaa sayaa ti]]
a book 3p think A 3sm buy
'They think Ali bought a BOOK'

d. Wani littaafii nene sukee tsamaanii [g, ti [g Ali yaa
a book FOC 3p think
sayaa ti]]
'It’s a book that they think that Ali bought'

Wh-interrogatives can be described as involving movement of a
question-word from its D-structure argument position to COMP. Relative
clauses can be given the same description. though notice that the form
of the wh-phrase appears to be different from that found in wh-
interrogatives (compare (68b) with (68a)). The relative COMP is
composed of an (optional) wh-word (here waa) plus the genitival linker
(n or r) --cf. discussion in section 5) plus the (obligatory) relative
complementizer da (elsewhere the preposition 'with'). 'Which' and
'who' have the forms wanda (ms), wadda (fs), and wanda (p) --cf. waa
'who' in wh-interrogatives; other forms follow this pattern: inee
'where', inda 'where-REL'; vaaya 'how', vanda/yadda 'how-REL'. I
assume, following Williams (1980) and Chomsky (1982), that the relation
between the head of a relative clause and its modifying phrase is one
of predication and that this is formalized by coindexation between the
wh-operator and the head of the relative which is the result of an
interpretative rule of LF'.

The "cleft-like structure", illustrated in (68d), which typically
has a contrastive focus interpretation, is syntactically identical to
focus-fronting, illustrated in (68c). The only difference between
the two is the presence of an overt focus-marker (isomorphic with the
copula, a point to which we return below) in (68d), which in fact can
appear on any element moved to COMP, including wh-interrogative words.
(68d) then does not represent a separate syntactic construction and it
is possible to speak of focus-fronting as encompassing examples like
both (68c) and (68d). Although there is never an overt wh-phrase in
topicalization structures, these also display all the typical
properties of wh-movement. In particular, they can be distinguished
from left dislocation structures, which do not have these properties.

The most obvious surface difference between the two constructions
is that whereas focus-fronting obligatorily triggers a so-called
"relative" marker on the INFL governed by the moved element, a
phenomenon which co-occurs with wh-movement as we shall see in section
6.3, this marking is incompatible with left dislocation. The relevant
INFLs in the examples below will be in capital letters for ease of
comparison, with the "relative" form glossed "REL" following the phi-
features and the non-relative form glossed only with phi-features. To
have an overall picture of the morphological distinction in INFL forms,
which exists (at least in modern Hausa) only in the perfective and the
continuous aspects, the table of INFL forms used in the standard
dialect (= Kano) in (69) may be useful. (The KE/KEE distinction, glossed over here, will be discussed in chapter 4.)

(69) Relative Marking of INFL

<table>
<thead>
<tr>
<th></th>
<th>PERF</th>
<th>REL PERF</th>
<th>CONT</th>
<th>REL CONT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ls</td>
<td>naa</td>
<td>na</td>
<td>inaa</td>
<td>nakëe</td>
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<tr>
<td>lp</td>
<td>mnn</td>
<td>kun</td>
<td>munã</td>
<td>muktook</td>
</tr>
<tr>
<td>2sm</td>
<td>kaα</td>
<td>kã</td>
<td>kanã</td>
<td>kakòe</td>
</tr>
<tr>
<td>2sf</td>
<td>kin</td>
<td>kikã</td>
<td>kinã</td>
<td>kikòe</td>
</tr>
<tr>
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<td>kun</td>
<td>kukã</td>
<td>kunã</td>
<td>kukòe</td>
</tr>
<tr>
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<td>yaa</td>
<td>ya</td>
<td>yanan</td>
<td>yakòe</td>
</tr>
<tr>
<td>3sf</td>
<td>taa</td>
<td>ta</td>
<td>tanã</td>
<td>takòe</td>
</tr>
<tr>
<td>3p</td>
<td>sun</td>
<td>sukã</td>
<td>sunã</td>
<td>sukòe</td>
</tr>
<tr>
<td>indef</td>
<td>an</td>
<td>akã</td>
<td>anã</td>
<td>akòe</td>
</tr>
</tbody>
</table>

Besides this morphological distinction, focus structures differ from left dislocation structures in that they are subject to the various island conditions of Ross (1967). For example, NPs may not be focused out of an embedded question, as in (70a), while a left dislocated NP may be associated with an NP in an embedded question, as in (70b).

(70) a. *Alij (nee) MUKA san [waaj eį zai auraa eį]

A  FOC 1pREL know who 3sm marry

'Ali, we know who will marry'

b. Alij, MUN san [waaj eį zai auraa eį]

A  ip  know who 3sm marry

'Ali, we know who (he) will marry'

Another distinguishing factor is that whereas use of a resumptive pronoun with focalization and other wh-structures is generally unacceptable (or at least subject to dialectal/idiolectal variation) in most positions, it is obligatory with left dislocation. (Though, it should be noted that since Hausa is a pro-drop language, resumptive subject pronouns, and some object pronouns may be null, just as non-
(71) a. Aisha, (cee) MUKEE tsammaani Ali yanaa soo e / sonta
     A FOC 1pREL think A 3sm like like-her
     '(It’s) Aisha we thought that Ali likes (her)'

b. Aisha, MUNAA tsammaani Ali yanaa *soo e / sonta
     A 1p think A 3sm like like-her
     'Aisha, we thought that Ali likes (her)'

Finally, while the left dislocated element must be
definite/specific (it is the semantic topic), there is no such
restriction on the topicalized NP (semantically, it is focused).

(72) a. Wani littaafii (nee) SUKAA sayaa e
     a book FOC 3pREL buy
     '(It’s) a book they bought'

b. *Wani littaafii, SUN sayaa e / sayee shii
     a book 3p buy buy it
     'A book, they bought (it)'

I take all of these properties to indicate 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.

Though focus-fronting structures straightforwardly involve wh-
movement, it’s not so obvious exactly what moves where. Chomsky (1977)
suggests that similar structures in English (referred to as
"topicalization") are the result of base-generation of the focused NP
in an S’-external Topic position and subsequent wh-movement of a (null)
wh-element to COMP, which is later licensed by the NP in Topic.
Another obvious alternative (that adopted in Emonds 1976) is for the
focused NP to be generated in its argument position and then to be
moved to COMP. These two alternatives are schematized in (73):
(73) a. [TOP NP] [S' [COMP Whi] ... ti ...

b. [S' [COMP NPi] ... ti ...

Although it's not entirely clear what's a stake in choosing between (73a) and (73b), I will briefly consider the question here because of its relevance to our discussion of "Relative" marking in section 6.3. There is at least one argument for (73b) over (73a). It can be shown, on the basis of sentential intonation facts, that a focused element is not in the same structural position as a left dislocated element (i.e. that it is not in Topic, as in (73a)).

Hausa, like many African tone languages, exhibits the phenomenon of downdrift whereby the pitches of high and low tones lower in the course of a sentence, preserving the relative difference between the two. Consider the rough illustration of downdrift in (74) of an example taken from Cowan & Schuh (1976:17). The notation used (that of Leben et al (1986)) shows the intonation pattern--the line--and the syllables to which the tones correspond--the dots. I am abstracting away from various other intonational phenomena here (cf. Leben et al for some discussion and analysis) in order that the over-all downward shift in register may be more easily seen.

(74)

L H L H L H L H L H L H L
Bálaa dà Shehù zaa sù zoo dà mutànansù
'Balla and Shehu will come with their people'

Now, as McConvell (1973) (cf. also Jaggar 1978) points out, in
focalization structures (as in wh-interrogation and relatives) the sentential downdrift pattern is uninterrupted, but with left dislocation, downdrift operates on the left dislocated element and then starts over again for the "comment" sentence. This difference is illustrated in (75). (a) and (b) illustrate the intonation pattern of focalisation and wh-interrogation and (c) that of left dislocation:

(75) a. 

H L H H L H L L H H L
Wannàn littaefii sukà sàyya jiyà
'This book, they bought yesterday'

b. 

L L H H L H L L H H L
Ènè littaefii sukà sàyya jiyà
'Which book did they buy yesterday?'

c. 

H L H H L H L H L L L H
Wannàn littaefii sun sàyya jiyà
'This book, they bought it yesterday'

By assuming that a given downdrift pattern applies to the elements contained within the matrix S' (or at least that S' is a boundary for downdrift), the difference in intonation between focused and left dislocated structures follows from taking the focused element to be within S', in COMP (like wh-phrases), and the left dislocated element to be outside S', in a Topic node.

It might be suggested that these same results could be obtained by assuming that there is some semantic feature on left dislocated elements which triggers a pause (and consequent break in intonation)
similar to the feature [+focus] which triggers focal stress in English (cf. Horvath 1986). But, while focal stress is local in that its effect is on the focused constituent, downdrift is a phrasal phenomenon and it not limited to the element that would bear the putative [+Topic] feature. Furthermore, while extensive syntactic motivation is given for the feature [+focus] in Horvath on cit., I can see no independent motivation for a [+Topic] or [+Dislocated] feature. It would in other words be totally ad hoc to set up a special feature for left dislocated items only in order for downdrift to be triggered, especially when an alternative structural account of the facts is available. I will therefore take these intonation facts to argue for direct movement of the topicalized phrase to COMP, the (73b) alternative, noting that these facts are also compatible with the analysis of topicalization argued for in Baltin (1982) in which the focused element is adjoined to S.

Let us consider now other constructions in Hausa which have wh-movement properties. Hausa not having infinitival clauses at all, the equivalents to English infinitival relatives and purpose clauses, which have been argued to be the result of wh-movement of a null operator at S-structure, which is construed with an argument at LF' as in "regular" relative clauses, are expressed with either a verbal noun construction or a subjunctive clause. These are illustrated in (76).

(76) a. Kanaa son abin karaatuu?
   2sm want thing-of reading
   'Do you want something to read?'

59
b. Kanaa son abu / littaafla karaanta e?
2sm want thing / book 2smSUB read
'Do you want something/a book to read?'

c. Alhajii yanna neeman kufii ya baar talakaawaa e
alhaj 3sm look-for money 3sm give commoners
'The alhaji is looking for money to give to the poor'

While the structure of (76a) is obvious—a noun with an NP or gerund clause complement which triggers na-Insertion for Case reasons (cf. section 5 of this chapter), the structure of (78b,c) is less obvious. There is some evidence which suggests that (76b,c) may be analogous to their English equivalents in that the əc behaves like a trace. That is, it seems as though infinitival relatives and purpose clauses in English are basically the same in Hausa, except that the subjunctive is used where the infinitive is in English.

The fact that such structures display apparent unbounded movement, as in (77), would be an argument for this conclusion.

(77) a. Inaa neeman gidaa tin fadaa wa Ali [ya sayaa mini e
1s look-for house 1sSUB tell to A 3sm buy for-me
'I'm looking for a house to tell Ali to buy me'

b. Naalaamii yanna neeman daaliba ya fadaa wa shuugaban
teacher 3sm look-for student 3sm tell to head-of
makarantaa [ya saa e ta shaara daakunaa
school 3sm make 3sf sweep rooms
'The teacher is looking for a student to tell the principal
to make sweep the classrooms'

However, movement versus non-movement is not as straightforward in Hausa as it is in English, since Hausa quite regularly allows null subjects and null objects. In other words, the presence of an "unbounded" gap in Hausa, in and of itself, does not argue for the presence of a trace of movement because this gap could also be a null
pronoun. Fortunately, most speakers accept null object pronouns only where the referent is inanimate (nonhuman). Jaggar (1985), who did extensive text counts of object zero anaphora in both written and spoken discourse, found that less than 10% (15/181 tokens) of all cases of direct object zero anaphora involved a human referent. All were in contexts he described as being "a close-knit, uninterrupted succession of coordinate transitive clauses, where the direct object arguments are identical" and all were in written texts. Moreover, speakers presented with cases of zero direct object pronouns routinely reject them, insisting on the use of an overt pronoun, even in cases involving "close-knit" syntactic context described by Jaggar—cf. (80), which contains examples (with slight adaptations) cited by Jaggar (who took them from a collection of stories—Iaam 1980). That the restrictions on written discourse are "looser" than those placed on spoken discourse is of course not surprising, nor, as Jaggar argues, is the human/nonhuman dichotomy; we return to these issues in chapter 3.

(78) A: Kaa ga littaaafin Nuusa?
   3sm see book-of M
   'Did you see Musa's book?'

   B: Ii, naa ganii "
      yes 1s see
      'Yes, I saw (it)'

   B: Ii, naa gan shi
      yes 1s see it
      'Yes, I saw it'
(79) A: Kaa ga Ranen Muusa?
    2sm see brother-of M
    'Did you see Musa's brother?'

B: *Ii, nna ganii e
    yes 1s see
    'Yes, I saw (him)'

B: Ii, nna gan shi
    yes 1s see him
    'Yes, I saw him'

(80) a. Barayii suka yiwo waje, aka bi su kama kama, aka bubbuge *(su), aka dauree *(su)
    'The thieves came outside, and people followed them at full pelt, beat *(them), and tied *(them) up'

b. In sun ga sarkin, zaa su ga'idaa *(shi), zaa su hulhutaa *(shi)
    zaa su ji abin da zai gayaa musu
    'When they see the emir, they will greet *(him), fan *(him), and listen to what he says to them'

b. Ya cee yanaa da jiikaa wanda baa abin da zaa a yii masa da zai saa shi kuukaa. In sarkin yanaa soo ya gan *(shi), ya kiiraawoo *(shi)...
    He said he has a grandson who nothing will make him cry. If the emir wants to see *(him), he should call *(him)'

To the extent to which the facts illustrated by (78) - (80) are true for any given speaker, it is possible to use the presence of a human direct object gap as a diagnostic for a trace of 'Move-α' since such a gap could not possibly be an empty pronoun. Applying this test to the subjunctive constructions like those in (76b), we see in (81) that there is reason to believe that such structures do contain a trace since they are acceptable despite the fact that the gaps have human referents.14

(81) a. Aisha tanaa neeman mutum ta auruu e
    A 3sf look-for man 3sf marry
    'Aisha's looking for a man to marry'
b. Inaa neeman mutum in saa Aisha ta aurrā ə 1s looking-for man 1sSUB make A 3sfSUB marry I’m looking for a man to make Aisha marry

c. Alhajii yanaa neeman talakaawa ə ya baas ə sadakaal alhaji 3sm look-for commoners 3sm give alms

The alhaji is looking for poor to give alms to

An overt pronoun is also acceptable in these constructions, though much better where further from its overt antecedent, as in (81b,c). As will be shown in section 6.2, this is typical of relative constructions.

Further indication that a wh-movement analysis might be on the right track is the sharp contrast (for most speakers) between human gaps in structures like that in (81) and such gaps in subjunctive clauses headed by don ‘in order to, so that, because’. While nonhuman direct objects and subjects in general, both of which may be null pronouns, are grammatical with don, human direct objects are not.

(82) a. Kanaa son abu don ə karantaa (shi) 2sm want thing so-that 2s read it ‘Do you want something in order to read (it)?’

b. Ali yaa baas ni littaaflii don ə in saa yaarraa su ə 3sm give me book so-that 1s make children 3p karantaa (shi) read it ‘Ali gave me a book in order for me to make the children read it’

c. Inaa neeman mutum don ə ya gyaa ya ə rofar ə daakiinaa 1s look-for man so-that 3sm repair door-of room-my I’m looking for a man to repair my door

(83) a. ‘Aisha tanaa neeman mutum don ə ta aurrā ə ə [cf. (83a)] 3sf look-for man so-that 3sf marry ‘Aisha’s looking for a man so that she can marry’

63
b. *Ali yaa auri Aisha don ya gwadaa na mutaane wai yanaa
A 3sm marry A so-that 3sm show to people that 3sm
soo e
love
'Ali married Aisha in order to show people that he loves'

All of (83a-c) are grammatical with an overt pronouns in place of the
gap. (82) and (83), compared with (81), suggest that don-clauses do
not allow wh-movement constructions and that, where gaps are possible,
as in (84) without the parenthesized material, these are actually null
pronouns. By the same reasoning we are led to conclude that the gaps
in (83) are traces and that therefore these structures are subjunctive
relatives/purposes.

The account in Cinque (1984) of similar constructions in Italian
headed by per suggests an explanation for Hausa don-clauses. There is
reason to believe that don, like its Italian equivalent per, is a true
preposition. Besides an S’-complement, it may also taken an NP or a
gerund clause complement: don aikinshi 'for his work', don rubuuta
wasiiraa 'for writing a letter'. Suppose therefore that the structure
of the purpose clause is '{pp don S'}'. Now, if the gap in the
complement clause to don is the result of wh-movement of an empty
element, then the result is an empty operator in COMP, which, like all
empty categories, must be properly governed (cf. section 7). However,
the governor here is a preposition (don) and, in Hausa, prepositions
generally cannot properly govern (there is no real preposition
stranding, etc.). Thus, the structure is excluded as a violation of
the principle (the ECP, or Connectedness) which requires empty categories to be recoverable. This basically is Cinque's analysis for per-clauses which also never allow the "complement object deletion" found in English for-clauses, though, as in Hausa, these constructions become grammatical if overt "resumptive" pronouns appear in the place of the gap. Hausa has the additional possibility of null pronouns appearing there, where these are independently allowed in the language. This is not possible in Italian since null pronouns are allowed only in subject position or, under Cinque's analysis, where locally identified by an A'-binder (subject to the ECP/Connectedness).

(76b,c), (77), and (81) are permitted in Hausa since the subjunctive clauses here are not headed by don and thus there is no reason to suppose they are contained within a PP. After wh-movement of the empty argument to COMP, they would have the structure '([S 0] [\ldots  \text{INFL V ai} \ldots])' The empty operator here is in a position in which it may be sanctioned for the purposes of proper government--because of either the governing head of the relative, or, if a purposive, the governing V. Thus, in fact, two structures are available for purposive clauses in Hausa: either a PP headed by don or a "plain" S', as (84) further illustrates.

(84) Mun tafi Kanoo (don) nu sayi ayaba
    1p go K so-that 1p buy bananas
    'We went to Kano (in order) to buy bananas'

It might be suggested that because both the relative pronoun and the relative complementizer (da) may not appear in structures like (76), (77), and (81), this argues that they do not contain relative
clauses.

(85) a. *Kanaa son littaafii (wan)da ka karanta
    2sm want book which-that 2sm read
    'Do you want a book which/that to read?'

    b. *Aisha tana neeman mutumin (wan)da ta auraa
        3sm look-for man who-that 3sf marry
        'Aisha’s looking for a man who/that to marry'

As we shall see below, it is a general property of the subjunctive in Hausa that it may not have an overt operator in its COMP. Thus, pied-piped wh-phrases in the COMP of a subjunctive relative are equally ungrammatical---*Naa san wurin daga inda & yi waya 'I know the place from which to telephone. (Cf. English where the latter is grammatical despite the ungrammaticality of (85a,b) in English.)

To summarize, the above observations taken together point toward the (rather tentative, given the marginal nature of much of the data---cf. note 14), conclusion that ((81) is another instance of wh-movement in Hausa.

Another construction which might also be analyzed as being the result of movement of an empty wh-phrase to the COMP of a subjunctive clause (or, at least as an S-structure operator variable relation---cf. Cinque op. cit.) is that illustrated in (86), and which differs from the subjunctive relatives just discussed in that the head of the relative must be followed by the genitival linker -n (from na-Insertion):
(86) a. Keekee baa abin (**wanda/**da) babba ya hau e ba *abu
bicycle NEG thing-of which-that/that big 3sm ride NEG
ting
nee
COP
'A bicycle is not a thing for important people to ride'

b. Kaaruwaa baa maataar [mutum ya gayaa wa uwarsa
prostitute NEG woman-of man 3smSUB tell to mother-his
wai zai auraa e ba cee
that 3sm marry NEG COP
'A prostitute is not the kind of woman for a man to tell his
mother he's going to marry'

As with the constructions in (81), no overt relative pronoun or
relative complementizer may appear and human gaps (as in (86b)) are
possible. Likewise, these constructions may be paraphrased with a
verbal noun complement; this is in fact preferred to the exclusion of
(86) by some speakers:

(87) a. Keekee baa abin haun babba ba nee
bicycle NEG thing-of riding-of big NEG COP
'A bicycle is not an important person's riding thing'

b. Kaaruwaa baa maataar auree ba cee
prostitute NEG woman-of marrying NEG COP
'A prostitute is not a marrying woman'

If constructions like (86) are also subjunctive relatives, then it
may be possible to account for why the genitival linker found there may
not appear with complement clauses in other aspects:

(88) a. *Keekee baa abin Ali ya / yaa / zai hau e ba nee
bicycle NEG thing-of REL PERF FUT ride NEG COP
PERF

b. *Kaaruwaa baa maataar Ali ya / yaa / zai auraa e ba cee
prostitute NEG woman-of REL PERF FUT marry NEG COP

67
If the clauses in (86) are relatives, then it may be said that (88a,b) are ungrammatical because only in the subjunctive may the relative complementizer be missing. This does not explain, however, either why na (the genitival linker) is obligatory in (86) or why it may not appear in an otherwise well-formed non-subjunctive relative clause, as in (89). I leave this open for future study.15

(89) Keekee ba a abin (*na) da Ali zai hau ba nee bicycle NEG thing-the of that A 3sm ride NEG COP 'A bicycle is not the thing of that Ali will ride'

(cf. abin na Muusa ) thing-the of M

Before closing our survey of the various constructions produced by wh-movement in Hausa, it seems appropriate to discuss at this point an interesting restriction on subjunctive wh-constructions, alluded to earlier. Hausa, like many Romance languages, does not allow subjunctive indirect questions. That is, verbs which otherwise may take indirect question complements or subjunctive complements may not take subjunctive indirect questions.16 This is illustrated in (90) by Hausa and in (91) by French.

(90) a. Naa cee ya sayi naamaa (subjunctive complement)
    1s say 3smSUB buy meat
    'I said he buy meat'

    b. Naa cee mee zai yi (wh-complement)
    1s say what 3smFUT do
    'I said what he will do'
c. *Naa cee meee ya yi (subjunctive wh-complement)
 1s say what 3smSUB do
  'I said what he do'

  (cf. Maa kika cee ya yi)
  what 2sf say 3smSUB do
  'What did you say he should do?'

(91) a. J'ai demandé que Jean me fasse une cassette
  'I asked that John make me a cassette'

b. J'ai demandé ce que Jean me fera
  'I asked what John will make me'

c. *J'ai demandé ce que Jean me fasse
  'I asked what John make me'

  (cf. Qu'est-ce que tu as demandé que Jean te fasse?
  'What did you ask that Jean make you?'

And, in Hausa, subjunctive focus-fronting structures are equally unacceptable. This can be seen by comparing focus-fronting in the complement clauses of verbs like cee 'say' and faataa 'hope'. These verbs may take subjunctive or indicative clause complements, as is seen in (92).

(92) a. Soojoogii sun cee sarkin Damagaram yaa zoo
    soldiers 3p say emir-of D 3smPERF come
    'The soldiers said that the emir of Damagaram came'

b. Soojoogii sun cee sarkin Damagaram yaa zoo
    3smSUB
    'The soldiers said for the emir of Damagaram to come'

c. Munaay faataa yaa sayaa mana saabuwar mootaa
    1p hope 3smPERF buy for-us new car
    'We hope he bought us a new car'

d. Munaay faataa yaa sayaa mana saabuwar mootaa
    3smSUB
    'We hope he buys us a new car'

However, focus-fronting is possible in an indicative complement, as is
shown by (93), but not with a subjunctive complement, as is shown by (94):

(93) a. Soojoojii sun cee sarkin Damagaram (nee) ya zoo 3sm REL PERF 'The soldiers said the EMIR OF DAMAGARAM came'

b. Munaa faataa saabuur maootaa (cee) ya sayaa mana 3smREL PERF 'We hope that a new car he bought us'

(94) a. *Soojoojii sun cee sarkin Damagaram ya zoo 3smSUB 'The soldiers said for the EMIR OF DAMAGARAM to come'

b. *Soojoojii sun cee barayii a kaamaa, ba kaaruwai soldiers 3p say thieves indefSUB catch NEG prostitutes

ba NEG 'The soldiers said thieves one should catch, not prostitutes'

c. *Munaa faataa saabuur maootaa (cee) ya sayaa mana 3smSUB 'We hope a new car he buys us'

(cf. Sarkin Damagaram (nee) suka cee ya zoo ) 'The emir of Damagaram they said should come'

As the parenthesized sentences in (90), (91), and (94) show, nothing prevents focus-fronting or wh-interrogation out of subjunctive clauses per se, it's just that the moved element may not occur in the COMP of the subjunctive clause.

The descriptive generalization then is that a subjunctive COMP cannot contain an overt element. This encompasses the fact that an overt wh-element and relative complementizer are excluded in subjunctive relatives (85) and the fact that wh-interrogative subjunctives and topicalized subjunctives are ungrammatical. The ungrammaticality of a topicalized element in a subjunctive clause
further supports the claim made above that topicalization is the result of \textit{wh}-movement and that this movement involves movement of the focused constituent to COMP and not base-generation in a topic position with movement of a null \textit{wh}-element to COMP. The subjunctive relatives (if we are correct in analyzing them as such) show that a null operator in a subjunctive COMP is not excluded.

How might we account for the incompatibility of an overt operator with the subjunctive mood? A possible line of investigation, it seems to me, is to view this incompatibility as stemming from semantic considerations whose grammaticization has resulted in a restriction on the relation between a \textit{wh}- or focus operator and the subjunctive tense operator.

One of the fundamental semantic properties of the subjunctive mood is that it expresses uncertainty/doubt/indefiniteness. Suppose that this property of the subjunctive may be grammaticized by a subjunctive INFL bearing the feature [-definite] in the same way that this feature can be grammaticized in NP as an indefinite article. Assuming that scope is expressed at LF by the c-command relation (cf. May 1977), I follow den Besten (1978) and others in supposing that Tense must be in a preposed position at LF in order to take scope over the sentence of which it is head. Suppose, furthermore, that 'Move-\(\alpha\)' is restricted as suggested in Chomsky (1986a) so that maximal projections may be moved only to specifier positions and while heads only to head (\(X^0\)) positions. It follows that \textit{wh}-phrases and focused constituents land in SPEC of CP (=S') while Tense (or perhaps, INFL) lands in C of CP:

71
Horvath (1986) argues that there is a syntactic feature FOCUS in UG and that wh-phrases must receive this feature in order to be interpreted as non-echo questions, making explicit the well-known syntactic and discourse similarities between focus constructions and wh-questions. Horvath demonstrates that these proposals provide an explanatory account for the particular position of wh-phrases and focused constituents in Hungarian under the assumption that the feature FOCUS is assigned only by the verb (and government is uniformly leftward in Hungarian) so that any and only elements appearing in immediate preverbal position bear the feature FOCUS. In other languages, such as English and French, which allow in situ constituents to be either focused or questioned, FOCUS may be freely assigned to any category. Suppose that in Hausa the feature FOCUS is assigned only to \([\text{SPEC}, \text{CP}]\) such that any (and only) lexical elements appearing there will bear this feature. (Cf. Horvath 1986:196 on this possibility in Breton.)

Returning now to the incompatibility of logical operators in a subjunctive clause, it seems possible to put together the preceding observations in an intuitively correct way. An overt element in SPEC of a subjunctive clause would mean that a FOCUS element is specifying a [-definite] head. That this situation is not permitted is not surprising: intuitively, non-focused material must be "known", the
opposite of indefinite. Suppose there is an interpretive filter to
this effect, i.e. which disallows [-definite] heads from being
specified by elements bearing the feature FOCUS:

(96) \* [\(\chi^n\) YP [+focus] [\(\chi^\prime\) X [-definite]]]

(96) correctly disallows operators in the same clause as the
subjunctive tense operator, as in (97a), while allowing extraction of a
wh- or focus-constituent out of a subjunctive CP, as in (37b). The
latter does not violate the filter under the assumption that traces
have the index of their antecedent, but no other features. Support for
this view of intermediate traces is given in Aoun, Hornstein, and
Sportiche (1982), where it is demonstrated that traces in intermediate
COMPs cannot be [+wh]. If they were, the subcategorization
requirements of the governing verb would have to be violated in
structures like ‘Who does John think \(\xi\) t\(\_t\) [\(\xi\) t\(\_t\) left]\’ and would be
satisfied in a structure like ‘\*Where did you wonder \(\xi\) \(t\_t\) \(\xi\) they
went \(t\_t\)\’. (It is assumed, following Chomsky 1973, that verbs
subcategorize for whether they may take a wh-complement or not. Thus,
think, on the basis of ‘\*John thinks who left’, must take a [-wh] COMP
and wonder subcategorizes a [+wh] COMP, as things like ‘\*I wonder that
they went to L.A.’ show.)

(97) a. \* 
   \(\xi\) XP \(\xi\) t\(\_t\) \(\xi\) \(\xi\) IP \(\xi\) \(\xi\) C \(\xi\) \(\xi\) C’ 
   SPEC
   TENSE \(\xi\) [-definite] 

b. \(\xi\) SPEC \(\xi\) t\(\_t\) \(\xi\) \(\xi\) IP \(\xi\) \(\xi\) C \(\xi\) \(\xi\) C’ 
   TENSE \(\xi\) [-definite]
Although (96) may have intuitive appeal, its invocation here may seem rather ad hoc. In section 6.3, independent motivation for (96), or something having its effect, will be given suggesting that it is in fact a general property of semantic well-formedness.

I suggested earlier that the syntactic feature [-definite] on INFL was a "grammaticization" of certain semantic properties of the subjunctive; this leaves open the possibility of there being languages in which such grammaticization has not taken place, though presumably they would represent the marked case, for learnability reasons. There are indeed languages in which interrogative subjunctives are grammatical. Kempchinsky (1985) discusses Italian and Picallo (1985:118, fn.15) notes that wh-subjunctives are possible in Catalan, though they are restricted to the compound past tense form and excluded in some dialects (a restriction not without interest for our proposal here). Such variation is to be expected under the analysis sketched here, though clearly many details remain to be worked out.17

This concludes our outline of the rule 'Move-α' and wh-constructions in Hausa. In the following subsections we will look in detail at the properties of these, providing an analysis of the locality conditions on movement rules in Hausa, as compared with other languages, and an analysis of the phenomenon of "relative aspect marking" in Hausa, which we will link to our analysis of wh-subjunctives.
6.2 Bounding Theory

In this section, we will examine locality conditions on movement rules, accepting for expository purposes the claim that such conditions should be separated from those involving the position of the extracted element. That is, here we will look only at subadjacency effects, with subadjacency taken to be an S-structure condition (cf. Chomsky 1973, Huang 1982, among others). The sanctioning of the position of empty elements by the Empty Category Principle (assumed to apply at LF—i.e., to the outputs of syntactic and LF 'Move-\(\alpha\)') and its relation to subadjacency will be discussed in section 7. It should be emphasized, however, that this separation may be artificial if the conclusions of the work by Kayne, Brody, and others can be maintained: we return to this issue below.

After presenting how bounding theory has been proposed to work, following roughly the discussion in Chomsky 1986a, and the types of structures it is designed to account for, the relevant array of data in Hausa will be considered. The peculiarities of relativization (versus other types of extraction) with respect to the subadjacency condition will be the major focus of the discussion of Hausa. It will be shown that a seemingly odd set of data (unlike that found for Italian relativization, for example) in fact is quite orderly once other relevant parameters of Hausa grammar are taken into account. A rather less orderly set of facts will be seen to characterize extraction out of noun complement complex noun phrases. The particular problems this poses will be noted here for the sake of completeness; no analysis will be proposed at this time.

75
6.2.1 Outline

The Subjacency Condition, a version of which is given in (98) below, has been proposed as a condition on movement such that a moved constituent may cross no more than one bounding node for any given instance of movement.

(98) No rule can involve X and Y in (i) if both m and n are bounding nodes.

(i) ... X ... [m ... (n ... Y ...) ...] ... X ...

Bounding nodes have traditionally been accepted to be S' and NP for all languages and S, parametrically. S', however, does not act like a bounding node when governed by a "bridge-verb" (in the sense of Erteschik 1973): compare (99), where the matrix verb is a bridge-verb, with (100), where it is not:

(99) Who [sg do you think [sg (that) [sg Mary loves e]]]
(100) Who [sg did he whisper [sg (that) Mary loves e]]

Stowell (1981) suggests that the non-bounding character of the sentential complement of bridge verbs versus the bounding character of non-bridge verb complements follows from the fact that bridge verbs assign a θ-role to their object complements, whereas non-bridge verbs do not. The "complement" of a non-bridge verb, then, is analogous to an adjunct, also an island to extraction. Chomsky (1986a), continuing along these lines, develops a formal definition of bounding node which entails that maximal projections not governed by lexical heads are bounding nodes. This is true for all languages for categories such as
NP, PP, etc. Projections of COMP and INFL, CP (i.e. S') and IP (i.e. S), may be set parametrically. Finally potential bounding nodes are bounding nodes wherever they immediately dominate a bounding node. So, for example, since S' is a bounding node, NP in a complex noun phrases is also a bounding node since it immediately dominates S' (regardless of the fact that it may be lexically governed). The functioning of the system should become clear as we proceed, though see Chomsky (1986a) for detailed development.

Notice in (99) that the embedded COMP may serve as an "escape hatch" for movement (allowing, then, successive cyclic movement) whether or not that is present. It has been suggested that this is due to free insertion/deletion of that, which has no intrinsic semantic content and hence is not required by the projection principle to be present at D-structure. (See Stowell 1981 and Lasnik and Saito 1984 on interaction of this property with the ECP.) This fact also falls out on an analysis in which complementizers are the head of S' (CP), while wh-phrases, etc., move to the SPEC slot of S', as in Chomsky (1986a). Cyclic movement, then, allows for movement out of an embedded clause without crossing two bounding nodes.

The core cases that the subjacency condition accounts for are those involving extraction out of embedded questions (the wh-Island Constraint), out of relative clauses and other complex noun phrases (the Complex Noun Phrase Constraint), and out of sentential subjects (the Sentential Subject Constraint). Recent work (Chomsky 1986a) has attempted to tie in the Subject Condition facts, the Adjunct Island Condition facts, and parasitic gaps facts as well. Our remarks here
will be limited to the "core" cases, which are illustrated in (101).

(101)  

a. *Who [s do you know [s' what [s e they stole e]]]

b. *Which woman [s did you give me [np the book [s' which [s e wrote e]]]]

c. *Who [s did you hear [np the news [s' that John married e]]]

d. *Who [s did [np [s' that [s e saw the Emir]]] surprise you]

Notice that in cases of embedded questions, illustrated in (101a), it is assumed that the embedded COMP, filled by a wh-element, cannot be used as an escape hatch. Wh-elements, unlike that, have semantic content (and thus are not candidates for free insertion) and, furthermore, must be present to bind the variable in the embedded clause. Movement of a second element to COMP would violate a filter prohibiting doubly filled COMPs, however this is to be derived (see Launik and Saito 1984 and references cited there).

The subjacency facts of English, as just presented, follow from taking both S' and S to be bounding nodes. The marginal acceptability of wh-island violations in some idiolects of English has often been attributed in the literature to the status of S as a bounding node. (Notice that (101a) is the only case where the bounding status of S would make a difference in grammaticality.) The parametric nature of S as a bounding node was originally developed by Rizzi, published as Rizzi (1980), to account for the fact that languages like Italian freely allow wh-movement out of embedded indirect questions. This is shown schematically in (102a): since S is not a bounding node in Italian, only a single bounding node--S'--is crossed in movement out of
an embedded question. Long wh-movement out of an embedded indirect question, however, is unacceptable, as expected, given that two $S'$ nodes are crossed. This situation is schematized in (102b).

(102) a. [g' relative clause [g' a indirect question e

b. [g' rel. clause [g' a indirect Q [g' a indirect Q e

Similar analyses utilizing the parametric nature of bounding nodes to give an account of variation in subcacy facts are developed by Sportiche (1979) for French and Taraldsen (1980) for Norwegian.

Alternative accounts of acceptable extraction out of islands are offered in Obenauer 1984, Cinque 1984, and Adams 1985. The analysis that will be given here of violations in Hausa tends to be in the line of the first two of these in that it will be argued that the gap in an island in Hausa is actually an empty pronoun (pro). I will not attempt to assess in any detail the merits of these alternative accounts here, though, since no appeal will be made to any notion of parametrized bounding nodes for Hausa. It might also be mentioned at this point that the parametrized bounding category approach to subcacy has been argued to pose rather serious learnability problems (cf. Truscott 1984).

The array of subcacy facts found in Hausa appear rather complicated at first glance. It will be shown, however, that they are quite systematic when one considers them within the context of the wider range of parameters of Hausa grammar. It should be noted, however, that judgements often vary from speaker to speaker and individual speakers may vary in their judgements. This is not unusual
for subjacency violations; it is well-known that such violations are weak in comparison to say ECP violations. Despite this degree of uncertainty, rather clear (and interesting) patterns emerged from checking with a number of speakers on a number of different occasions.

6.2.2 Relativization versus Other Wh-Extraction

Hausa, like Italian, allows surface violations of subjacency, as the following cases of relativization out of embedded questions illustrate:

(103) a. littasafrin da [g ka san [g'waa [g e ya rubuutaa g]]
    book-the REL 2sm know who 3sm write
    'the book that you know who wrote'

    b. mutumun da [g ka san [g' mee [g e ya rubuutaa g]
    man-the REL 2sm know what 3sm write
    'the man that you know what wrote'

There is an asymmetry in Hausa regarding the facts of extraction out of wh-islands: while elements may be relativized out of a wh-island, they may not be extracted by wh-interrogation out of a wh-island. Compare (103a-b) with (104a-b):

(104) a. *Wane littasaflī ka san waa e ya rubuutaa e
    which book 2sm know who 3sm write
    'Which book do you know who wrote?'

    b. *Wane mutum ka san mee e ya rubuutaa e
    'Which man do you know what wrote?'

In his discussion of Italian, Rizzi (op. cit.) also notes a difference between relativization out of wh-islands and wh-interrogation out wh-islands, the latter giving "more variable results". He attributes this to the fact that in general non-echo questions with more than one wh-
element are marginal. This explanation cannot be offered for Hausa since the asymmetry between relativization and wh-interrogation extends to extraction out of relative clauses and sentential subjects, as illustrated in (105) and (106):

(105) a. mutum da ka san littafin da e ya rubuutaa e
 man REL 2sm know book-the REL 3sm write
 'the man that you know the book that wrote'

b. *wane mutum ka ba ni littafin da e ya rubuutaa e
 which man 2sm give me book-the REL 3sm write
 'Which man did you give me the book that wrote?'

(106) a. mutum da ceewaa e yaa rubuutaa wannan littaafii yaa baa
 man-the REL that 3sm write this book 3sm give
 ni maaamakii
 me surprise
 'the man who that wrote this book surprised me'

b. *waa ceewaa yaa ga sarkii ya baa ka maaamakii
 who that 3sm see emir 3sm give you surprise
 'Who did that saw the emir surprise you?'

These facts plus the fact that focus-fronting is like wh-interrogation in obeying subadjacency, as shown in (107), indicate that it is something about relativization which is responsible for the wh-island violations. We can conclude, that is, that since the wh-island constraint is obeyed by wh-interrogation and topicalization, 5 is in fact a bounding node for subadjacency in Hausa and that the violations that are observed must be attributed to some property of relativization.

(107) a. *Wani mutum ka baa ni littafin da e ya rubuutaa e
 a man 2sm give me book-the REL 3sm write
 'A man, you gave me the book that wrote'

b. *Wani mutum ka san mee ya e rubuutaa e
 a man INFL know what INFL write
 'A man, you know what wrote'
It is not uncommon for languages to have two relativization strategies, one which involves a resumptive pronoun and violates sub\^acy and one which involves a gap and obeys sub\^acy. See, for example Chomsky (1977) and Borer (1984) on Hebrew and Fehri (1978) and Ayoub (1981) on Standard Arabic. English, as has often been noted, also has a resumptive pronoun strategy for relativization, though it is generally considered less than "standard". At first glance, however, the resumptive pronoun strategy approach does not appear to be a fruitful prospect for the Hausa cases of relativization sub\^acy violations. This is because the relativization structures in question contain gaps rather than pronouns. It is at this point that it should be recalled that Hausa is both a null subject and a null object language. We should expect that resumptive pronouns may be null in Hausa since all pronouns may be null. The sub\^acy violations of relativization structures in Hausa follow, then, from the assumption that relativization may be base-generated and the fact that Hausa allows null subjects and objects.\(^{18}\)

Rizzi reaches similar conclusions for Italian. Italian, which is a null subject language, also has a "stylistically marked" resumptive pronoun strategy for relativization. The result in Italian is that while long extraction of an object out of an indirect question in unacceptable, as we saw above, (since, it is hypothesized, although $S$ is not a bounding node in Italian, $S'$ is, and two $S'$ nodes are crossed in long extraction), long "extraction" of a subject is acceptable, though stylistically marked. Similarly, although Italian generally obeys the CNP constraint since both NP and $S'$ are bounding nodes,
relativization of a subject out of a CNP is acceptable. (Also expected is that relativization of subjects out of relative clauses should be acceptable at the style level allowing relativization without movement, though Rizzi does not specify this.) These facts follow given that Italian allows null subjects, but not null objects, and that the resumptive strategy is available for relativization in Italian.

Since Hausa allows both null subjects and null objects, we should expect that both subjects and objects should be available for relativization out of a "subjacency island". This is indeed the case. While interrogation out of a relative clause is entirely unacceptable, relativization of both subjects and objects out of a relative is acceptable. The complex nature of these sentences makes them rather difficult to process; what is relevant here in the contrast between (108) and (109).

(108) a. **Waa ka baƙa ni litasaƙin da maalaƙai suka san mutumin who 2sm give me book-the REL teachers 3p know man-the
d'a ƙa rabaƙeta ta ma ƙa REL 3sm write to
‘Who did you give me the book that the teachers know the man that wrote for?’

b. **Maa ka gwadaka mini maƙar da maalaƙai suka san what 2sm show to-me woman-the REL teachers 3p know
mutumin da a ta rabaƙeta ta ma ƙa
man-the REL 3sf write
‘What did you show me the woman that the teacher know man that wrote for?’

83
We should also expect that since only direct objects and subjects may be null in Hausa, relativization of other arguments out of wh-islands should be unacceptable, unless there is an overt resumptive pronoun. This is so, as examples like (110) and (111) show. The contrast between the (a) and (b) sentences shows that relativization of an indirect object must obey subjecancy. The (c) examples show that a subjecancy violation can be "saved" if a resumptive pronoun appears in place of the gap.

(110) a. Gaa taaboobin da Ali zai yii ma e kwaalii
here's cigarettes-the that A 3sm do to box
'Here are the cigarettes that Ali will make a box for'

b. Gaa taaboobin da Ali ya san mutumin da e zai yii
here's cigarettes-the REL Ali 3sm know man-the REL 3sm do
ma e kwaalii
to box
'Here are the cigarettes that Ali knows the man that will
make a box for.'

c. Gaa taaboobin da Ali ya san mutumin da zai yi musu kwaalii
to-them
'Here are the cigarettes that Ali knows the man that
will make a box for them.')
(111) a. Gaa mutumin da Ali ya saida ma e agoogoo
here's man-the that A 3sm sell to watch
'Here's the man that Ali sold a watch to'

    b. Gaa mutumin da suka ga agoogon da Ali e ya saida
here's man-the REL 3p see watch-the REL Ali 3sm sell
mas e
to
'Here's the man that they saw the watch that Ali sold to' 19

c. Gaa mutumin da suka ga agoogon da Ali e ya saida masa
     to-him
'Here's the man that they saw the watch that Ali sold him'

Another interesting contrast which shows up in the subjacency violation facts is that between relativization of a non-human direct object out of a subjacency island, which as we have seen is acceptable (see (105a) and (111b)), and relativization of a human direct object out of a subjacency island. The latter is unacceptable, as the following illustrates.

(112) a. Gaa yaarinyar da muka ga mutumin da e zai a suraa e
here's girl-the REL 1p see man-the REL INFL marry
'Here's the girl that we saw the man that married'

    b. Gaa mutumin da ka ga yaarinyar da ta sani e
here's man-the REL 2sm see girl-the REL 3sf know
'Here's the man that you saw the girl that knows'

    (cf. Gaa mutumin da ka ga yaarinyar da ta sa n siri
    'Here's the man that you saw the girl that knows him')

And, even speakers who tend to find wh-island violations less horrendous, interpret the following potentially ambiguous sentence as being the man catching the policeman and not vice-versa.

(113) Gaa mutuminj da ka san d'an dockan; da e ya kaamaa ej
here's man-the REL 2sm know policeman REL 3sm catch
'Here's the man you know the policeman that caught'
These facts receive a natural explanation within the analysis of wh-island violations as instances of the resumptive strategy for relativization since null objects in Hausa are restricted to [-human] nouns.

We have seen, then, that the subjacency facts of Hausa, which on the surface appear somewhat startling—relativization of subjects and non-human direct objects versus all other types of extraction—in fact, are systematic given the possibility of base generation of relativization with resumptive pronouns and the fact that subject and non-human direct object pronouns may be null in Hausa.

6.2.3 Extraction out of N-complement CNPs

Extraction is also possible out of noun-complement complex noun phrases. It may have been noticed that in our discussion of relativization versus other wh-extraction out of subjacency islands that none of the subjacency islands were N-complements CNPs. The reason for this division is that the dichotomy discussed above is not found with extraction out of sentential complements of nouns. The latter displays no dichotomy, or at least much less of one. The facts are basically that all types of wh-movement—wh-interrogation, topicalization, and relativization—may take place from any argument position inside the sentential complement of a noun, as (114) illustrates.

(114) a. Waa ka ji laabaarri wai an nuunaa wa e hootuna
who 2ms hear news that indef show to pictures
'Who did you hear the news that one showed pictures to?'
[wh-interrogation of indirect object]
b. Wani littaaftii suka ba ni shaawaraa wai e zai ba
a book INFL give me advice that INFL give

ka daa'dii
you pleasure
‘A book, they gave me the advice that would please you’
[Top. of subject]

c. Gaa  maatar  da Ali ya yarda da ceewaa wai
here’s woman-the REL Ali 3ms agree with saying that

Sheehu yanaa soo e
S 3ms love
‘Here’s the woman that Ali agrees with the talk that
Shehu loves’ [Rel. of human direct object]

Clearly these facts have nothing to do with the resumptive pronoun
strategy available for relativization: arguments which may not be null
nevertheless may be relativized over more than one bounding node (114)
and non-relative extraction may take place over more than one bounding
node (114a,b). Yet, we saw above that there is good reason to believe
that Hausa does obey subacency. And, in particular, we saw that
complex noun phrases which are the result of relative clauses are
islands to movement. What, then, is special about N-complement CNPs
which allows them to be transparent for extraction?

The premise of this question is in fact not quite accurate. Not
all N-complement CNPs are non-opaque. That is, the facts illustrated
by (114) turn out to be a lot “messier” than the particular examples
given there. The degree of acceptability of extraction from N-
complement CNPs varies widely—from complete acceptability to a level
of unacceptability akin to other subacency violations. This variation
is not so much a function of differences between speakers or
inconsistency of any given speaker as it is a function of the
particular verb and complement noun selected. That is, while
extraction out of certain V-N pairs is consistently acceptable (by all speakers), extraction out of other V-N pairs is either more variable or generally out. Examples (with literal translations) of consistently "transparent" V-N pairs are given in (115a) and of less transparent or opaque V-N pairs in (115b).

(115)  

a. baa izinii (give permission), baa shaawaraa (give advice), ga alaamaa (see sign), ji laabaarii (hear news), ji zancee (hear talk), rubuuta laabaarii (write news), saamu laabaarrii (get news), shaaw jii (drink hearing), yarda da ceewaa (agree with saying), yi dubaaraa (do plan), yi mafarkii (do dream), yi tsooroo (do fear)

b. baa sheela (give decrees), dauki dubaaraa (take plan), ji dubaaraa (hear plan), ji shaawaraa (hear advice), ji tsooroo (feel fear), yarda da maganaa (agree with talk), yi maamaakii (do surprise), yi sheela (do decree)

Some examples of the less acceptable extractions, to be contrasted with (114), are given in (116):

(116)  

a.?Mee iyaayee suka daukii/ji dubaaraa wai yaaransu what parents 3sm take hear plan that children-their 

zaa su yii e 
FUT 3p do 'What did parents accept/hear the plan that their children will do?'

b.?Waa suka ji sheela wai e zai ruhe makaranta who 3p hear decree that 3sm close school 'Who did they hear the decree is going to close the school?'

c.??Waa ka yi maamaakii wai Aisha tanaa soo e who 2sm do surprise that A 3sf like 'Who were you surprised that Aisha like?'

It might appear as though extraction out of N-complement CNPs in Hausa, then, is no different than in English, where as has often been noted in the literature, such extraction if generally better than that
out of other "subjacency islands" and is also subject to lexical variation. However this fact is to be accounted for in English (cf. Chomsky 1986a for some discussion) would also cover Hausa. I think that this conclusion is on the wrong track. The acceptability level of the "good" cases of extraction out of N-complement CNPs seems to be much higher than the level of acceptability of such extraction in English, though such cross-language "intuitions" must certainly be taken with caution, in the absence of supporting evidence. In any event, it is difficult to imagine what kind of subjacency account would give the desired results in anything like a natural way.

A confirmation of both the fundamental distinction between Hausa CNPC violations and English ones, on the one hand, and its being unrelated to subjacency, on the other hand, is to be found when other peculiarities of N-complement CNPs are considered. Unlike in English, complementizers may be missing in these structures (117) and adjunct extraction if often acceptable out of the N-complement CNP (118):

(117) a. Mun ji laabaarii (wai) an saidaa ta
     1p hear news that indef sell it
     'We learned that it was sold'

     b. An baa shi shaawaraa (wai) ya yi hankalii
        indef give him advice that 3sm do carefulness
        'He was advised to be careful'

(118) a. Inaa ka ji laabaarii (wai) Ali yaa tafi
     where 2sm hear news that 3sm go
     'Where did you learn that Ali went?'

     b. Yaushee/don mee ka ji laabaarii (wai) yaaraa sun tafi
        when why 2sm hear news that children 3p go
daajii
        bush
     'When/why did you learn that the children went to the bush?'

89
These structures, which appear to fall under the Empty Category Principle (to be discussed in section 7), will be left as a mystery to be solved, pending (among other things) a wider sample of data. Presumably the higher degree of acceptability of N-complement CNP constraining violations in Hausa is to be related to whatever it is that permits the ECP violations in (117) - (118). I have nothing concrete to propose here.

Before beginning our discussion of the ECP, another feature of wh-Movement, well-known in the Africanist literature, will be investigated in some detail.

6.3 Tense Features and Operators in Hausa

In this section, we continue our exploration of 'Move-α' in Hausa, examining ultimately the relation between tense marking on INFL and wh-movement. A morphological distinction in Hausa between structures headed by an operator and those not so headed will be used as a structural test in later chapters.

The discussion will be organized as follows: first, in 6.3.1, an outline of an analysis of the tense/aspect system in Hausa will be given, much of which is based on the descriptions in Schuh (1982/1983, 1985a,b) from which numerous text examples are also taken. Then, after discussion and analysis of the facts of subsequence marking in 6.3.2, the phenomenon of "relative aspect marking", the focus of this section, will be taken up. The contexts where a "special" form of the perfective (/compl/ete) and imperfective INFL is used to the exclusion of the "normal" form will be considered and an analysis developed based
on the presence of a local operator (subsections 6.3.3 and 6.3.4). In 6.3.5, it will be shown that this phenomenon may marginally be extended so that, descriptively, it is triggered by a trace in an intermediate COMP of successive cyclic syntactic wh-movement. Various implications of the facts and my analysis of them will be discussed. In 6.3.8, the reasons for preferring a syntactic analysis of relative aspect marking over previously proposed analyses will be summarized and given additional support.

Many of the facts discussed throughout this section and the basic distinction between relative and nonrelative aspect forms in terms of definiteness come directly from the work of Schuh (cf. references cited above). What I propose here is a formal syntactic way of accounting for both of these which also extends to facts either not previously considered or not considered with respect to relative aspect marking, and for which previous analyses fall short.

6.3.1 Tense Features

The INFL(ection) node in Hausa, which unlike its counterpart in many other languages never undergoes affix-hopping, is composed of two kinds of features: the agreement features person, number and gender and features which indicate the time, aspect, and mood of the verb. We will refer to the latter features as tense features, using tense in its large sense to indicate an operator whose features specify a point in time or a time span in which the action expressed in the predicate takes place.

Recall that tense in Hausa may either be [+tense] or unspecified

91
for tense features (T-features), as in the subjunctive. AGR features (phi-features), with one exception to be discussed in chapter 3, are present whenever INFL has tense features. Since Hausa has no infinitival clauses, this gives the three possibilities in (119) for the INFL node:

(119) a. [INFL 0] (gerund clause)

b. [INFL [AGR phi-features] [TNS 0]] (subjunctive clause)

c. [INFL [AGR phi-] [TNS T-features]] (tensed clause)

The INFL node has eight different morphological forms, as far as tense-marking is concerned. Since features such as [+ past] are relative to temporal determination in the discourse context (lacking overt determination, the referent is the moment of enunciation) and certain forms have more of an aspectual than tense function, a given form of the INFL node may correspond to more than a single set of tense features. What is traditionally called the continuous, for example, may contain the feature [+past] or [-past], though it is always [-perfective]. An element which is [+perfective] likewise may be either [+past] or [-past], the latter being the situation of some stative verbs in Hausa, which are perfective and hence use the same morphological marking for aspect as verbs in the "completive". The different forms are given in (103), along with traditional terms that will be used to designate them. I follow Schuh (1982/3) in illustrating INFL forms in the third person plural since such forms always involve segmental changes.
(120) 3p INFL Forms:

sun  completive/perfective
sukâ  relative completive/perfective
sunâ  continuous
sukeâ  relative continuous
sukañ  habitual
záa sù  future
sàâ  future II (/indefinitive future)
sù  subjunctive

I propose five tense features to account for these INFL forms and their uses--[perfective], [past], [subsequent], [habitual], and [conditional], defining them in obvious ways: [subsequent] = action which is following in time to a fixed point of reference, [perfective] = action which is completed with respect to a fixed point of reference, [past] = action which has taken place before a fixed point of reference, etc, bearing in mind that the point of reference may be fixed by discourse as well as real time.

Having posited a set of tense features, it remains to specify (1) how Tense acquires a particular set of features and (2) which sets of features correspond to which INFL forms (and how). Consider first how AGR, the other bundle of features composing INFL, "acquires" its features. Presumably this is accomplished through agreement with the features of the subject: but, exactly how? I would suggest that Hausa, being a null subject language, generates phi-([=person, number, and gender]) features in INFL in the base. (The presence of complete phi-features at S-structure is presumably what allows Hausa to have null subjects--cf. chapter 3.) INFL is coindexed with the subject in its domain at S-structure (see Borer (1984)). An inflectional rule then checks that the features of the subject are identical with those of its...
coindexed INFL. Let us make the same assumption for Tense features, bearing in mind, however, that optionality of insertion of features of all kinds—syntactic ([+N], etc...), phonological, and morphological—seems to be the null hypothesis (any resulting ill-formed strings being ruled out by general principles). Rules of tense marking (or agreement), then, serve either to check the value of already-present features or assign values to blank matrices.

This view of feature marking means that in the absence of a tense-marking rule which specifies a particular feature in a particular environment, the value for that feature may be left unspecified. To illustrate the functioning of the system, we shall consider the use of the "continuous" form of the INFL node and its relation with the "habitual" form. Although the habitual is restricted to predicates which express a habitual action, the continuous is not restricted to predicates which do not express a habitual action. (Indeed, in some dialects, the "continuous" is used to express all non-past, imperfective action, whether habitual or not.) In addition, the "continuous", as mentioned above, is used to express imperfective actions which take place in past time. The "spell-out" (or checking) rules in (121) account for these facts.

(121) a. -Past
    -Perf <---> /sukån/
    +Habi
    +3
    +p

    e.g. SUKAN taashi da Rarfee bakwai
         'They get up at 7 o'clock'

94
b. -Subseq
   -Perf <--- /sunaa/
   +3
   +p

   e.g. SUNAA taashi da Harfee bakwai
        'They get up at 7 o'clock'

   e.g. Jiya Filaanii SUNAA kiwon shaanuu a can
        'Yesterday some Fulani were tending cattle over there'

   e.g. Filaanii SUNAA kiwon shaanuu a can
        'Some Fulani are tending cattle over there'

(121a) specifies that the tense form SUKA corresponds to the features nonpast, nonperfective and habitual. (121b) specified that the tense of the form SUNAA corresponds to the features nonpast and nonperfective—whether habitual or not.

6.3.2 Subsequence Marking and Temporal Dependency

Now that we have seen how the morphological form of INFL might be linked to particular tense features, let's consider how it is that tense features appear in INFL. As already outlined above, the simplest assumption would seem to be that tense features are freely generated in INFL and that various interpretive or "checking" rules ensure that any given set of features is appropriate to the particular sentence-level and discourse-level context. That is, each particular configuration of tense features in each environment ultimately must have an interpretation in order for it to be grammatical. In this section, the marking of temporally dependent subsequent actions or events will be considered. These interpretive rules will be shown in later sections to interact in an interesting way with "relative aspect" marking.

Hausa has two ways of marking an INFL as being sequential and

95
temporally dependent on the immediately preceding INFL, depending on whether the actions are [-perfective] or [+perfective]. These will be considered in turn and compared with various other tense interpretation rules.

The INFL corresponding to an event or action which is to be interpreted as sequential to an INFL whose tense form is the future, indefinite future, habitual, or continuous appears in the subjunctive. This is illustrated in (122).

(122) Zan tafi gidan Aisha, TA dafaa mini tuwoo, NU yi 1sFUT go house-of A 3sfSUB fix to-me food 1pSUB do hiiraa, MU tafi sinima chatting 1pSUB go cinema 'I'll go to Aisha's house. She'll fix food for me, then we'll chat and, then, we'll go to the movies'

The subjunctive was characterized above as having a null tense marker which receives interpretation from the tense features of a higher tense node. This is precisely the role that the subjunctive plays here: the temporal dependency between sequential clauses is shown by use of a temporally dependent INFL. The temporally dependent INFL par excellence in Hausa is the subjunctive. This interpretation of tense marking can be summarized by the rule in (123).

(123) In [... INFLi ... INFLj...],
[-perf] [0Tense]
where (i) INFLi c-commands INFLj, and

(ii) there is no INFLn [+Tense] such that INFLi c-commands INFLn and INFLn c-commands INFLj,

then, INFLj is dependent in time on and sequential to INFLi

The marking of dependent sequential events in the perfective does
not use the subjunctive. Temporal dependency in the perfective cannot use this optional presumably because [OTense], the lack of specification of tense features, is incompatible with [+perfective], the indication that an event is viewed as completed. This incompatibility does not exist between the future, indefinite future, habitual, and continuous and the subjunctive in that the former are not viewed as completive, which is also the case for the subjunctive by virtue of the fact that it has no inherent tense specification at all.

Dependent sequential actions in the perfective are marked, rather, by repetition of the INFL form on which the sequential action is dependent. If the preceding INFL has the relative completive form, then the relative completive is used in the sequential clause and if it has the "plain" completive form, then the "plain" completive is used in the sequential, dependent clause. These are exemplified in (124)

(124) a. Yaarga SUKA tafi faadar aarkii SUKA/*/SUN gaidaa shi 'The children came to the emir's palace and greeted him.'

b. ... sai ta ga mutaanee SUN ci adoo SUK/*/SUN SUKA hau dawaakii 'Then she saw that the people had gotten all dressed up and had mounted the horses'

c. Watu sai SUN kooma SUN saakee waasaa kee nan 'So, then they returned and played some more'

Perfective temporal dependency can be summarized as in (125), where the feature [+definite], to be discussed in detail below, is borrowed from Schuh (op. cit.) to distinguish the two perfective forms.
(125) In [...] INFL_i ... INFL_j ... }

[ *perf ]    [ *perf ]
[ apast ]    [ apast ]
[ &def ]    [ &def ]

where, (i) INFL_i c-commands INFL_j, and

(ii) there is no INFL_n such that INFL_i c-commands INFL_n and INFL_n c-commands INFL_j.

then, INFL_j is dependent in time on and sequential to INFL_i

Besides a series of coordinate clauses, as in (124), (125) also accounts for the temporal dependency found in the subordinate clause of verbs whose semantics entails that the action in the subordinate clause is dependent on it. This class of verbs, which I will refer to as the saa-class, includes saa 'make', berii 'allow', kyalee 'let', and rigaa 'precede'. Examples are given in (126).

(126) a. SUN saa yaaraa SUN yi aikin
    3pCOMPL make children 3pCOMPL do work-the
    "They make the children do the work"

a'. *SUN saa yaaraa SUKA yi aikin

b. SUKA saa yaaraa SUKA yi aikin

b'. *SUKA saa yaaraa SUN yi aikin

With saa-verbs, then, the INFL of the subordinate clause will be identical to that of the saa-verb clause if the INFLs agree in perfectivity and if INFL_j is sequential to INFL_i, necessarily the case due to the semantics of these verbs, unless the actions are simultaneous. Thus, all of (127) are in conformity with (123) and (125).
(127) a. SUNAA barin yaaraa SUNAA tafiya makarantaan 3pCONT let children 3pCONT go school
'They are letting the children go to school'

b. SUNAA barin yaaraa SU tafi makarantaan 3pCONT let children 3pSUB go school
'They let the children go to school'

c. SUN aaaa yaaraa ZAA SU zoo goobe 3pCOMPL make children 3pFUT come tomorrow
'They made the children come tomorrow'

The marking of dependent subsequent actions, which, as we have seen, can be found in both saa-clause complements and coordinate sentences, can be contrasted with the marking of nondependent subsequent actions or events. In this case, the "normal" [+subsequent] tense form is used—the future—which, like all tenses in Hausa, is a relative tense. This can be seen in the embedded clause of verbs such as cee 'say', as in (128a), and in coordinate clauses, as in (128b).

(128) a. SUN/SUKA cee yaaraa ZAA SU yi aikin 3pCOMPL/REL COMPLE say children 3pFUT do work-the
'They said the children will/would do the work'

b. Jiya SUNAA yawoo cikin qarrii. ZAA SU zoo gidanmu, yesterday 3pCOMPL stroll in town 3pCOMPL come house-

aamaa scojojii SUN hanaa su. our but soldiers 3pCOMPL prevent them
'Yesterday they were strolling in town. They were going to come to our place, but the soldiers prevented them'

(129) a. *SUKA cee yaaran SUKA yi aikin
'They said the children will/would do the work'

b. SUN ce yaaran SUN yi aikin
*'They said the children will/would do the work'

In other words, subsequence cannot be marked by SUN or SUKA in the embedded clause of a cee-verb, as (129) illustrates, because rule (125) requires temporal dependency in order for a subsequence interpretation
to be given to these forms, and the semantics of 'say' is such that there is no such temporal dependency.

The only other possible tense interpretation for (129a) -- that SUKA yi 'doing' be interpreted as being prior to SUKA cee 'saying' -- is not possible either since the pluperfect in Hausa is marked by the completive (SUN, etc.) preceded by a [+Past] INFL, as in examples (130a,b), and thus (129a) receives no possible interpretation and is therefore excluded. (129b) is possible only with the pluperfect interpretation, as in (130a).

(130) a. SUN cee yaaraa SUN yi aikin
    3pCOMPL say children 3COMPL do work-the
    'They said they had done the work'

    b. SUKA zoo SUKA cee abookinmu baa yaa gidaa, AN
    3pREL come 3pREL say friend-our NEG 3sm house indefCOMPL

    qan shi a tashar
    see him at station-the
    'They came and said our friend wasn’t home; he had been seen
    at the station'

The rule in (131), which gives an interpretation to the examples in (130), does not allow '*SUKA saa yaaraa SUN yi aikin' ('They made the children had done the work') either since the result would be that 'doing the work' preceded 'making', which is incompatible with the semantics of saa.
(131) In [... INFL₁ ... INFLₖ ...],
     [+perf]  SUN

where, (i) INFL₁ c-commands INFLₖ and
     (ii) there is no INFLₙ such that INFL₁ c-commands
         INFLₙ and INFLₙ c-commands INFLₖ

then, INFLₖ is interpreted as past in time w.r.t. INFL₁

Summarizing, a description of the tense marking of subsequence has
been given. If a clause is dependent on the preceding clause, subsequence is marked in it by a tense form identical to that of the preceding clause, if the two actions are [+perfective], and by the subjunctive if the two actions are [-perfective]. Nondependent subsequence is expressed by the future tense form and anterior past by the completive form. These facts were described by tense interpretation rules which are assumed to be part of the semantic interpretation, though nothing we will have to say here depends on the particular formalism used here.

6.3.3 The "Narrative Use" of "Relative Aspect Marking"

As was seen in the previous sections (cf. in particular the table in (120)), there are two completive INFL forms and two continuous INFL forms in Hausa. Traditionally, the "special" form of these pairs is referred to as the "relative" form due to the fact that this is the form which obligatorily appears in relative clauses. As has been often noted with respect to this phenomenon in many African languages, this term is misleading since the "relative" form is not restricted to relative clauses and furthermore it has nothing to do with this particular tense being "relative" to a discourse determined point of
time reference (all tense is "relative" in this sense in Hausa). Despite these disadvantages, rather than invent a new term and thereby risk disguising the phenomenon to those familiar with the literature on the subject, I will continue here use of the term "relative aspect marking", with the caveats just given. We begin our discussion of relative aspect marking by looking at its so-called "narrative" function, and its use in various adverbial clauses.

Hausa grammars typically describe one of the contexts where the relative completive appears as being that of "narratives" or any chronological recounting of a series of events or actions. Schuh (1985a,b) shows that this is descriptively inadequate and that it is only when chronological events are both completed with respect to the moment of speech and individual that the relative completive is used. A particularly illustrative text example of this latter point is given by Schuh and repeated here as (132). The nonrelative completive (YAA) is used in the first clause in (132), despite the fact that there is a chronological sequence and the events are past with respect to the moment of speech, in order to indicate that there was more than one act of swinging. (YAA is repeated in the second clause to indicate subsequence--cf. rule (125) above.)

(132) Idan [Gizo] YAA yi shiloo YAA gaji, sai ya sau koo ya ci gu’dann
    'If Spider swung and got tired, he would come down and eat some
    groundnuts’

(132) can be contrasted with (133), another example from Schuh, where the relative completive is used and where each action is individual--i.e., happens exactly one time.

102
(133) Da [samaarii uku] SUKA isa SUKA neeme su ga sarkii, AKA yi musu isoo. SUKA fadi SUKA yi gaisuwaa

'When the three youths arrived, they sought to see the emir. They were announced. They spoke. They gave their greetings.'

Schuh concludes that the relative compleive is used to represent events interpreted as "specific to a time and/or place and already instantiated" and suggests the label "definite perfective" to reflect this fact. This characterization, he argues, also encompasses another context in which the relative compleive is used. Various adverbial clauses require either the relative compleive or the nonrelative compleive, depending on whether the action is understood as a single action temporally dependent on the main clause or not. Clauses introduced by saa 'then/only if', har 'until', and da 'when/as soon as' offer illustrative minimal pairs, as the examples in (134) and (135), from Bagari (1976) and Schuh (1985a,b), show. The subordinate clauses of (134a-c), where the relative compleive appears, all are interpreted as being single completed events, temporally related to the action of the main clause. Where the action in the adverbial clause does not have these properties, as in (135a-c), the simple compleive is used with these same conjunctions:

(134) a. ZAN yii musu maganaa saa SUKA taashi
isFUT do to-them talk only 3pREL leave
'I was going to talk to them and then they left'

b. Yaaraa SUNA iihuu har AKA baa su kaashii
children 3pCONT yelling until indefREL give them excrement
'The children were yelling up until they were given a beating' [the yelling stopped]
c. Da SUKA isoo, sai MUKA ci abinci
  As soon as 3pREL arrive then 1pREL eat food
  'Immediately after they arrived, we ate'

(a) ZAN yii musu maganaa (ammaa) sai SUN taashi
  1sFUT do to-them talk but only 3pCOMPL leave
  'I'm going to talk to them (but) only when they will have
  stood up'

b. Yaaraa SUNAA iihuu bar AN bas su kaashii
   children 3pCONT yelling until indefCOMPL give them excrement
   'The children were yelling so much that they were given a
   beating' (but the yelling may have continued)

c. Da MUN isoo, ZAA SU taashi
  as soon as 1pCOMPL arrive 3pFUT leave
  'As soon as we arrive, they will leave'

The soundness of this descriptive generalization receives further
support from the fact that conjunctions such as don (doomin) and
sabooda 'because', which unlike sai, bar, and da are not temporal
specifiers and which do not allow their clauses to be temporally
dependent on the principal clause (---on the contrary), do not allow the
relative completive, as (136) illustrates:

(136) 'Yan makarantaa sun yi yaajii sabooda maalaamai SUN/*/SUCA hanaa
  su su yi waaan kwaloo
  'The students went on strike because the teacher stopped them
  from playing soccer'

To summarize, the relative completive can be described as
appearing when an action or event is temporally defined. Being so
specified entails that the action be individual. Roughly, temporal
specification may stem from a previously stated temporal element--
either certain adverbial conjunctions or an established action or
event. The latter is typical of narration, which generally begins with
some sort of stage setting to situate the action in time or place,
after which the chronicle of event is unfolded. It is for this reason, as R. Schuh (p.c.) has pointed out that in a sequence of single past actions, generally each INFL is in the relative completive—including the first. Marginally, however, the first of the series may be in the nonrelative completive, the relative completive INFLs beginning only in the next clause. This fact, illustrated in (137a), seems in this light to be rather clearly related to the marginal acceptability for some speakers of the relative completive in the embedded clause of a completive saa-verb clause, mentioned above in footnote 20, and illustrated here in (137b).

(137) a. ??Yaaraa SUN tafi faadar sarkii SUKA gaidee shi child 3pCOMPL go palace-of emir 3pREL greet him 'the children went to the emir's palace and greeted him'

b. ??Maayuu SUN saa maataa SUKA zubda yaaransu witches 3pCOMPL make women 3pREL pour-out children-their 'The witches made the women miscarry'

It appears to be the case, then, that the temporal specification required for the use of the relative completive may also be furnished by the first individual event of a series, though only marginally so. Before attempting an analysis of this and the larger descriptive generalization it is part of, another context in which relative aspect marking occurs must be considered. We turn to this and to a general analysis of relative aspect marking in the following section.

6.3.4 Operators and Relative Aspect Marking

6.3.4.1 Presentational Focus and Indefinite Determination

As the reader familiar with the phenomenon of relative aspect marking in other languages will have been waiting for, there is yet
another context where the relative form of INFL appears to the exclusion of the nonrelative form: wh-constructions. That is, in structures which are the result of wh-movement–relatives, focus-fronting, and wh-interrogation–the relative completive and relative continuous forms are required and their nonrelative counterparts are excluded.

Before turning to these facts though, it would be appropriate at this point to first consider briefly the status of the relative/nonrelative distinction in other languages. Indeed, this phenomenon is no oddity of Hausa by any means. It is to be found in various forms in languages all over the African continent—whether closely related or not: Kanakuru (West-A, Chadic), Tera (Biu-Mandara, Chadic), Fula (West Atlantic), More (Gur), Zulu (southern Bantu), Kikuyu (Bantu), to give just a sampling. It is reported for various non-African languages as well: Clements (1985) cites Chippewa, Ilongo, Jacaltec, Malagasy, and Telegu.

In a survey of the relative/nonrelative distinction and its properties in various African languages, Hyman and Watters (1984) show that the two forms have similar restrictions in language after language. Among the contexts where only the relative form may occur are the following: relatives, wh-interrogatives, argument focalization, various temporal clauses, and in narratives. There is some variation though among languages both in the distribution of the two forms and in which tenses make the distinction at all. Hyman and Watters discuss the distinction from the angle of the nonrelative form, which they refer to as "auxiliary focus", suggesting that what is basically a

106
semantic distinction is grammaticized to varying degrees and in varying ways from language to language. A canonical case of "pragmatically controlled" auxiliary focus would be the situation found in Aghem (a Grassfields Bantu language of Cameroon), where both the focus (= nonrelative) and nonfocus (= relative) forms may appear in an ordinary declarative sentence, the first being interpreted as having a focused verb, as the English translation indicates.

(138) a. µ mač zi be-'kɔ ndn
   I Pastl/FOC ate fufu today
   'I DID eat fufu today'

   b. µ mač zi ki-be ndn
   I Pastl ate fufu today
   'I ate fufu today'
   [from Hyman and Watters (1984), tones omitted]

In Hausa, and in many other languages which exhibit the relative /nonrelative distinction, the "focus auxiliary" form is obligatory in a context like that of (138). That is in a declarative sentence, in the absence of a "special" context such as those mentioned above, the form corresponding to the focus form in Aghem is found, and never that corresponding to the Aghem non-focus form, as (139) for the completive, and (140), for the continuous, illustrate.

(139) a. Yaaraa SUN ci tuwoo
   children 3pCOMPL eat tuwoo
   'The children ate tuwoo'

   b. *Yaaraa SUKA ci tuwoo
   children 3pREL COMPL eat tuwoo

107
(140) a. Yaaras SUNAA cin tuwoo
    children 3pCONT eat tuwoo
    'The children are eating tuwoo'

b. *Yaaras SUKEE cin tuwoo
    children 3pREL CONT eat tuwoo

Given that the contrast in (138) in Aghem is not found in Hausa, it is not surprising to find that (139a) and (140a), the literal rendering of such sentences (without focus-fronting), contain no semantic focus. (The verb is focussed in Hausa by focus-fronting, as we will see in chapter 4.)

It is not difficult, however, to see how the Hausa relative/nonrelative distinction is related to that in Aghem and similar languages. One of the pragmatic functions of focus is to introduce a new individual into the discourse (e.g. John gave a PICTURE to Mary). Culicover and Rochemont (1983) refer to this as "presentational focus". Suppose, then, that the focus function of the nonrelative forms (i.e., SUN and SUNAA) has been grammaticized such that they are equivalents of indefinite articles for nouns, also a syntactic means of introducing new individuals into the discourse. Thus, continuing with the definiteness distinction pointed out by Schuh, we can assume that the nonrelative INFL forms have the feature [-definite]. As is the case with noun phrases in Hausa, it is the [-definite] INFL which is the unmarked form in that it is used unless a previous mention of the the action or event is "sufficiently specific" to sanction use of the definite form, even though the action may in fact have been evoked already. Examples are given in (141). (See Jaggar (1985) on the determination of NPs.)
(141)  a. A: Yaaraa SUN/*SUKE ci tuwoo?
   'Did the children eat the tuwo?'

   B: Ii, SUN/*SUKE ci
   'Yes, they ate (it)'

   b. A: Mee yaaraa SUKE ci?
   'What did the children eat?'

   B: SUN/*SUKE ci tuwoo
   'They ate tuwoo'

The formal characterization of "sufficiently specific" and of the exclusion of the [-definite] INFL in these contexts will be the subject matter of the remainder of this section.

6.3.4.2 Wh-Movement and Relative Aspect Marking

Returning now to the facts of relative aspect marking with respect to wh-movement, as mentioned earlier, both the continuous and completive require the "relative" form in structures involving wh-interrogation, relativization, and focus-fronting.

(142)  a. Mee SUKEE/*SUUNA tsamaanii yaaraa SUN yi?
   SUKE /*SUN cee
   what 3pREL/3pCONT think children 3pCOMPL do
   3pREL/3pCOMPL say
   'What do they think / did they say the children did?'

   b. Ban san ba waa SUKEE/*SUUNA tsamaanii YAA yii shi
   SUKE /*SUN cee
   NEGls know NEG who 3sm do it
   'I don't know who they think/said did it'

   c. Yaaran da SUKEE/*SUUNA tsamaanii SUN tafi daajii
   SUKE /*SUN cee
   children-the that 3p go bush
   'the children they think/said went to the bush'

   d. 'Yan Muusaq SUKEE/*SUUNA tsamaanii SUN tafi daajii
   SUKE /*SUN cee
   kids-of M 3p go bush
   'They think / said MUSA'S KIDS went to the bush'
Since each of these constructions also has the properties of wh-
movement (apparent "unbounded" dependencies, conformity to subjacency,
etc.), a reasonable hypothesis would be that the use here of the
relative completive and the relative continuous is a consequence of wh-
movement.22

The "wh-marking" use of relative aspect in Hausa differs from wh-
marking processes in languages like Spanish (Torrego 1984), Chamorro
(Chung 1982), Palauan (Georgopoulos 1985), and French (Kayne and
Pollock 1978). In these languages, movement triggers some kind of
process in each of the clauses through which the moved element has
passed. In Spanish, for example, subject-verb inversion occurs in all
(and only) those clauses whose COMPs have served as "escape hatches"
for successive cyclic wh-movement. In Hausa, on the other hand, wh-
marking is not required of INFLs in all the clauses through which a wh-
element has moved. In each of (141) above, only the matrix INFL is in
the relative form, even though the wh-phrase originated in the embedded
clause and thus, on a subjacency analysis, has moved through the
intermediate COMP.

Since traces in intermediate COMPs do not have features (cf.
discussion above), we may say that the difference between the processes
in Hausa and Spanish is that wh-marking in Hausa is triggered only by
operators--[-Wh] or [+focus], while, in Spanish, subject-verb inversion
is triggered by wh-operators as well as their traces in COMP. That is,
we can make the descriptive generalization in (143).
(143) Given I, an INFL local to (i.e. governed by) an operator, I may not appear in the nonrelative form.

(143) recalls the situation encountered with respect to wh-subjunctive clauses discussed above in section 6.1.1. It was suggested there that the prohibition of a subjunctive clause having a local wh- or focus-operator was due to an intuitively plausible condition which excludes [-definite] heads from being specified by a [+focus] element. It was argued that all elements occupying the (SPEC, CP) are assigned the feature [+focus], following work of Horvath. Case (1) of (143), represented in (144a), then, is accounted for by this condition, reproduced as (145), since, as was just argued, the nonrelative INFL bears the feature [-definite]. And, the situation drawn in (144b) is grammatical for the same reason that extraction out of a subjunctive clause to a higher SPEC is: traces do not bear features and thus it is not [+focus], and thus (145) is respected.

(144) a.  
   CP
   SPEC C'  
   |     
   XP1 C  
   |     
   [+focus] I  
   |  
   SUN [-definite]

   b.  
   CP
   SPEC C'  
   |     
   t1 C  
   |     
   I  
   |  
   SUN [-definite]

(145) * \[\chi'' \ YP_1 \ [+focus] \ [\chi, X [-definite]]\]

Summarizing, the generalization in (142) about wh-movement and relative aspect marking has been shown to follow from condition (144), which was independently motivated by the fact of wh-subjunctive clauses. In the next section, it is suggested that it is in general
the presence of any operator in [SPEC,CP] which creates a context in which an indefinite INFL (the nonrelative form) is excluded, and thus a definite INFL (the relative form) must occur.

6.3.4.3 Temporal and Other Operators

I have suggested that the nonrelative INFL form is excluded where it is governed by an operator in [SPEC,CP] as a result of wh-movement. As we have seen, this is not the only context where the relative form appears though. In various subordinate adverbial clauses and in narration, the relative form is also used. Ideally, one would like to put all these contexts together. If the analysis of wh-movement and relative aspect marking just presented is on the right track, then the question to ask now would be the following: is it possible to maintain that there is an operator in [SPEC,CP] in the adverbial and narrative clauses in which the relative form may appear (and the nonrelative form may not)? In this section, I'd like to sketch out an analysis which suggests that an affirmative answer to this question is not implausible, and which thus allows for a unified treatment of relative aspect marking.

Consider first the occurrence of the relative versus nonrelative form in adverbial clauses headed by baavan/baavan da 'after' and tunda 'since, because'/tun da 'since the time that'. As is illustrated below in examples taken from Bagari (1976) and Schuh (op. cit.), the first of these pairs requires a nonrelative INFL, while the second a relative INFL.

112
(146) a. Sun yi barcii baayan MUN/*MUKA daawoo
   3p do sleep after 1p 1pREL return
   'They slept after we came back'

b. Yaaran sun fita baayan da SUKA/*SUN ci abincii
   children 3p go-out after 3pREL 3p eat food
   'The children went out after they ate'

(147) a. Tunda yaaran SUN/*SUKA daawoo, sai Audu ya taashi
   since children 3p 3pREL return then A 3sm leave
   'Since the children have come back, Audu should leave'

b. Yaaran sunaa barcii tun da SUKA/*SUN daawoo daga
   children 3p sleep since 3pREL 3p return from
   makarantaa
   school
   'The children have been sleeping since they came back from
   school'

Bagari argues that time adverbials headed by baayan da and tun da
are in fact relative clauses in which the head noun lookacii 'time' has
been deleted. He notes that lookacii may appear overtly with no change
of meaning in these constructions: 'Sunaa barcii tun lookacin da SUKA
daawoo daga makaraantaa' (= (147b)). He notes that these clauses have
all the characteristics of relative clauses: presence of the relative
complementizer da and obligatory relative aspect. The problem with
Bagari's analysis of these adverbial clauses is that he assumes that
all time adverbial clauses are underlying relative clauses, so that
baayan-clauses and baayan da clauses have the same origin: baayan
lookacin da 'after the time that' plus S. It is assumed that lookacii
and da may be deleted and that relative aspect is triggered only if da
is not deleted.

Besides the fact that such construction-specific (and lexeme-
specific) deletion rules are undesirable in a restrictive theory of
grammar, there is an obvious and simpler alternative: clauses not
involving relative aspect are not underlying relatives, while those that do, are. That is, the difference between the two types of clauses is as in (148); one consists of a preposition with a clausal complement and the other of a preposition with a relative clause complement which may be headed or nonheaded. My analysis thus adopts Bagari’s essential insight that the relative aspect marking found in time adverbials follows from the fact that such clauses may be relative clauses.

(148) a. [pp tun/baayan [np (lookacin) [cp O_i [CP da [IP .. t_i...]]]]
    b. [pp tunda/baayan [cp [IP ...]]]

Relative marking is required in IP in (148a) because of the presence of the governing operator in [SPEC,CP] which is [+focus] and which thus excludes an indefinite (nonrelative) INFL. In (148b), there is no operator in [SPEC,CP] and thus the nonrelative form of the INFL is not excluded.

This analysis also accounts for the two types of clauses headed by da ‘when, as soon as’, mentioned above, if we take da to be a preposition in the clauses where the nonrelative form appears, and the relative complementizer of a relative clause (headed by lookacii or by an empty category, as before) where the relative INFL form appears. As already noted, the relative complementizer da is homophonous with the preposition ‘with, by’.

(149) a. [np (lookacin) [cp O_i [CP da [IP SUKA/*SUN isoo t_i]]]]
    that 3pREL 3p arrive
    ‘Immediately after they arrive’
    b. [pp da [cp MUN/*MUKA isoo]]
    ‘As soon as we arrive’

114
(Note also that lookacin may not appear in (149b) or (148b), since these are not relative clause constructions.)

Applying this analysis to other adverbial clauses, we may derive in the same way the fact that ‘although’-clauses headed by koo da require the relative aspect, whereas those headed by koo do not. One might propose that koo may be either an operator, in which case it appears in [SPEC,CP] with da, or a preposition, both functioning, as above, as subordinate conjunctions.

(150) a. [cp Koo da [ip MUKA/*MUN sanii kanaa nan, ba mu jee ba although 1pREL 1p know 2sm here NEG1p go NEG ‘Even though we knew you were there, we didn’t go’

b. [pp Koo [cp AN/*AKA kashe birii, yaa rigaa yaa yi although indef kill monkey 3sm precede 3sm do banna damage ‘Even though one may have killed a monkey, it has already done the damage’

Related to this is the use of the word koo as the wh-complementizer ‘whether’. Its nonoperator status is suggested not only by the fact that the governed INFL must be in the nonrelative form, but also by the fact that extraction out of koo ‘whether’-clauses is perfectly acceptable.

(151) a. Naa tamsayaa koo SUN/*SUKA yi aikin 1s ask whether 3p 3pREL do work-the ‘I asked whether they did the work’

b. Ban san ba koo SUN/*SUKA tafi Kanoo NEG1s know NEG whether 3p 3pREL go K ‘I don’t know whether they went to Kano’

115
(152) a. Wadanne yaaraa Haliima ta tambeyaa koo SUN saci which children H 3sm ask whether 3p steal kudin?
money-the
'Which children did Haliima ask whether stole the money?'

b. Waa ka mancee koo  kaa ganii a kaasuwa?
who 2sm forget whether 2sm see at market
'Who did you forget whether you saw at the market?'

Chomsky (1986a) suggests that the reason that extraction out of whether-clauses in English produces much weaker island violations than extraction out of other types of wh-clauses is because whether is in-situ in the head of CP (---COMP) at S-structure, thereby leaving the SPEC free for successive cyclic movement. A similar story could be told for Hausa, supporting the idea that relative aspect marking is linked to the presence of an operator in (SPEC,CP).

Quite generally, adverbial clauses which require relative aspect marking can be analyzed as containing an operator in the specifier position of the clause—either moved there by wh-movement, as in the temporal headless relatives, or base-generated there. This sentential operator automatically bears the feature [+focus], since all elements appearing in (SPEC,CP) in Hausa are assigned this feature. The appearance of the conjunction in the specifier positions may change the meaning of the clause (cf. discussion of (134) and (135), for example) in that as a result of bearing the feature [+focus], the temporal or other logical operator is thereby singled out and/or emphasized.

This brings us to the relative aspect marking found in "narratives". Notice that in our analysis of subordinate adverbial clauses, an abstract, empty temporal operator was posited in (148a) and

116
(149a). In temporal relatives (whether headed or not), the operator is never overt, unlike in other relatives. The wh-word that may appear when arguments are relativized may not appear with either relativized time-words or relativized reason-words and these have not relative wh-word of their own either.

(153) a. Mutumin (wan)da SUKA/*SUN man-the who-that 3pREL 3p 'the man who they...

b. Littaahin (wan)da SUKA/*SUN book-the who-that 3pREL 3p 'the book which they...

c. Lookacin (*wan)da SUKA/*SUN time-the Sa’an (*wan)da SUKA/*SUN time-the 'the time at which, when'

d. daliiilin (*wan)da SUKA/*SUN reason-the 'the reason (for) which, why'

Apparently, then relative marking may be triggered by null operators, too.

This conclusion might lead us to a way of incorporating the narrative use of relative marking into our analysis, though our remarks here should be regarded as speculative. Perhaps, for instance, narrative sequences in Hausa are organized such that individual events, which represent focalized material with respect to the "stage-setting" at the beginning of the narration, are marked by a null [+focus] operator in the same way that focus-fronting and wh-movement are new information and thus are marked [+focus]. In other words, individualized events in sequence are formally distinguished by the clause being specified by a null [+focus] operator, triggering relative marking.
It can be noted in this regard that sentences which are non-focalized because there is in principle no "stage-setting" material, may appear only with a nonrelative INFL, as expected. What Schuh (1985a) refers to as "statements of general or timeless circumstances" are examples. Proverbs are a typical case:

(154) a. In KAA reena kaasuwa, koo kaucinta baa kaa cii if 2sm despise market even kauci-its NEG3sm eat 'If you despise a market, you don't eat even its lowliest food'

b. AN Ri cin karse, AN koomoo AN ci kwikwiyou indef refuse eating dog indef return indef eat puppy 'Straining at a gnat and catching a camel'

Consider, finally, conditional clauses with respect to relative aspect marking. While counterfactual conditional clauses require the nonrelative form, as is always the case for the pluperfect meaning (cf. rule (131) above), what Bagari (1976) terms "Reality Conditionals" may take either the relative or the nonrelative completive, as (155), from Bagari, illustrates:

(155) a. In/idan yaaran SUN zoo, zan baa su kwaboo-kwaboo if children 3smCOMPL come 1s give them penny-penny 'If the children come, I'll give them a penny each'

b. In/idan yaaran SUKA zoo, zan baa su kwaboo-kwaboo 3pREL 'If the children come, I'll give them a penny each'

Descriptively, the alternation in (155) follows if it is assumed that 'whether/if' may appear either as specifier of the subordinate clause (in which case relative marking is triggered) or as head of a phrase (a PP, for example) containing the CP as its complement.
Clearly this proposal, though plausible, would require independent support.

An interesting fact about reality conditional is that speakers generally feel that there is a difference in the degree of certainty between examples like (a) and (b) in (155), but vary as to which is more certain. Bagari reports that in his speech, the conditional clause must be "almost certain" in order for the nonrelative form to appear, the relative form being used where there is less certainty. He notes, however, that other speakers find just the opposite distinction. Schuh reports the same divergence.

An explanation for this divergence in interpretation might be found within the analysis sketched out here. The story would go as follows: when in appears in [SPEC,CP] and thus is assigned the feature [*focus], it is the conditionality which is being emphasized and thus the eventuality of the event is less certain than when in appears without the focus feature. This would account for the interpretation (Bagari's) where SUKA is less certain and SUN is more certain. On the other hand, when in is focussed, it is a particular situation which may be singled as a result of presentational focus and thus the sentence with the SUKA form is taken to be more sure than the one with SUN, where in is not focussed. The difference in interpretation may be said to stem from whether speakers favor an interpretation of focussed in as emphatic focus or as presentational focus, both of which are independently available for elements that have undergone focus-fronting to the [SPEC,CP] positions, as is illustrated in (156).
(156) a. A: Mee sukee cii?
    'What are they eating?'

    B: Naaamaa gasasshes sukee cii [presentational]
    'They’re eating barbecued meat'

    b. Kai! Naaaman raarumii sukee cii [emphatic]
    'Hey! They’re eating CAMEL MEAT'

Summarizing, an analysis of relative aspect marking has been given
which links relative marking to the presence of an operator in the
specifier position of CP. In the next section, strong support for
this view of relative aspect marking is argued to be found in the
phenomenon of "generalized" "wh-marking".

6.3.5 Generalized "Wh-Marking"

The condition in (144), which forces relative marking to occur
when INFL is governed by an operator in [SPEC,CP], generates the core
wh-construction relative aspect facts which were illustrated above:
normally relative marking occurs only in the clause containing the wh-
element. However, some speakers (marginally) accept sentences such as
those in (157) where there is relative marking in the INFL nodes
governed by "intermediate traces" of the moved operator as well.

(157) a. Mee suka cee yaaraa SUN / ?SUKA sayaa?
    what 3pREL say children 3pCOMPL 3pREL buy
    'What did they say the children bought?'

    b. Mee kakee zaton YANAA / YAAKE yii?
    what 2sREL think 3mCONT 3sREL do
    'What do you think he is doing?'

These judgements suggest that the context of relative marking has been
generalized so that it is triggered not only by operators in [SPEC,CP],
but also by intermediate traces in SPEC linked to such an operator.
That is, both operators and their traces sanction the use of the
definite INFL. Though this generalization of relative aspect marking
is easy enough to describe—(144) could be changed so that "or a trace
coindexed with" is added or perhaps a wh-marking rule might be
formulated such that operators and their traces trigger relative
marking, it's not clear why this kind of variation occurs. Although
the generalized version of relative aspect marking is fairly marginal
in Hausa (and, to my knowledge, has gone unreported in the literature)
and is totally excluded in other languages (More, for example (HaIk et
al 1986) or Duala (Epée, 1976)), it is obligatory in other languages
(cf. Clements (1985) on Kikuyu, for example). Why should intermediate
traces "count" for relative marking in some languages, but not in
others? Or, assuming that traces always "count" and adopting a
"Connectedness"-type approach (Kayne 1984) to island violations, where
successive cyclic movement is neither forced nor excluded, could one
take these facts to indicate whether a particular language has
successive cyclic movement or not? I will not attempt to answer these
questions here, noting merely the relevant generalization, given in
(158), and that the fact that relative marking may generalize in this
way is yet further evidence of its dependence on the presence of an
element in the specifier position of CP.

(158) Given I, an INFL local to (i.e. governed by) an operator, or
the trace of an operator, I may appear in the relative form.

In the remainder of this subsection and those that follow in this
section, some of the predictions made by (158) will be explored.
We begin by looking at the interaction of relative marking with subsequence marking, as analyzed in 6.3.2. There it was shown that subsequence in the perfective is marked by repetition of the INFL form on which the sequential action is dependent. Recall also from section 6.3.3 (cf. discussion of (137)) that the temporal specification necessary for the narrative use of the relative aspect, normally furnished by some presentational material not part of the chronicle, may also marginally be sanctioned by the first of the series of individual events. We will refer to this as "marginal temporal specification". Apparently, the null temporal operator required to trigger relative aspect marking in such a context can only marginally be identified by an action that is itself part of the series. There are thus in total four ways in which relative marking may appear, the first two of which are "standard", while (iii) is marginally acceptable to some speakers, and (iv) is only very marginally acceptable for some speakers.

(159)  

(i) presence of a local operator—either overt, or null and sanctioned by overt material ("wh-Marking")

(ii) copying of the preceding relative form under subsequence ("Subsequence Marking")

(iii) presence of a local trace of an operator ("Generalized wh-Marking")

(iv) presence of a null temporal operator sanctioned by the first of a series of definite events ("Marginal Temporal Specification")

Consider again now the see-class of verbs whose semantics entails that the action of the embedded clause is logically posterior (e.g., 'make'). In a wh-structure in the perfective, the INFL of the embedded
clause of this class of verbs must also be relative for all speakers, contrary to the verbs illustrated in (157), where the relative form in the embedded clause is possible only for some speakers.

(160) a. Mee suka saa yaaraa SUKA / *SUN yii what 3pREL make children 3pREL 3pCOMPL do COMPL COMPL

‘What did they make the children do?’

b. Yaaran da suka rikide SUKA / *SUN zama kuraye children that 3pREL metam. 3pREL 3p become hyenas COMPL COMPL COMPL

‘The children that turned into hyenas’

c. Yaaraa suka barii SUKA / *SUN ci naaman raaRumii children 3pREL allow 3pREL 3p eat meat-of camel COMPL COMPL COMPL

‘They let THE CHILDREN eat the camel meat.’

This requirement of relative marking in the embedded clause of saa-class verbs holds only when both the matrix and the embedded clause are perfective, as the acceptability of following sentence illustrates.

(161) Mee SUKEE barii yaaraa SUNAA yii? what 3pREL CONT allow children 3pCONT do

‘What do they allow the children to do?’

Thus it is clear that the reason the embedded clauses of this particular class of verbs require relative marking when in the perfective is to be attributed to subsequence--(158ii).

Now since the subsequence rule is limited to sequential events, we should expect that a non-perfective INFL in a clause embedded under a matrix saa-verb, as in (161), should be able to vary in relative marking with the same levels of acceptability as any other embedded INFL in a wh-structure. This is the case, as (162) illustrates.
(162) a. Mee kakee barin yaaraa SUKEE yii? [cf. (161)]  
    3pREL  
    'What do you allow the children to do?'  

b. Mee kakee saa yaaraa SUNAA / SUKEE yii?  
    3pCONT  3pREL  
    'What do you make the children do?'

Consider next a wh-structure in which a matrix non-saa-verb has an embedded saa-verb which in turn has an embedded clause. This is schematized in (163).

(163) whi [s INFL1 non-saa-V [s' INFL2 saa-V [s' INFL3 V yii]]]

The view of relative marking developed here correctly predicts the acceptability judgements in (164).

(164) a. Mee Aabu TA ga mijinta [s' YAA bar kishiyarta [s' TAA yii]  
    INFL1   INFL2  
    (REL)   (REL)  
    INFL3  
    (non-REL)  

b. ?  
    YA  
    (REL)  

b. ??  
    YAA  
    (non-REL)  

b. *  
    YA  
    (REL)  
    TAA  
    (non-REL)  

    'What did Abu see her husband let her co-wife do?'

(164a) is the result of the application of the "conservative" rules—that is, wh-marking is restricted to INFL governed by a local operator (the matrix INFL, in this case) and subsequent marking copies the INFL the subsequent INFL is dependent on (i.e., INFL3 is identical to INFL2). (164b) is the result of generalized wh-marking. (164c) is the result of marginal temporal specification, without generalized wh-
marking. (164d) is entirely rejected since if INFL2 has relative marking (here, by generalized wh-marking), then so must INFL3 by subsequence.

This situation can be compared to that schematized in (165), where it is the matrix verb which is a saa-verb and V2 is a non-saa-verb.

(165) \textit{whi} [s INFL1 \textit{saa-V} [s' INFL2 non-saa-V [s' INFL3 ...]]]

This time, INFL2 must be relative--i.e., variation is limited to INFL3. Since INFL1 is relative by regular wh-marking, INFL2, which is subsequent to INFL1 by virtue of the nature of V1, must be also be in the relative form regardless of whether generalized wh marking takes place or not. INFL3 is relative if wh-marking is extended to intermediate INFLs, otherwise it is non-relative.

\begin{verbatim}
(166) a. Mee ka barii [s' SUKA gan ka [s' KAA yii
    INFL1                 INFL2               INFL3
    (REL)                (REL)               (non-REL)

    b. ? SUKA KAA
        (REL) (REL)

    c. * SUN KAA / KA
        (non-REL) (non-REL)/(REL)
\end{verbatim}

'What did you let them see you do?'

Consider now structures in which the operator originates not in the most embedded clause, but in the matrix clause--that is, structures in which there is no successive cyclic movement (and thus no "intermediate" relative INFLs). The predictions of our system are quite clear. If the matrix verb is a saa-verb, the embedded INFL will be relative because of subsequence marking. On the other hand, if the matrix verb is a non-saa-verb, the embedded INFL must be non-
relative—even for speakers who normally allow the marginal
generalization of wh-marking—since the intermediate SPEC, not having
served as an “escape hatch” for movement, is not indexed to an
operator. The sentences in (167) and (168) illustrate the accuracy of
this prediction.

(167) a. Waa ya baar yaaraa SUKA / *SUN ci naaman raakumii?
   (REL) (non-REL)
   ‘Who let the children eat camel meat?’
   b. Mee ya saa yaaraa SUKA tahi daajii SUKA halbi kuuraa?
      (REL) (REL)
      * sun/suka
      * suka sun
   ‘What made the children go to the bush and shoot a hyena?’

(168) a. Waa ya tabbataa sarkii YANAA / *YAKEE zuwaal
      (non-REL) (REL)
      ‘Who is sure that the emir is coming?’
   b. Waa ya ji wai yaaraa SUN / *SUKA ci naaman raakumii?
      (non-REL) (REL)
      ‘Who heard that the children ate camel meat?’

The interaction between relative marking and subsequence marking,
then, is fairly straightforward. The phenomenon of generalized wh-
marking reinforces the correctness of viewing relative marking as
being a consequence of a governing element in [SPEC, CP]. Given this
at least partial connection between relative marking and wh-movement,
one might expect relative marking not to occur in contexts in which
the resumptive pronoun strategy must be used since movement would
create a subadjacency violation. Not all cases of resumptive
relativization are real tests, however. In cases like that in (169),
for example, relative marking is obligatory despite the lack of

126
movement because the *wh*-operator base-generated in \{SPEC,CP\} governs INFL.

(169) a. Gaa yaarinyar da SUKA san mutumin da e zai aurre ta here's girl-the that 3sm know man-the that 3sm marry her 'Here's the girl that they know that man that's going to marry her'

   b. Gaa mutumin da SUKA san littasfin da e ya rubuutaa e here's man-the that 3sm know book-the that 3sm write 'Here's the man that they know the book that wrote'

There are, however, other structures where the resumptive pronoun strategy is used to avoid a subadjacency violation and where it should be possible to find nonrelative marking. Relativization out of a sentential subject is one such context. In a structure of this type, the SPEC which governs the INFL of the sentential subject is not the SPEC which contains the *wh*-operator. If such structures involved movement, the lower COMP would be indexed and we would expect the lower INFL to vary in relative marking--relative, if *wh*-marking has generalized and non-relative, if it has not. Since movement in such structures would violate subadjacency, we argued that relativization is possible here only because it is base-generated. As above, other types of *wh*-movement are impossible out of such structures and arguments which cannot normally be null must have an overt resumptive pronoun in these structures. Since these structures can only be the result of base generation, we predict that relative marking be impossible for the INFL of the sentential subject. This prediction is borne out by the facts, as (170) shows, giving support to the idea that relative marking is dependent, at least in part, on movement.
(170) a. Gaa [np mutaanan [g' da [g' ceewaa/wai a SUN / *SUKA here's people that that 3p 3p COMPL REL COMPL ga sarkii] yaa baa ni maamaakii]] see emir 3sm give me surprise 'Here are the people that that saw the emir surprised me.'

b. Gaa [np mutumin [g' da [g' ceewaa/wai sarkii YAA / *YA gan here's man-the that that emir 3sm 3sm see COMPL REL COMPL shii] yaa baa ni maamaakii]] him 3sm give me surprise 'Here's the man that that the emir saw him surprised me.'

6.3.6 Wh-marking and wh-in situ

6.3.6.1 Relative Marking as an S-structure Phenomenon

We have seen that the syntax of languages like Hausa and English contains a rule of wh-movement which moves wh-phrases to a presential position, COMP (or, perhaps, the specifier of COMP, as in Chomsky (1986a)). At LF, the wh-phrase is interpreted as a quantifier-like element, binding a variable (its trace) and taking scope over its c-command domain. Facts having to do with selection and scope of wh-phrases argue that there is an LF equivalent of wh-movement which creates LF structures out of S-structures.

Huang (1982) shows that the scope and selection factors involved with moved wh-phrases in English are present in Chinese and Japanese, languages in which wh-phrases are always in situ (i.e., they always appear in their base-generated position—cf. Aoun et al (1982)). These same properties are found with (non-echo) wh-in situ in English and in French, languages which do have syntactic wh-movement. Since wh-in situ and wh- in COMP are interpreted (as far as scope is concerned) in the same way, it is suggested that their LF representations be similar. That is, it is assumed that wh-in situ are moved to COMP by wh-movement.
on the "right side" of the grammar, yielding structures in which all
wh-phrases are in COMP at LF. Thus, following Aoun et al, the French
direct questions in (171) both have the LF representation in (172),
reflecting the fact that they are synonymous.

(171) a. Qui as-tu vu?       b. Tu as vu qui?
     'Who did you see?'      'You saw who?'

(172) [S' [COMP qui] [S tu as vu ti]]

Likewise, the fact that verbs like English wonder which require a
wh-complement exist in Chinese, despite the fact that it lacks
syntactic wh-movement, argues for an LF version of wh-movement:
movement of the wh-phrase would allow for the selectional restriction
on 'wonder' that it subcategorize for a wh-complement (i.e. a clause
whose head is [+wh]) to be satisfied.

(173) a. Wo xiang-zhidao (S' Lisi mai-le sheng)
      'I wonder Lisi bought what

 b. *Je me demande Lisi a acheté quoi

(See Aoun et al and Lasnik and Saito (1984) for development of
parameters which account for these differences.)

Hausa also allows non-echo wh-in situ constructions, though, as in
English, only in cases of multiple interrogation:

(174) a. Waa YA sayi mee
       who 3smREL buy what
       'Who bought what?'

 b. *YAA sayi mee
    3smCOMPL buy what
    'He bought what?'
Consider now multiple interrogation structures with respect to wh-marking. We concluded above that wh-marking in Hausa occurs on an INFL which is governed by a fronted operator (a COMP, or more accurately, SPEC, coindexed with one). The data upon which this conclusion was based all involved S-structure wh-operators. In the light of the preceding discussion, we now can ask whether wh-marking is triggered by LF operators as well. That is, is wh-marking an LF or an S-structure phenomenon?

An answer to this question can only be found by examining embedded clauses which contain a wh-in situ and which are not already headed by a wh-phrase in COMP (since the latter would force wh-marking, independently of the presence of the wh-in situ). Since wh-in situ in Hausa occur only in structures which already involve a wh-phrase in some COMP (i.e. cases of multiple interrogation), we must look at structures like that in (175):

(175) S-structure: (COMP wh-phrase1) [s ti [s' [s wh-in situ ]]]

LF: [COMP wh-phrase1 wh-phrase2] [s ti [s' [s] [s ti ]]]

If wh-marking applies at LF, then we should expect the embedded clause in (175) to optionally allow wh-marking on the embedded INFL, since after LF movement of the wh-phrase, there could be a trace in the intermediate COMP coindexed with the overt wh-COMP, as in the LF structure given in (175). In fact, relative aspect marking is totally excluded in such embedded clauses, as the sentences in (176) illustrate. These should be compared with (177), where the trace in
the intermediate COMP of an S-structure wh-phrase may (optionally) trigger wh-marking:

(176) a. Ban san ba wakej [g ti ya cee wai YAA / *YA sayi mee
 NEGIs know NEG who 3sm say that 3sm 3sm buy what
 REL COMPL REL
 'I don’t know who said he bought what’

b. Ban san ban wakej ti yakee tsammanii wai YAA / *YA sayi mee
 who 3sm think 3sm 3sm buy what
 REL CONT COMPL REL COMPL
 'I don’t know who thinks he bought what’

(177) Wakej yakee tsammanii wai ti YAA / YA sayi mee
 who 2sm think that 3sm 3sm buy what
 REL CONT COMPL REL COMPL
 'Who do you think bought what?’

Wh-marking in Hausa, we may conclude, does not apply at LF. The same is apparently the case for "Stylistic Inversion" in French (cf. Kayne and Pollock 1978:597):

(178) a. Où est parti Jean
 'Where went John?’

b. Jean est parti où
 'John went where?’

c. *Est parti Jean où
 'Went John where?’

Similar conclusions are reached for analogous processes in Chamorro (Chung (1982)), Palauan (Georgopolos (1985)), and Spanish (Torrego (1984)). It seems, then, that all of these processes apply to S-structures. Why is this the case? Ultimately one would like to tie the condition responsible for triggering relative marking and the various other processes just mentioned to some other property of S-structure. One avenue of study might be to require a definite INFL
(the relative form) to be connected, in the sense of Kayne (1984), to an antecedent operator, a formalization of the idea expressed earlier that an INFL may bear the feature [+definite] only where it may receive sufficient specification. Since it is independently argued that Connectedness, the condition requiring that there be paths between various anaphoric elements and their antecedents (which subsumes both subadjacency and the ECP), is an S-structure condition, then the fact that relative marking is an S-structure phenomenon would follow. Problems arise, however, if, as Kayne (1984) suggests, wh-in situ and resumptive pronouns are also subject to Connectedness, since neither of these triggers relative marking, as we have seen.

Taking a different line, one might conclude that the generalization is that moved elements may move successively cyclically, in that they may display "generalized wh-marking", whereas in situ elements—whether wh- or resumptive pronouns—may not. It might be thus suggested that this is an argument that S-structure movement is successive cyclic, while LF movement is not (cf. Aoun, Hornstein, and Sportiche 1982); a wh-in situ in multiple interrogation would not trigger relative marking on the intermediate COMP since it must move directly to the COMP already containing a wh-phrase. Echo-questions are not problematic if an analysis is adopted like that suggested in Culicover and Rochemont (1983) (cf. also May (1985)) whereby echo wh-in situ are adjoined to (the highest) CP at LF. In such a position they would not specify the INFL and thus it would follow that relative marking cannot occur. While this scenario would work for Hausa, which does not allow non-echo wh-in situ in nonmultiple interrogation
contexts, it becomes inadequate when applied to the many other languages having relative/nonrelative marking distinction which do regularly allow non-echo \textit{wh-in situ} questions, but only with the nonrelative INFL form (Kikuyu and More are examples).

Whatever the ultimate explanatory analysis for the fact that relative marking has the properties of an "S-structure phenomenon" may be, it is still possible to use the descriptive generalizations arrived at here to explore various phenomena. Specifically, relative aspect marking, under the analysis given above, represents a test for the presence of an S-structure operator or its trace in the specifier position of a clause. If an operator is in such a position, the INFL it governs must appear in the relative form. If the trace of an operator is in such a position, the INFL it governs may optionally, and marginally, appear in the relative form. In the next two sections, this test will be applied to cases of string vacuous movement and parasitic gaps.

6.3.6.2 Implications for the Vacuous Movement Hypothesis

Keeping in mind our conclusion that only S-structure \textit{wh}-quantifiers (and their traces) trigger relative marking in Hausa, let us consider now the nature of the movement of a subject \textit{wh}-phrase in Hausa, a subject-initial language. As has been often noted, such movement in such languages is "string vacuous" in that there is apparently nothing which obliges one to conclude that a \textit{wh}-phrase has actually moved from subject position to a presentential position, given that the two are string adjacent.

Given the abundance of evidence touched on above that all \textit{wh-}
phrases are in (SPEC, CP) at LF, Chomsky (1986a: section 9) rejects proposals that would exclude vacuous movement altogether (cf. George (1980)), proposing instead that "vacuous movement is not obligatory at S-structure" (= the "vacuous movement hypothesis"). The effect is that subject wh-phrases may be either in situ or in SPEC at S-structure. This assumption allows for certain relative strengths of wh-island violations (reported in various places--cf. Chung and McCloskey, 1983, and references cited there) to be accounted for. It has been noted that an island formed by "extraction" of a subject is less opaque that those formed by extraction from other positions. This follows from the Vacuous Movement Hypothesis in that if the subject wh-phrase may remain in situ at S-structure, then SPEC may be used as an escape hatch (allowing movement out of the island). As Chomsky notes, the "weak island effects" found even in these cases suggests that subject wh-in situ are marginal in languages where all other wh-phrases overtly move to SPEC.

This idea that the language learner generalizes syntactic movement from cases for which there is overt evidence (i.e., where the linear order is changed) to all cases of wh-phrases receives direct support from facts in Hausa relating to wh-marking. As we have seen, wh-marking is possible only with an S-structure operator. If wh-subjects could optionally remain in situ at S-structure, then we would expect to find that relative aspect marking is optional with a subject wh-phrase. That it is obligatory in such cases, as for all lexical wh-phrases, shows that subject wh-phrases must move at S-structure like other wh-phrases:

134
(179) a. Ali baı san ba waa YA / *YAA sayi moottar Muusa
A NEG3sm know NEG who 3sm 3sm buy car-of M
REL COMPL
'Ali doesn't know who bought Musa's car'

b. Waa YAAKEE / *YAAAA tune inda muka sayi see
who 3smREL CONT 3smCONT remember where lp buy what
'Who remembers where we bought what?'

These facts, and similar ones cited in Clements, McCloskey, Maling, and Zaenen (1983) and Kenstowicz (1985), raise the question of whether the Vacuous Movement Hypothesis is really wanted at all--for any language. Obligatory morphological or phonological processes sensitive to movement (or traces) in Kikuyu, Irish, and Tangale must also apply when such movement is vacuous. There is, then, a certain repertoire of languages in which it is possible to "see" that string vacuous movement is obligatory, and not optional. Now, if the Vacuous Movement Hypothesis is actually a parameter, one might expect to find movement-sensitive processes which are obligatory when movement is string visible but that are optional when movement is vacuous. I know of no such case in the literature.

This gap, if indeed this is the case, could of course be accidental. There are other reasons to regard the Vacuous Movement Hypothesis with suspicion, however. In order to incorporate this hypothesis into the "Barriers"-system, Chomsky must complicate in a stipulatory way the conditions needed to account for the fact that wh-in situ must have the same scope as a wh-phrase which appears in specifier of CP at S-structure. Assuming that scopal properties require all wh-phrases to be in pre-IP position at LF and that

135
selectional properties are satisfied under government at LF, it can be said that wh-phrases at LF move to a position occupied by wh-. Because of the VMH, however, it is necessary to stipulate that this condition regards only nonvacuous movement, as in (178), Chomsky's (117), because the SPEC that an in situ subject would be moving to is not occupied by wh-.

(180) At LF, wh-phrases move nonvacuously to a position occupied by wh-

(180) requires, then, that the notions vacuous movement versus nonvacuous movement be formally distinguishable at LF, a not obvious matter. Avoiding the problem by allowing the subject position to be accessible to the matrix verb for selectional properties, and thus allowing even LF Vacuous Movement to be optional, does not seem very feasible since, even if the barrier status of IP could be gotten around, problems for absorption would arise.

All of this leaves open, however, the subjacency facts that the VMH is able to give an account for. This account is not without problems, however. It predicts, for instance, interrogation out of an island to show the same sort of contrast as relativization out of an island. (All but one of the examples in Chung and McCloskey (1983) are of relativization out of islands and the exception contains a "third wh-phrase"—cf. Kayne (1984:176).) That is, even though other types of subjacency violations are less acceptable, there should nonetheless be an improvement when the island is formed by subject "extraction". This does not seem to be the case, however. (179a), which contains an island formed by extraction of the object, seems in fact to be better
than (179b), which contains an island formed by extraction of the subjects. (179c-d) seem to be equally bad, despite the difference in "type" of island.

(181) a. ??Who do you need to find something that you can give to?
b. *What do you need to find someone who can give you?
c. *What do you need to find someone who you can intimidate with
d. *What do you need to find someone who understands?

The lack of contrast in interrogation out of islands might be due to other factors. Besides, this does not help us with the contrast in relativization out of islands which does exist and about which the VMH does have something to say. One should expect that if the contrast is indeed related to the VMH, then it will not show up in Hausa and other languages in which it can be shown that vacuous movement is obligatory. The predicton for Tangale, for example, would be that an island formed by extraction of a direct object, which is to an S-final position and thus is often string vacuous, though signaled by a phonological process, should be less opaque than an island formed by subject extraction. Unfortunately, movement is always clause-bounded in Tangale (M. Kenstowicz, p.c.) and thus the predicton cannot be tested.

Because of the null resumptive pronoun strategy possible for relativization of subjects and inanimate objects in Hausa it is difficult to find appropriate potential contrasts. However, preliminary checking suggests that the same slight amelioration found with relativization out of a subject island in comparison with that out of other islands in English is also found in Hausa, as (182)
illustrates.

(182) a. ??Gaa yaarinyar da 'yan sandaa SUKA saan 6arsawon da here's girl-the that police 3pREL know thief-the that
  e YA saida ma e agoogn Muusaa
  3smREL sell to watch-of M
  'Here's the girl that the police know the thief that sold
  Musa's watch to'

b. ?Gaa yaarinyar da 6araayin SUKA saaci agoogon da here's girl-the that thieves 3pREL steal watch-the that
  Ali YA saidaa ma e e jiya
  A 3smREL sell to yesterday
  'Here's the girl that the thieves stole the watch that Ali
  sold to yesterday'

This suggests that the VMH may not be an appropriate explanation for
the improved island violation facts (and thus that it can be dispensed
with without regret), though the matter should be pursued in the
various other languages in which there is overt evidence that vacuous
movement is obligatory.

6.3.7 Implications for the Representation of Parasitic Gaps

Another phenomenon for which relative marking provides an
interesting test is parasitic gap constructions (see Taraldsen 1979,
Engdahl 1981, Chomsky 1982 and references cited there). These are
structures in which (at least, superficially) there is one operator
corresponding to two gaps, one of which is referred to as the "real" gap
since it is in a position from which movement is ordinarily possible,
and one of which is referred to as the "parasitic gap" since it is in a
position from which movement is not ordinarily possible and hence is
said to be "parasitic" on the "real" gap. Thus, for example,
extraction is not generally possible out of an adjunct clause (=Adjunct Island Condition), yet a gap is possible in an adjunct clause just in case it is parasitic on a "real" gap. Compare the sentences in (183) to those in (184).

(183) a. *Waa yaaraa suka sayi bindigoogii baayan sun ganii q a talabijan
   'Who did the children buy guns after they saw on television?'

b. *Waa Ali ya kashe Aisha duk da iyaayensa sunaa soo q
   'Who did Ali kill Aisha even though his parents like?'

c. *Waa Aisha ta rubuuta wani littaaflii don ta burgaa q
   'Who did Aisha write a book so that she would impress?'

(184) a. Waa yaaraa suka ganii q baayan SUN ji q a reediyo
   'Who did the children see after they heard on the radio?'

b. Waa Ali ya kashe q duk da iyaayensa SUNAA soo q
   'Who did Ali kill even though his parents like?'

c. Waa Aisha ta aikaa ma q littaaflii don ta burgaa q
   'Who did Aisha send a book in order to impress?'

Notice that in these sentences human direct object gaps have been selected to abstract away from the fact that other arguments may independently be null in Hausa. I emphasize that the judgements reported here are those of speakers who reject completely human null pronoun direct objects. We thus can conclude that, at least for these speakers, there are identifiable parasitic gaps in Hausa.

The question that analyses of parasitic gap constructions have tried to answer is what is the nature of the parasitic gap, and, in particular, how is it sanctioned. Is it the result of movement of some sort or is it a base-generated empty category? Different answers to these questions have been given in the literature.
Chomsky suggests that the parasitic gap is the trace of the movement of a null operator to the local COMP of the clause containing it. The variable thus created is free since its operator is empty. It must, therefore, be interpreted by the range of the higher operator, the operator of the "real" gap. This is accomplished, it is proposed, by linking the chain composed of the parasitic gap and its operator to that of the real gap and its operator. That the two chains must be sufficiently close, and, in particular, that the parasitic gap operator must be subjacent to the real gap, is taken to explain why parasitic gaps display S-structure properties, since subjacency is taken to be an S-structure condition.

The second hypothesis—that the parasitic gap is a base-generated empty category and is not linked to a local operator at S-structure—is argued for in various forms by Kayne (1984), Cinque (1984), Haik (1985), and others. In Kayne’s analysis, for instance, there is no local operator at all. Rather, parasitic gaps are possible only if, informally speaking, the paths created by the projections of the governors of the parasitic gap and the real gap merge into a "connected" subtree with the antecedent operator. Since the Connectedness Condition is an S-structure condition, the S-structure properties of parasitic gap constructions follow if parasitic gaps are licensed by Connectedness.

Consider now relative marking in Hausa in relation to the structure of parasitic gap constructions. If, as argued all along here, relative marking is a consequence of the presence of an operator in a local specifier of CP, or its trace, then the nature of the INFL
in the parasitic gap clause provides a rather clear test for determining whether parasitic gaps are licensed by a local operator or not. The predictions go as follows: if the INFL of the parasitic gap clause must be relative, then it must be governed by an operator. If this INFL may optionally appear in the relative form, then we could conclude that there is a local SPEC which is coindexed with a higher operator—i.e. this would be a case of "generalized" relative marking. Finally, if the INFL cannot be relative, then there is no local operator at all, at least at S-structure.

The relevant judgements are very clear: only the nonrelative form is permitted in the INFL of the clause containing the parasitic gap. That is, the nonrelative forms SUN and SUNAA in (184a,b) may not be replaced with the relative forms SUKA and SUKEE. And, judgments here, I emphasize, are quite unwavering. This fact appears, then, to argue against analyses of parasitic gaps constructions which rely on the presence of an operator local to the parasitic gap, especially in light of the evidence given above that even abstract operators trigger relative marking. Indirect support is thereby given to analyses of parasitic gap constructions which maintain that parasitic gaps are base-generated empty categories. This result is particularly interesting in that evidence bearing on parasitic gaps, which are a marginal phenomenon to begin with, is notoriously hard to come by.

6.3.8 Concluding Remarks

The main thrust of our remarks on relative aspect marking has been to show that this phenomenon is basically a syntactic one insofar as the presence of relative marking is dependent on the presence of a
the governing (S-structure) operator in specifier of CP. That is, whatever the semantic or pragmatic relation this phenomenon may have with similar phenomena in other languages (this was speculated on above), at least in Hausa, it is most adequately described as a formal process resulting from a particular syntactic configuration at S-structure (though the full details of this analysis remain to be worked out). To make this point even clearer, we shall consider here this analysis in contrast with some alternative proposals of relative aspect marking in Hausa.

Bagari (1976) and Schuh (1985a,b) propose analyses of relative aspect marking which treat this phenomenon as essentially a semantic one. Bagari (1976) suggests that the narrative use of relative aspect marking and its use in wh-constructions are separate phenomena. Concentrating on the latter, he argues that the relative aspect is used in clauses which contain "old information". That is, the relative aspect marker is used to mark presupposition. Indeed, relativization, wh-interrogation, topicalization, and wh-ever constructions are all contexts in which the non-relativized (non-questioned, etc.) material is presupposed.

Schuh (1985a, b) argues that the functions of the relative aspect marker can be unified under the semantic notion of "definite/specific event". The narrative use of the relative (perfect) aspect marker, as we saw above, follows in that it is characterized by events which are "specific to a time and/or place and already instantiated". Likewise, the relative marker is used in "presupposed" contexts, the wh-construction environments, since the events in these contexts are taken
to be known to both speaker and hearer (i.e. definitive/specific).

Although both of these analyses offers various insights into the phenomenon of relative aspect marking, some of which have been incorporated into the analysis developed here, I would like to suggest that neither of them accounts for the full range of facts involved in this process. Consider a few illustrations:

Schuh's analysis of the difference between the relative and nonrelative aspects to be a difference in the meaning of these two can be given as an explanation for the appearance of the former in tun da-clauses ('from the time that') and the latter in tunda-clauses ('because')--viz. the former indicates an individual completed (= definite/specific) event, while the latter indicates relative past tense. The same facts can also be accounted for by the wh-/non-wh-structure analysis, as seen above. Schuh's proposal, however, has no obvious extension to baavan da/baavan 'after' and koo da/koo 'although' clauses, where the generalization appears to be simply that the former require relative aspect, while the latter non-relative--i.e., there is no difference in meaning. In that the operator-based alternative can offer an account for all of these structures--presence or absence of an operator in [SPEC,CP], it is to be preferred on descriptive grounds alone.

It also seems to me that use of presupposition (as the distinguishing factor, as in Bagari's analysis, or as a derivative of a definite/specific factor, as in Schuh's analysis) to characterize relative aspect marking contexts does not adequately cover the facts. There are predicates in Hausa, as in all languages, whose semantics
entails that the truth of the subordinate clause is presupposed. Utterance of a sentence such as "I’m surprised that Ali passed his exam" supposes that both the speaker and the hearer already know that Ali passed his exam. This is "old information". The "new information" is the fact that the speaker is surprised by this. Since the embedded clause is presupposed, one would expect it to be in the relative aspect if the relative aspect must be used when the information in the clause is presupposed. As (185) shows, this prediction is not borne out.

(185) a. Naa yi maamaskii wai Ali YAA / *YA saamu BEPC
   ls do surprise that A 3smCOMPL 3smREL get BEPC
   'I was surprised that Ali passed his BEPC'

b. Naa yi maamaskii wai Ali YANAA / *YAKEE son Aisha
   ls do surprise that A 3smCONT 3smRELCONT like A
   'I was surprised that Ali like Aisha'

c. Naa yi baRin cikii wai Maryama TANAA / *TAKEE rashin
   ls do black stomach that M 3sfCONT 3sfREL lack-of
   laafiya
   health
   'I’m sorry that Maryama is sick'

The operator-based analysis, however, correctly predicts the embedded clauses of the sentences in (185) not to allow relative aspect since the specifier of that clause contains no operator.

It is also unclear how to derive the correct aspect on embedded INFLs in wh-constructions on the presupposition analysis. First of all, in a wh-construction in which the wh-phrase originated in the matrix clause, why isn’t the embedded INFL in the relative aspect since the embedded clause is "old information", too?
(186) Waaq ti yakee tsaa-samaani wai yaaraa SUN / *SUKA tafi daaji

who 3em think that children 3p 3p go bush

COMPL REL COMPL

‘Who thinks that the children went to the bush?’

And, in a *wh*-construction in which the *wh*-phrase originated in an
eMBEDDED clause, why is it that the embedded INFL only optionally
(/marginally) requires relative aspect marking? Once again, this
clause contains “old information”:

(187) Meeq suke yee tsaa-samaani wai yaaraa SUN / SUKA yi ti

what 3p think that children 3pCOMPL 3pREL do

‘What do they think that the children did?’

The operator-based analysis of relative aspect marking, which entails
that aspect marking is dependent on government by a specifier
containing an operator (optionally generalized to include traces of
operators), correctly accounts for the rather complex array of facts
concerning embedded INFLs in *wh*-constructions, as was shown above in
section 6.3.5. Given the obvious syntactic nature of these facts, made
particularly clear by the generalization of relative aspect marking to
coincide with successive cyclic movement, it is doubtful that any
purely semantic account of relative aspect marking is possible.

7. The ECP

7.1 The Canonical Facts

Bounding Theory, we have seen, imposes a locality condition on
empty categories whereby the distance traversed by the element
originating in the position of the empty category may not include more
than one bounding node. The subjacency condition ensures then that the
distance between a trace and its antecedent will be sufficiently

145
"close". Further study of the properties of structures containing empty categories has led to the suggestion that the presence of a trace must be sanctioned in other ways as well. Specifically, it seems that the existence of a trace must be somehow indicated by an overt element in the construction. The Empty Category Principle (ECP), which is intended to sanction the occurrence of traces in this way, can thus be viewed as a formalization of a condition on recoverability of empty elements. As formulated in Chomsky (1981), it requires that empty categories be governed by a lexical head or a coindexed antecedent. This condition is referred to as "proper government".

(188) ECP: \[ \alpha \ v_e \] must be properly governed.

(189) Proper Government: \[ \alpha \ properly \ governs \ \beta \] iff \[ \alpha \ governs \ \beta, \] where \[ \alpha \ v_e \] or \[ \alpha \ ] is coindexed with \[ \beta. \]

(190) (= (9)) Government: \[ \alpha \ governs \ \beta \] iff \[ \alpha = X^0, \alpha \ c\-commands \ \beta, \] and \[ \beta \] is not "protected" by a maximal projection.

This condition accounts for the following observations about traces: (1) they may occur in the position of the object of a verb, (2) they may occur in subject position if the adjacent COMP contains no other overt element, and (3) they may not occur as objects of nouns or prepositions. This entails subject-object asymmetries like that in (191), referred to as "\textit{that}-trace effects":

(191) a. *Who did you say [s [COMP t\_i that] [s t\_i saw John]]

b. Who did you say [s [COMP t\_i that] [s Mary saw t\_i]]

and the fact that preposition stranding is excluded in most languages (cf. van Riemsdijk (1973)), and that in languages where it occurs, it
is restricted to contexts of verb-preposition reanalysis (cf. Hornstein and Weinberg (1981)). The typical exclusion of preposition stranding cross-linguistically is illustrated here by French and its restriction to VP-internal prepositions in languages allowing preposition stranding by English.

(192) a. *Qui as-tu parlé [pp & t1]
  who 2s  speak  to
  'Who did you speak to?'

b. Who did you speak with/to about the leak in the kitchen?

c. *Which day did John leave for Europe from La Guardia on?

Hornstein and Weinberg (op. cit.) suggest that constructions like that in (192b) are allowed because the application of a rule of verb-preposition reanalysis results in the object of the preposition becoming the object of the complex verb (formed by the verb plus the preposition). This analysis, recast in terms of the ECP, entails that prepositions may be stranded just in case reanalysis has applied, since the result of reanalysis is a verb and verbs are proper governors. In the absence of reanalysis, the extraction of the object of a preposition, as in (192a,c), is excluded by the ECP since prepositions are not proper governors. (191a) is also excluded by the ECP, because the subject trace has no lexical governor and neither of its coindexed categories (the trace in COMP and its antecedent who) governs it. The object trace in (191b), on the other hand, is properly governed since it is governed by V, a [V] lexical category.

Subject extraction is possible when the subject is moved to an adjacent COMP not containing any other constituent and thus allowing
government of the trace by its antecedent in COMP:

(193) a. [COMP who₁] [t₁ saw John]
    b. Who₁ did you say [S' [COMP t₁] [t₁ saw John]]

Kayne (1984:Ch.2) provides evidence that the that-trace effect also holds of LF traces. Certain dialects of French allow the negative particle ne, which indicates the scope of personne (= "no...one"), to occur in a higher clause than the one containing personne. Assuming that personne, as a quantifier, undergoes quantifier raising (QR--cf. May (1977)) at LF so that scope is marked by structural c-command, an explanation of the data in (194) can be found in the ECP.

(194) a. Je n'ai exigé qu'ils arrêtent personne
          (LF: [for no x] I demanded that they arrest x)
    b. *Je n'ai exigé que personne soit arrêté
          (LF: [for no x] I demanded that x be arrested)
    c. J'ai exigé que personne ne soit arrêté
          (LF: I demanded that, [for no x], x be arrested)

The trace of QR is properly governed in (194a,c)--by the verb and by a coindexed antecedent, respectively. In (194b), the subject trace has no proper governor because its only antecedent (since adjunction is not successive cyclic) has been adjoined to the matrix S, a position from which it does not govern its trace. It is therefore excluded by the ECP.

The Superiority condition effects found in multiple interrogation structures also display the subject-object asymmetries typical of ECP effects, providing further evidence that the ECP, which can subsume
these effects, holds of LF traces (cf. Jaeggli (1982) and Kayne (1984:Ch.3)).

(195) a. Who\(_i\) t\(_i\) bought what  
(LF: [COMP\(_i\) what\(_i\)] [COMP\(_i\) who\(_i\)] [ t\(_i\) bought t\(_i\)])
  b. "What\(_i\) did who buy t\(_i\)  
(LF: [COMP\(_i\) who\(_i\)] [COMP\(_i\) what\(_i\)] [did t\(_i\) buy t\(_i\)]

Assuming that multiple interrogation involves adjunction of the wh-insitu to COMP at LF, and that the COMP node carries the index of the element it contains, then the subject trace in (195a) is properly governed through coindexation with COMP, while that in (195b) is not since it is not coindexed with COMP. (Cf. Aoun, Hornstein and Sportiche (1982) and Lasnik and Saito (1984) for detailed development of this analysis.)

7.2 That-trace "Violations" in Null Subject Languages

It has long been noted that languages which allow missing subjects (so-called "null subject" or "Pro-drop" languages) also allow apparent violations of the prohibition of that-trace sequences like that in (191a) above. Spanish is one such language, as (196) illustrates.

(196) a. a tengo hambre  
    have 1s hunger  
    'I'm hungry'
   b. Quién dijiste que t\(_i\) vió a Juan?  
   'Who did you say that saw John?'

In that languages which allow null subjects apparently do so because most of the person, number, and gender features of the missing subject can be found in the morphological agreement marking of the
verb, it would seem natural to assume that subject traces are permitted next to overt COMPs for the very same reason. That is, AGR would seem to be lexical in these languages and thereby be able to properly govern the subject position, eliminating the necessity of a c-commanding coindexed element in COMP.

However, this solution cannot be retained, as Rizzi (1982:Ch.4) shows, because the ne...personne facts found in certain French dialects are mirrored by the facts of non...nessuno in Italian and no...nadie in Spanish, both null subject languages. That is, there is evidence that even in null subject languages, INFL (AGR) may not serve as a proper governor. If this is so, then how can the existence of that-trace violations in these languages be accounted for? Rizzi (op. cit.) suggests that this is due to a third property of null subject languages: the possibility of free subject inversion, illustrated in (197) for Italian.

(197) ha mangiato Giovanni
    has eaten    G
    'John ate'

If subjects may occur postverbally, then presumably they may also be extracted from this position. Now, if the subject trace is in postverbal position, it is properly governed by the verb, as an object is, circumventing the prohibition of that-trace structures.

It is assumed that the possibility of postverbal subjects is a result of application of the rule of "Affix movement" ("Rule R"/ "Affix-hopping"), a local rule (in the sense of Emonds (1976)), which attaches INFL to the verb, in the syntax, thereby allowing for
nominative Case to be assigned to a postverbal subject. In languages like English and French, on the other hand, INFL is moved to the verb only in PF (the phonological component), disallowing postverbal subjects since AGR, which assigns nominative Case to the NP it governs, governs only the preverbal subject position at S-structure (i.e., prior to PF and the application of Affix-hopping), the level at which nominative Case is assigned.

The correctness of this view of null subject languages is indicated by the fact that although the Italian equivalent of (160b) is ungrammatical, as already mentioned, its meaning may be conveyed by an identical (grammatical) sentence with the subject nessuno 'one' in postverbal position. French, which is not a pro-drop language and which does not allow R to apply in the syntax, does not have this possibility. Compare Italian (198a) with French (198b).

(198) a. Non voglio che venga nessuno  
(LF: [for no x] I want that come x)

b. *Je ne veux que vienne personne

Rizzi argues that these facts show that subject extraction is in general excluded in languages like Italian and Spanish. Direct support for this hypothesis is found in the Trentino dialect of Italian in which preverbal versus postverbal subject position is morphologically marked (cf. Brandi and Cordin 1983). This morphological marking allows it to be affirmed that extraction of the subject is possible only from the postverbal position. It is concluded therefore that the ECP is in fact respected in these languages and that it is only because subject extraction is from postverbal position, that surface violations
of it are found.

7.3 ECP Effects in Hausa

As expected given the ECP and absence of general verb-preposition reanalysis, the objects of prepositions may not normally be extracted in Hausa. The same is true of objects of nouns, while objects of verbs may undergo movement—again, as expected given the ECP:

(199) a. *Waa j ka yi maganas (pp da tį)
    who 2sm do speech  with
    'Who did you talk with?'

b. *Waa j ka karanta (np littaafii tį)
    who 2sm read       book
    'Whose book did you read?'

c. Waa j ka gannii tį a kaasuwa
    who 2sm see        at market
    'Who did you see at the market?'

However, Hausa freely allows extraction of a subject out of a clause headed by an overt complementizer, in apparent violation of the that-trace effect. This is possible for both [−wh] and [−wh] complementizers: waj ‘that’, which generally expresses noncommitment of the speaker to the content of the following S; ceewaa, the verbal noun of ‘say’ (a recurrent complementizer in West African languages), and koo ‘whether/if’. These are illustrated in (200a,b,c), respectively.

(200) a. Waa j kikee tsammaanii (waj) tį yaa tafi Kanoo?
    who 2sf think      that 3sm go K
    'Who do you think that went to Kano?'

152
b. Waaj kikee tsamaanii (ceewaa) tį yaa tafi Kanoo?
   who 2sf think that 3sm go K
   'Who do you think that went to Kano?'

c. Waaj Aabu ta tambayaa koo tį yaa tafi Kanoo?
   who A 3sf ask whether 3sm go K
   'Who did Abu ask whether went to Kano?'

Hausa also freely allows null subjects. And, as is typical, it is
the overt morphological agreement features of INFL which identifies the
empty subject as a definite pronominal. An interesting difference
between Hausa and other pro-drop (and non-pro-drop) languages though,
is that INFL is a separate word from the verb even at the level of PF.
The form of the verb is unchanged for different tenses, aspects, and
persons, these features all being marked on INFL.\textsuperscript{25}

(201) a. e yaa / sun tafi Kanoo
       3smPERF 3pPERF go K
       '(he / they) went to Kano'

b. e zai / zaas su tafi Kanoo
       3smFUT 3pFUT go K
       '(he / they) will go to Kano'

c. wai e yaa / suu tafi Kanoo
   that 3smSUB 3pSUB go K
   'that (he / they) go to Kano'

That INFL is independent from the verb, rather than attached in
some way to the front of the verb, can be clearly seen by examining the
distribution of adverbial particles. These particles may appear most
anywhere in a Hausa sentence, except between clitics and their hosts:

(202) a. Ali yaa san dai/fa Muusa
       A 3sm know PRT PRT M
       'Ali knows Musa'
b. *Ali yaa san dai/sa shi /shi
   A 3sm know PRT PRT him(Cl)/him(indep.)
   'Ali knows him'

That these particles can intervene between INFL and V, as is illustrated in (168), argues that INFL is not attached to V.26

(203) Ali yaa dai san shi
   A 3sm PRT know him
   'Ali knows him'

Presumably a correlate of the lack of R in Hausa is the fact that Hausa does not allow free inversion of the subject. Although Hausa does allow rightward movement of the subject, this construction is acceptable only when there is a pause between the rightward-moved subject and when the moved element satisfies certain discourse conditions (it is known, definite, etc...), indicating that it is a dislocation structure rather than free subject inversion. Furthermore, these constructions are not acceptable to speakers of all dialects.27

(204) a. Taa tafi Kanoo, Aabu
   3sf go K A
   '(she) went to Kano, Abu' (Answer to 'Where's Abu?')

b. *Taa tafi Kanoo, wata yaarinyaa
   3sf go K a girl
   '(she) went to Kano, a girl'

Summarizing, we have shown that Hausa has null subjects, apparent that-trace violations, and no rule R and (thus) no free subject inversion. Hausa thus provides further evidence for the independence of the possibility of null subjects from that of postverbal subjects (---cf. also Safir (1982)). The problem this poses for the matter at hand is that despite the absence of a postverbal extraction site for
the subject, Hausa displays that-trace violations.28

These facts seem to suggest that INFL in at least some languages may be a proper governor. This is precisely what Huang (1982:482) suggests for Chinese. He argues that the fact that Chinese displays no that-trace, ne...personne, or superiority condition effects, although it does display other ECP effects, is a result of the fact that the INFL in Chinese is a proper governor. This view is supported by the fact that INFL in Chinese “has more lexical content to it than the INFL in English”; for example, aspect markers are derived from lexical categories in Chinese and may appear as independent words.

Hausa does not fit into this account, however, since, unlike Chinese, it displays LF subject/object asymmetries. That Chinese (which, recall, has no syntactic wh-movement) does not display LF subject/object asymmetries can be seen, for example, by the fact that the sentence in (205) (from Huang (op. cit.)) may have both of the readings in (206)—and, in particular, the reading in (206a), whose LF representation contains a subject trace next to an overt complementizer.

(205) ni xiang-zhidao [g' [g shei mai-le sheme]]
you wonder who buy-ASP what

(206) a. ‘Who is the person x such that you wonder what x bought?’
(LF: [g' who [g you wonder [g what [g t i bought t j]]]])

b. ‘What is the thing x such that you wonder who bought x?’
(LF: [g what [g you wonder [g who [g t i bought t j]]]])

(206a) is allowed, argues Huang, because the subject trace is properly governed by INFL. That INFL cannot have this property in Hausa is
shown by the sentences in (207) which illustrate that Hausa does display superiority effects:

(207) a. Waa j tī ya sayi me
     who 3sm buy what
     'Who bought what?'

     LF: [mee] waa j tī ya sayi t]

b. *Mee j waa ya sayaa tī
     what who 3sm buy
     'What did who buy?'

     LF: [waaw mee j] tī ya sayaa t]

The facts in (172) are particularly pertinent because they also underline the distinction between Hausa and languages allowing postverbal subjects. Since extraction may take place from the postverbal position in the latter, superiority effects are neutralized just as that-trace effects are. Jaeggli (1982) gives the Spanish sentences in (208), which are the equivalents of the Hausa examples in (207).

(208) a. Quién compró qué
     'Who bought what?'

b. Qué compró quién
     'What did who buy?'

Hausa, then, though it does exhibit S-structure that-trace violations, shows the typical LF ECP effects.29

   It might be suggested that the Hausa facts could be accounted for by parametrizing the ECP as presented in Lasnik & Saito (1984) so that in Hausa arguments as well as adjuncts can wait until LF to be sanctioned by the ECP. Then, assuming LF deletion of semantically
empty elements such as 'that' in English, surface 'that-t' violations are allowed. The problem with this is that the relevant complementizers in Hausa are not without semantic content (cf. discussion of (165) above) and thus should not be able to freely delete or insert. It is also not clear how such a parameter could be learned: it is generally assumed that the LF component, since it has no surface output, is not subject to variation.

I would like to suggest that there is evidence in Hausa for independent sanctioning of surface S-structure that-trace violations which is not incompatible with the postverbal subject extraction analysis offered by Rizzi (op. cit.) and Jaeggli (op. cit.) for "R-type" pro-drop language that-trace violations, and which does not pose learnability problems. I will argue that Hausa mimics the facts found in "R-type" pro-drop languages, even though it has no R, because of an S-structure resumptive pronoun strategy (cf. Koopman 1982 for a similar proposal for Vata).

7.4 S-structure Resumptive Pronouns

Hausa, like many languages (e.g. Italian, Hebrew, English), has a resumptive pronoun version of relativization which "rescues" sub\-adjacency violations, as was seen in section 6.2.2 above. It is argued that such structures are generated at S-structure with a wh-element in COMP and a pronoun in the argument position. These two are coindexed by an LF rule, thereby escaping the effects of subadjacency, an S-structure condition. An interesting fact about the resumptive relativization strategy in Hausa is that gaps may appear in place of a lexical subject resumptive pronoun and a lexical [-human] direct object resumptive
pronoun. This is quite natural, it was argued, given that these elements may independently be null in Hausa.

What I would like to suggest now is that Hausa in fact has two resumptive strategies—one for escaping subadjacency (restricted to relativization constructions) and one for escaping the ECP (unrestricted). Consideration of other ECP facts in Hausa makes this idea seem quite plausible. Prepositions in Hausa are not proper governors. Two ways of questioning the object of a preposition are permitted. Either the preposition is "pied-piped" with its interrogative NP complement or, more relevant to our concerns here, a resumptive (independent) pronoun appears in the "extraction site" of a moved object of a preposition. A resumptive pronoun, clitic this time, is also required for objects of nouns, which are preceded by the "dummy" Case-marker na.30

(209) a. Waa ka yi maganaa da *(shii)
   who 2sm do talk with him
   "Who did you talk with?"

   b. Waa ka karanta littaafi*(nsa)
   who 2sm read book-of-his
   "Whose book did you read?"

As is the case with the subadjacency resumptive pronoun strategy, the reason the subject ECP "violations" have gaps is only because Hausa independently allows null subject pronouns. ECP violations are avoided, then, by utilization of a resumptive strategy which applies at S-structure, either coindexing NPs in A'-positions with pronouns in argument positions or "spelling out" traces as pronouns.31 The ECP does not apply to the "movement sites" since they are pronouns and not
traces. This resumptive strategy differs from the relativization strategy outlined above in that since it applies at S-structure, it does not escape subjacency, assuming that subjacency is a condition on S-structure rules. In other words, S-structure resumptive pronouns obey subjacency:

(210) a. *Waa ka san maatar da ta yi maganar da shii
    who 2sm know woman REL 2sf do speech with him
    'Who do you know the woman that talked to him?'

b. *Waa ka ga yaaran da suka Roone littaafinsi
    who 2sm see children REL 3p burn book-of-his
    'Who did you see the children that burnt his book?'

c. *Wane mutum ka baa ni littafin da pro ya rubuuta
    which man 2sm give me book REL 3sm write
    'Which man did you give me the book that (he) wrote?'

Summarizing, it has been argued that surface ECP violations in Hausa are the result of a general S-structure resumptive pronoun strategy which entails that the gap of 'that'-t- "violations" is a (null) pronoun rather than a trace and thus is not subject to the ECP, though, since this resumptive strategy takes place at S-structure, it is subject to subjacency (contrary to LF resumptive pronouns). This result is not surprising given that we independently know that null pronouns may be used as resumptive pronouns in Hausa and other languages which allow null pronouns. Our analysis, if correct, also leads to the conclusion that subjacency and the ECP are separate conditions, or at least the S-structure and LF sanctioning of empty categories are not identical.

We have proposed, then, two "types" of resumptive pronouns for Hausa. It is appropriate to now ask how it is that the child learning
Hausa manages to sort out the differences between them. And, in particular, why doesn’t the child “simply” conclude that a resumptive pronoun entails nonconformity to subadjacency?

Consider first how a child learning Italian figures out that long extraction out of a wh-island with a null or overt resumptive pronoun is permitted in relativization, but not elsewhere. The simplest assumption consistent with the data would seem to be that subadjacency is in its strictest form in the "initial state" of the acquisition process—that is, subadjacency is obeyed everywhere. And, it is only through exposure to subadjacency "violations" that the child deduces that in certain circumstances, an alternative to ‘Move-α’ is available. What is crucial to note here is that this information must be learned structure by structure; otherwise, we would expect to find generalized resumptive pronouns in all types of constructions. The marginal status of the resumptive strategy in Italian can be attributed to the fairly exotic data (long extraction out of wh-islands) necessary to establish the existence of a resumptive strategy.

Returning now to the Hausa facts, which are slightly more complicated because of the existence of two types of resumptive strategies, we again assume that in the initial state, general principles of UG, such as subadjacency and the ECP, are obeyed everywhere. The child then deduces, after reception of the relevant data, that if a resumptive pronoun is used, the ECP may be circumvented (i.e., that there is an S-structure alternative to ‘Move-α’). Attendance to simple ("short") extraction structures of the various types (wh-interrogation, topicalization, relativization) are sufficient
for the child to arrive at this conclusion, and there is no reason for him to assume that this strategy allows for circumvention of sub\text{\textperiodcentered}acency. "Violations" of the latter are learned, as in Italian, as the child attends to structures involving relativization out of wh-islands. Again, there is no evidence available to the child which suggests that the LF resumptive strategy should be extended beyond relativization constructions.

The learnability of the two resumptive pronoun strategies of Hausa, then, follows straightforwardly from a rather plausible view of acquisition which appears to be independently required: the language learner comes equipped with UG, which includes various features which are adopted by the learner only on the basis of overt evidence encountered in the surrounding linguistic data. All structures are assumed to conform to the ECP and to sub\text{\textperiodcentered}acency until contrary evidence can be found. A resumptive strategy is one of the features which may be selected by the learner, if and only if this move can be justified by relevant available data. This same view is put forward by Rizzi (1986:35), who argues that a given category may be taken to have the option of licensing a null pronoun only if primary data justify this conclusion, otherwise the option is assumed to be impossible—and this, for each type of category.

7.5 Extraction of Adjuncts and Extraction out of Non-bridge Verb Complements

Widening our discussion of the extraction facts of Hausa leads us to consider alternative views of the ECP, and, in particular, that
developed in the various articles comprising Kayne (1984) and related work such as Jaaeågli (1982), and Stowell (1981, 1985). Various conclusions of these authors will be rapidly reviewed in section 7.5.1. In 7.5.2, related data from Hausa will be argued to provide additional evidence for our conclusion above that Hausa contains an S-structure resumptive pronoun strategy which allows for circumvention of the ECP, but not subadjacency.

7.5.1 Proper Government of Empty COMP

Kayne (1984: Ch.3) points out that the possibility of a null COMP due to deletion of a wh-phrase (as in restrictive relative clauses) or because it contains an intermediate trace follows from the ECP. That is, in contexts where COMP is properly governed, it may be empty. Kayne gives the examples in (211).

(211) a. I wonder *(what) Mary put on the table
    b. John ate *(what) Mary put on the table
    c. The man *(who) you saw
    d. The man with *(whom) you're sure to have a good time

The ungrammaticality of the unacceptable version of (211a,b) can be attributed to the ECP by assuming that proper government requires an empty category to have an antecedent. An empty category in COMP in these sentences has no antecedent and thus the structures are excluded. (211c) is allowed without the wh-phrase in COMP since the empty category has the head of the relative clause as an antecedent. Deletion of the wh-phrase in (211d) results in ungrammaticality because prepositions are not appropriate governors for the ECP. If this view

162
of (211a-d) is correct, then the ECP must require a trace to have both an antecedent and an appropriate governor. Kayne (1984: Ch.7) proposes that the latter is part of the determination of a proper antecedent and that the ECP can be restated as a condition on the connection between an empty category and its antecedent (and can be made to encompass subjacency).

Stowell extends this account of the distribution of null COMPs to include cases of a COMP which simply has no overt complementizer. The fact that complementizers may not be omitted in sentential subjects follows from the ECP since the S′ subject (and its head, COMP) is governed only by INFL, which is not a lexical category and hence not a proper governor. This is illustrated by the Hausa examples in (212) and their English translations. In (212a), an empty COMP is properly governed by the matrix verb, a proper governor, whereas in (212b), there is no proper governor for the reason just given.

(212) a. Ali yana gayaa mini wai/ceewaa/∅ sunaa soo su kashee mu ‘Ali was telling me that/∅ they want to kill us’

b. Wai/ceewaa/∅ sunaa soo su kashee mu yaa baun tsooroo ‘That/∅ they wanted to kill us scared us’

Stowell further suggests that the obligatory complementizer in N-complement CNPs and non-bridge verb complements is also due to the ECP, under the assumption (of Kayne (1984)) that in order for a category Y to govern across a maximal projection XP, Y must θ-mark XP. Non-bridge verbs and nouns of N-complement CNPs, Stowell argues, do not θ-mark their complements, and thus cannot govern into the head position of same. The examples in (213) are given.
(213)  a. John whispered to himself [σ' *(that) [he was bored]]

        b. Scott's claim [σ' *(that) [he was a capitalist]] surprised me

Traces in COMP likewise must be lexically governed:

(214)  a. *How did John whisper [τ (that) [he learned the combination τ]]

        b. *Where did you hear the news [τ (that) [John went τ]]

(215)  a. *Who did John whisper that Mary loves τ

        b. *Who did you hear the news that John loves τ

While the sentences in (215) have the status of subjacency violations—generally weaker unacceptability, those in (214) are much worse, resembling the degree of unacceptability found with ECP violations. The traces of the adjuncts are properly governed through coindexation with their antecedent in the intermediate COMP. This latter, however, is not properly governed since non-bridge verbs and nouns may not govern across 5', as above. Thus, substitution of say, a bridge verb, for whisper in (214a) yields a perfectly acceptable sentence.

Lasnik and Saito (1984) point out that head government of a trace in COMP is not sufficient for proper government; there is evidence that such traces must be antecedent governed.

(216)  a. *[Hanako-ga [Taroo-ga naze sore-o te-ni ireta tte
                                            H-NOM    T-NOM     why it-ACC obtained COMP

                      itta] koto]-o sonnani okotteru no
                      said fact-ACC so much be angry Q
                      Lit.: 'Why are you so angry about the fact that Hanako said that Taro obtained it?'

        184

koto-o sonnani okotteru no
fact-ACC so much be angry @
Lit.: 'What are you so angry about the fact that Hanako said
that Taro obtained ？’

In (216b) LF wh-movement may move what directly to the matrix COMP, its
trace being properly governed by the verb obtain. Why, in (216a), may
not move directly because its trace requires an intermediate trace in
COMP in order to be properly governed. Although this intermediate trace
is head governed by the matrix verb, the sentence is still
unacceptable. Lasnik and Saito (op. cit.) conclude that intermediate
traces can never be head governed, requiring instead antecedent
government (which is not possible here because of the distance between
the antecedent and the trace).

In light of the facts of (216), Stowell suggests that both
antecedent government and head government be required of all empty
categories by the ECP, an idea which he notes was at the core of the
ECP proposed in Jaeggli (1982). Stowell (1985) formulates his "split
ECP" as follows, where identification can be through coindexation with
an antecedent or with the θ-grid of a verb, as a result of θ-role
assignment.

(217) Stowell (1985) ECP:

a. The Head Government Requirement: [e] must be governed (by
a lexical head).

b. The Identification Condition: [e] must be identified by a
coindexed category XP, where no more than one 5-boundary
may separate [e] from XP.
These views of the ECP, though different in many respects glossed over here, have in common the idea that (non-pronominal) empty categories must have a sufficiently local coindexed identifier (or antecedent) and must occur in structural positions such that they are governed by a lexical head.

7.5.2 Further Support for the S-Structure Resumptive Pronoun Analysis

Examination of the extraction facts regarding *rad‘a* ‘whisper’ and *baa maamaakii* ‘surprise’ reveals that Hausa behaves as expected with respect to the ECP, given our analysis thus far. In particular, certain differences between English and Hausa can be derived from the presence of an S-structure resumptive pronoun strategy in the latter only, as proposed earlier. Although this discussion is based on the behavior of just these two predicates (‘shout’, etc... in Hausa may not take S’ complements), and thus must be taken with a certain amount of caution, the systematicity of the results tends to indicate that there is support for the view of the ECP examined in the preceding subsection and additional evidence for the S-structure resumptive pronoun hypothesis developed above.

Complementizers must be present in the complement of *rad‘a* ‘whisper’ and *baa maamaakii* ‘surprise’. (Lack of a complementizer forces a reading where the complement of *rad‘a* is a direct quote.)

(218) a. Ali yaa *rad‘a* mini wai/ceewaa/*z* zaa a kaamaa Muusa A 3sm whisper to-me that indef catch M ‘Ali whispered to me that they’re going to catch Musa’

b. Yaa *baa* ni maamaakii wai/ceewaa/*z* Ali yaa ga sarkii 3sm give me surprise that A 3sm see emir ‘It surprised me that Ali saw the emir’

156
And, while extraction of an object invokes the variable acceptability typical of subjacency violations, extraction of an adjunct is entirely out:

(219) a. Waa aka radaa maka wai zaa a kaamaa t
    who indef whisper to-you that indef catch
    'Who did they whisper to you that they’re going to catch?’

   b. Waa ya baa ka maamaskii ceewaa Aisha ta ganii
      who 3sm give you surprise that A 3sm see
      'Who did it surprise you that Aisha saw?’

   c. Yaayaa/yaushee Ali ya radaa maka (t wai) zaa a buuddee
      how when A 3sm whisper to-you that 3sm open
      Roofar bankii t
      door-of bank
      'How/when did Ali whisper to you that they’re going to open
      the door of the bank?’

The facts of (218-2) mirror exactly the English facts discussed above and thus an identical explanation can be offered. An empty COMP in (218) leads to ungrammaticality because it cannot be properly governed because the matrix verb may not govern it across the S’ since, as a non-bridge verb, it does not θ-mark this S’. Likewise, the intermediate trace necessary in (219c) in order for the adjunct trace to be properly governed, is not head governed by the matrix verb and hence an ECP violation results. (219a,b) are mere subjacency violations, since the object trace is both head governed and identified by its θ-governing verb.

Consider now the case of subject extraction out of these complements. The complement/non-complement asymmetry found in English, etc., is not replicated in Hausa where subject extraction has the same status as object extraction—i.e. the variable acceptability normally
found with subjacency violations. Thus, (220) is considerably better than (219c), as are (219a,b).

(220) a. Waa aka radaa maka wai ti zai kamaa Ali
    who indef whisper to-you that 3sm catch A
    'Who did they whisper to you that is going to catch Ali?'

b. Su waa yaa baa ka maamaakii wai ti sun qa sarkii
    who-p 3sm give you surprise that 3p see emir
    'Who all did it surprise you that saw the emir?'

This difference with English is to be expected, given that Hausa has a means of avoiding ECP violations by utilizing an S-structure resumptive pronoun strategy. This strategy may not "save" adjunct extraction ECP violations since these categories have no corresponding pronouns. And, furthermore, this strategy does not allow for escape of the subjacency violation since it is an S-structure phenomenon and thus subject to subjacency, an S-structure condition.

The prediction is made here, then, that (non-adjunct) relativization out of these complements should be perfectly acceptable in that it may use an LF resumptive pronoun strategy, which, since it applies at LF, circumvents subjacency (assuming the latter applies at S-structure). The correctness of this prediction can be seen in the Hausa examples in (221), and, I believe, in English, which also has a marginal LF resumptive strategy. As always in Hausa, subject and non-human pronouns may be phonologically null.
(221) a. Gaa kaeyan da aka ra'daa mini wai Ali yaa saataa  
here's things REL indef whisper to-me that A 3sm steal  
pro a makarantaa  
at school  
'Here's the things that they whispered to me that Ali stole  
(them) at school'  

b. Gaa itaacen da Aisha ta ra'daa mini wai pro ya  
here's wood REL A 3sf whisper to-me that 3sm  
yaaqaa riiger Ali  
tear gown-of A  
'Here's the wood that Aisha whispered to me that (it) tore  
Ali's gown'  

c. Gaa yaaran da Ali ya ra'daa mini wai ya gan su  
here's children REL A 3sm whisper to-me that 3sm see them  
'/ganii gidan giyaa  
see house-of alcohol  
'Here are the children that Ali whispered to me that he saw  
them in a bar'  

(222) a. That's the man that Mary thinks that John whispered to Bill  
that Alice loves *(him)  

b. Those are the men that Mary thinks that John whispered that  
*(they) love Alice  

These facts provide, then, further support for the possibility of  
distinct types of resumptive pronoun strategies and the conclusion that  
subjacency is a separate condition from the ECP.  

It might be asked at this point why empty pronominals (pro) are  
not subject to the ECP. I would ultimately like to argue that in fact  
they are and that they satisfy it. The idea is roughly as follows.  
Let us take head government to mean that an empty category must have a  
referential index and identification to mean that an empty category  
must have phi-features (cf. Bouchard (1984)). Assuming that NPs have a  
referential index by virtue of appearing in an argument (or a modifier)  
position and that movement involves displacement of the entire bundle
of features (phonological, phi-, and referential, etc.) that make up a category, then, whereas base-generated empty categories have a referential index, traces do not. Neither has phi-features. Traces, then, must find both a referential index and phi-features. Pro, on the other hand, need only find phi-features and thus does not need to have a direct θ-governor (head governor) and hence can appear in subject position, for example. We will return to the sanctioning of empty categories in later chapters, and in particular, to the identification of pro, in chapter 3.

8. Control Theory

8.1 Introduction

As previously noted, the presence of empty categories in the GB framework is the result of the fact that lexical insertion is optional (this being the assumption for all rules for reasons of simplicity) and the (Extended) Projection Principle which requires lexical properties to hold at all syntactic levels and predicates to be predicated of something. Among the different “types” of empty categories proposed is an empty NP, symbolized as PRO, which has properties of both pronominals and anaphors. The proximate and obviative uses of PRO are illustrated in (223a) and (b), respectively.

(223)  a. John promised [ PRO to read the Koran ]  (proximate)

   b. It’s unclear [ what PRO to do ]  (obviative)

PRO is pronoun-like in that it has an independent θ-role (as does its antecedent, if it has one), and it may have an independent reference.
as in (223b). The fact that when obviative its phi-features may vary from language to language—plural in Italian, for example, as evidenced by verb and other sorts of agreement, is also reminiscent of pronouns. On the other hand, the fact that it may also lack an independent referent, as in (223a), and that therefore its reference may be determined by an antecedent, indicates that it is anaphoric.

The distribution of PRO is derived from the fact that it is both pronominal and anaphoric, by the Binding Theory. The Binding Theory, to be discussed in more detail in the following section, requires roughly that anaphors be bound (= coindexed with a c-commanding antecedent) in their governing category and that pronominals be free (= not bound) within this same domain. Since PRO is both [+ pronominal] and [+ anaphoric], it should be both bound and free in its governing category, which is impossible. In order to avoid this contradiction, PRO can only occur where it has no governing category and thus where it is ungoverned. This deduction is referred to as the PRO theorem:

(224) The PRO Theorem: PRO must not be governed

(223a,b) are consistent with (224) since PRO is the subject of an infinitival clause, a position in which it is not governed, since INFL of a non-finite clause in English has no tense or agreement. (225a,b) are unacceptable with PRO, since PRO is governed, in violation of (224), a derivative of the Binding Theory.

(225) a. *John promised [ PRO reads the Koran]
   b. *John hit PRO

171
The theory of control, then, is the subtheory which determines the distribution and reference of PRO. Various versions of this theory are developed in the literature: to name just a few, Chomsky (1981) outlines a theory based on (224), Manzini (1983a), who argues that PRO is a pure anaphor, and Bouchard (1984), who argues that it is either a pronoun or an anaphor depending on the context, suggest deriving control theory entirely from the binding theory, and Sportiche (1983) proposes that PRO is a variable bound by an empty operator and that therefore control theory is subsumed by the theory of the range of non-overt operators. We have very little to say about the proper analysis of control theory at this point (cf. discussion of Borer's (1985) analysis of control in chapter 3) and will limit ourselves simply to illustration of the kind of control phenomenon found in Hausa.

8.2 Control in Verbal Noun Clauses

One structure in which there is an unguoverned NP in Hausa is a gerund clause. Recall from our discussion of genitive Case in 5.2.2 that Hausa has two types of verbal nouns, one which is arguably a verb ("primary verbal nouns") and another which is clearly a noun ("secondary verbal nouns"). Primary verbal nouns, besides being the form of the verb in continuous tensed clauses, may occur as subjects, objects and as purposive clauses. It was demonstrated that the structure of these elements is clausal and suggested that primary verbal noun clauses are I" categories which have an empty I. An overt post-I' subject may appear in such clauses if the dummy Case-marker na is inserted so that it receives Case, as in (226a).
(226) a. I″
   / \  
  I′   NP
   /\   na-N
  0   VP
        

b. I″
   / \  
  NP   I′
   /\   VP
  PRO  0

There may never be an overt NP in the pre-I′ specifier position of primary verbal noun clauses, however, because it could not receive Case in this position since I is empty. Now, if, in a verbal noun clause, there is no na-insertion, and therefore no lexical subject, what structure results? Because of the requirement (perhaps part of the projection principle) that all predicates must be an expression about something, the structural subject position is obligatory wherever there is a predicate (= [X′, I″]). Since this position is ungoverned in verbal noun clauses, the empty category is PRO, as in (226b). We therefore expect to find control-type structures with verbal noun clauses. Likewise, since secondary verbal nouns are NPs, and not I″s, and therefore do not contain a predicate, the specifier position is not obligatory and thus we expect them to contrast minimally with primary verbal noun clauses by not exhibiting control properties (cf. Wasow and Roemer (1972)). The facts are as expected, as (227) illustrates:

(227) a. Ali baa yaa son  e/-/*j karanta  Rur’aanii
       A   NEG 3sm like-of  reading(Pr) Koran
  ‘Ali doesn’t like reading the Koran’

b. Ali baa yaa son  karaatun  Rur’aanii
       A   NEG 3sm like-of  reading(Sec)-of Koran
  ‘Ali doesn’t like Koran reading’

In (227a), the subject of ‘read’ must be Ali, the matrix subject,
whereas in (227b), the subject of ‘read’ is unspecified. The contrasts between (a) and (b) of (228) and (229) can also be accounted for by the (obligatory) presence versus absence of a PRO subject.

(228) a. Yaa saayi a'kalamii don rubuuta waasiiRaa
   3sm buy pen because-of writing(Pr) letter
   ‘He bought a pen to write a letter’

   b. Yaa saayi a'kalamii don rubuutun waasiiRaa
   3sm buy pen because-of writing(Sec)-of letter
   ‘He bought a pen for letter writing’

(229) a. Yaa shiga daakinshi (don) rubuuta waasiiRaa
   3sm enter room-his because-of writing(Pr) letter
   ‘He went into his room to write a letter’

   b. *Yaa shiga daakinshi (don) rubuutun waasiiRaa
   3sm enter room-his because-of writing(Sec)-of letter
   ‘He went into his room for letter writing’

When a PRO subject of a gerund clause is without a controller, it has an arbitrary interpretation, typical of obviative PRO (cf. (223b)):

(230) Karanta littaafii da rubuuta littaafii baa daya ba nee reading(Pr) book and writing(Pr) book NEG one NEG COP
   ‘Reading a book and writing a book are not the same’

The Hausa control facts just reviewed are as expected, mirroring equivalent English facts, though many details are omitted. Where Hausa is different is that primary verbal noun clauses are the only structures containing an ungoverned NP, a PRO, since there are no infinitives in Hausa, as we have already had occasion to mention. Despite this fact, there are other (non-verbal noun clause) constructions which seem to display control properties. We turn to these now.
8.3 Proximate pro

We have seen that Hausa regularly allows null subject pronouns, symbolized as pro. As noted, this is possible presumably because the phi-features of the subject are overtly marked on the INFL node in Hausa, and thus the null pronoun is (locally) identified—i.e., its content is "recoverable".

(231) a. pro yaa tafi Kano
   3sPERF go Kano
   '(He) went to Kano'

   b. pro zai tafi Kano
      3sFUT go Kano
      '(He) is going to go to Kano'

   c. pro sunaa soo pro ya tafi Kano
      3pCONT want 3sSUB go Kano
      '(They) want that (he) go to Kano'

Certain predicates in Hausa require that their embedded subject be coreferential with an NP of the matrix clause: the result is a proximate pro. Examples are given in (232).

(232) a. Alij yaa rigaa [proi/*] yaa yi aikin
       A 3sPERF precedent 3sPERF do work-the
       'Ali already did the work'

   b. Alij yaa iyaa [proi/*] ya rinu Nyalle
      A 3s be-able 3sSUB dye cloth
      'Ali can dye the cloth'

   c. Alij yaa isaa [proi/*] ya hau keekee
      A 3s suffice 3sSUB ride bike
      'Ali is big enough to ride a bike'

   d. Sarkii yaa saa yaaraaj [wai proi/*] su zoo wurinsa
      emir 3s make children that 3pUSB come place-his
      'The emir made the children come to him'

   e. Sarkii yaa bar yaraaj [wai proi/*] su zoo wurinsa
      emir 3s let children that 3pUSB come place-his
      'The emir let the children come to him'

175
Other predicates favor the coreferential interpretation, particularly with embedded subjunctive clauses:

(233) a. Alij yanaa soo [proi ya tafi Kano]
    A 3sm want 3smSUB go K
    'Ali want to go to Kano'

    b. Naa ce ce Alij [proi ya tafi Kano]
    1s say to A 3smSUB go K
    'I told Ali to go to Kano'

    c. Alij baai daamu da [proi ya gan shi] ba
    A NEG3sm be-worried 3smSUB see him NEG
    'Ali doesn’t care if he doesn’t see him'

The interpretation shown by the indices is the most natural for the sentences in (233). However, with an appropriate context, pro can have the index 1—if, for example, (a–c) are answers to the question ‘What about Musaj?’ Furthermore, a lexical subject may appear in place of pro—e.g. daamu ‘my son’. Neither of these is possible with predicates like those in (232). And the predicates in (232) differ from control structures in English in that they require a control interpretation in a finite clause. In English, substitution of a finite embedded clause in a control structure immediately removes the obligatory control: compare (223a) with John promised he; /] would read the Koran. Close examination of the “control” predicates in Hausa indicates that the obligatory coreference is a consequence of the semantics of the predicate (cf. Manzini 1983 on this in Italian and in English). It is difficult to imagine how the one who previously did the action could be different from the subject of the action (232a), or how the one who is able to do the action could be different from the
subject of the action (232b), etc. Thus, it seems that the control properties found in these constructions may in fact be due to pragmatics.

9. Binding Theory

9.1 Binding of Lexical Categories

Binding theory is the subtheory which regulates the relations of anaphors and pronominals to their antecedents, if any. As proposed in Chomsky (1986b), it contains the three conditions in (234), where $\alpha$ binds $\beta$ iff $\alpha$ and $\beta$ are coindexed and $\alpha$ c-commands $\beta$ and free means not bound, and the licensing condition in (235) which defines the binding domain basically as the smallest maximal projection containing both a subject and a governor of $\beta$.

(234)  (A) An anaphor is bound in its GC (governing category)
       (B) A pronoun is free in its GC
       (C) An r-expression if free

(235) The GC for $\beta$ is the least complete functional complex (= domain in which all grammatical functions—subject and complements—compatible with the head of $\beta$ are realized) containing a governor of $\beta$ in which $\beta$ could satisfy (234).

In accordance with (234-235), the lexical anaphors in Hausa, *juunaa* 'each other', *juunan* + pronoun 'one another' (literally, 'each other of X'), and *kai* + pronoun 'Xself' (literally, 'head of X'), obey (A), whereas lexical pronouns obey (B):
(236) a. [GC maalaamaji sun \( \text{ga kansui} \)] a talabijan
\[ \{ \text{ga juunaai} \} \]
\[ \{ \text{ga juunansu} \} \]
\[ * \text{gan sui} \]
teachers 3p see \{ themselves \} on television
\{ each other \}
\{ one another \}
\{ them \}
'The teachers saw themselves/each other on television'

b. Yaaraai suna soo [GC (wai)\( \{ \text{suui} \} \) su ci nasara
\[ \{ *\text{juunaai} \} \]
\[ * \text{kansui} \]
children 3p want that \{ they \} 3pSUB eat victory
\{ each other \}
\{ themselves \}
'The children want that they win'

c. Yaaraai sun san [GC wai\( \{ \text{suui} / j \} \) zaa su zoo
\[ \{ *\text{juunaai} \} \]
\[ * \text{kansui} \]
children 3p know that \{ they \} 3pFUT come
\{ each other \}
\{ themselves \}
'The children know that they will come'

Generally, then, anaphors may appear where pronominals may not and vice-versa, in Hausa and in many other languages. The complementarity breaks down, however, NP-internally, as (237) - (238) illustrate:

(237) a. Sun karanta [littaattaafan juunaai]
3p read books-of each other
'They read each other's books'

b. Suni karanta [littaattaafansu]i
3p read books-their
'They read their books'

c. *Sun karanta [littaattaafan kansu]
3p read books-of themselves
'They read books of themselves/themselves' books'

(238) a. Sun ga [hootunan juunaai]
3p see photos-of each other
'They saw each other's photos'
b. Suni ga {hootunansu₁}
   3p see photos-their
   'They saw their photos'

c. Sun ga {hootunan kansu₁}
   3p see photos-of themselves
   'They saw photos of themselves'

Setting aside (237c) for the moment, we can say that both anaphors and pronouns are permitted in the position of object of an NP. This follows from (235). NP is complete functional complex since the postnominal NP bears the subject θ-role and it is governed by the head noun. A pronoun has a possible indexing within NP compatible with the binding theory conditions—namely, where it is free. Thus NP is the GC for the pronoun, and (237b) and (238b) are permitted. An anaphor, on the other hand, has no possible coindexing within NP consistent with the binding theory since there is no element to be coindexed with. In particular, the specifier position may not contain an argument (an implicit PRO, for example) since the possessor θ-role is assigned by na to the postnominal object and thus a [SPEC, NP] PRO would be without a θ-role, in violation of the θ-Criterion. Thus, NP is not a possible GC in this situation, but 5 is since it does contain a possible indexing—where the anaphor is bound to the subject NP—and thus (237a) and (238a,c) are permitted.

This leaves (237c), which should be permitted, being identical in structure to (238c), which is permitted, as was just shown. Although (237c) and (238c) have identical structures, they have different semantic properties. In (238c), the reflexive bears a "theme" θ-role with respect to the head noun 'photo', whereas the object of 'book' (237c) may bear only a "possessor" θ-role. It appears that it is
'photo' which is exceptional in that it may assign either a "theme" or a "possessor" 0-role to its object. Other NPs, such as littaafii 'book', ra‘ayii 'opinion', etc., assign only a "possessor" 0-role to their NP object; a "theme" complement requires the presence of a preposition like bisa 'on':

(239) Sun karanta [littaafii bisa kansu] 3p read book on themselves 'They read a book about themselves'

(240) a. *Ra‘ayin Aisha na kanta opinion-of A of herself 'Aisha’s opinion of herself'
b. Ra‘ayin Aisha bisa kanta opinion-of A on herself 'Aisha’s opinion about herself'

The ungrammaticality of (237c) and (240a) seems to be because reflexive morphology is incompatible with a genitive possessor argument. A reflexive may have genitive Case if it doesn’t bear a possessor 0-role, as in (204c), and a reflexive may have a possessor 0-role if it does not have genitive Case, as is the case in dative constructions, as in (241).

(241) a. Ali yaa baa kanahi ciwon ka1 A 3sm give himself pain-of head 'Ali gave himself a headache'
b. Deputee sun baa ma kansu kudii da yawa deputees 3p give to themselves money with abundance 'The deputies gave themselves a lot of money'

The correct descriptive statement thus seems to be that a reflexive may not appear as a genitive possessor. This seems to be true in English, too, as the translations of the Hausa examples show (though the
semantic properties of particular nouns may vary--e.g. ra'ayuu vs. opnion).

Although the condition on reflexive anaphors is descriptively adequate, it is merely a stipulation. A more adequate grammar (in terms of explanatory power) would make this statement follow from general principles. Lebeaux (1983) proposes an interesting account of the contrast between reciprocals and reflexives in English which captures the restrictions on the distribution of reflexives as an ECP effect. Perhaps this line of investigation will prove fruitful for Hausa as well. It can be noted that there is other evidence which also suggests that the binding theory is subject to "interference" from other domains. See, for example, the study of French anaphoric and pronominal forms in Zribi-Hertz (1980), which shows that pragmatic considerations may dictate their distribution in certain contexts. These facts are not surprising and not insurmountable under the modular approach to linguistic phenomena being assumed here.33

Returning now to condition (C) of (235), the fact that r-expressions (= "potentially referential" expressions--i.e. names, and as we shall see below, variables) must be free everywhere--whether inside or outside their governing category--is illustrated in (242).

(242)  
\[ \begin{array}{l}  
\text{a. } \ast \text{proj yanaa son Alii} \\
\quad 3\text{sm liking A} \\
\quad '(\text{He}) \text{ likes Ali}' \\
\text{b. } \ast \text{proj yaa cee wai [koowaa yanaa son Alii]} \\
\quad 3\text{sm say that everyone 3sm liking A} \\
\quad '(\text{He}) \text{ says that everyone likes Ali}' \\
\end{array} \]
9.2 Binding of Empty Categories

Chomsky (1982) observes that since various instances of empty categories behave in predictable ways with respect to the binding theory, it is possible to classify the various occurrences of empty NP by the features [+pronominal] and [-anaphoric], just as it is possible to do so for overt NPs. The possible "types" of null and overt NPs are illustrated in (243). (Notice that no overt counterpart for PRO may exist because the binding theory requires [+pron., -anaph.] elements to occur in ungoverned position (as seen above in the discussion of control theory), while Case theory requires overt NPs to have Case, which is assigned under government.)

(243)  Null NP                                      Overt NP
       wh-trace (vbl.)   Meej ka sayaa ti   Naa saayi naamaa
       "What did you buy ti?"       'I bought meat'
       NP-trace       Ali seems ti to be ill      Al hit himself
       lexical anaphors  pro yaa tafi Kanoo   He went to Kano
       lexical pronouns   '(he) went to Kano'  ---
       Baa naa son PRO karantaawaa
       'I don't like PRO to read'

The binding properties of variable, NP-trace, and pro, which parallel names, lexical anaphors, and lexical pronouns, respectively, are illustrated in (244):

(244) a. Waaj shiiji/*i / pro/*i ya ceew wali Aisha tanaa soo ti
      who he    3sm say that A 3sf love
      'Who did he say that Aisha loves?'
b. *The boys eat a lot

c. Yaaraaj sun ce [ŋ prot zaa su tafi Kanoo]
   children 3p say 3pFUT go K
   'The children say (they) will go to Kano'

Variables, like names, must not be bound. and thus (210a), an example
of "strong crossover", is excluded since t₁, the variable, is A-bound
by the matrix subject pronoun. The trace of NP-movement, like overt
anaphors, must be bound in its governing category. (210b) is excluded
because the NP-trace is not bound within the embedded tensed clause,
its governing category. Finally, empty pronouns, like overt pronouns,
must be free in their governing category and thus _pro_ may appear as the
subject of a tensed clause, as in (210c).

9.3 On The Status of Raising in Hausa

9.3.1 The General Case

Let us reconsider now the status of raising in Hausa. In sections
4 and 6 above, it was noted that although Hausa has raising predicates
(i.e. predicates which have a clausal complement and a ə′-subject), it
has no raising structures.34 We are now in a position to show that
this "gap" follows from the binding theory. Since Hausa has no
infinitival clauses, all ə′-complements contain AGR, which governs the
subject, defining a governing category, and excluding anaphors of all
types (lexical and NP-trace) from subject position:

(245) *Aisha a maa kamaataa [ŋ t₁ ta gama aikinta ]
A 3sf be-necessary 3sf finish work-her
'Aisha must finish her work'

Thus, raising is generally excluded in Hausa for the same reason that
it is excluded in English out of tensed clauses, as in (244b): the
trace of NP-movement is not bound within the embedded S, its governing
category because of the presence of AGR.

It is interesting to consider at this point some data reported in
McConvell (1977). McConvell, after noting that it is "not common",
gives examples of raising-to-subject in Hausa. The cases reported
involve apparent raising out of an equational structure.35 In order to
equip ourselves for an examination of the raising data, we will take a
brief detour to consider copular constructions themselves.

9.3.2 Copular Constructions

Hausa has two ways of expressing what is expressed by the verb
'be' in English: the copula nee (m/p)/nee (f) and the continuous INFL.
These two are generally in complementary distribution. It will be
argued in chapter 4, that the continuous INFL may take only PP and VP
(i.e. [-N]) complements. The copula is usually restricted to NP and AP
(i.e. [+N]) complements.36 While the continuous INFL occurs where all
other INFLS do--between the subject and the predicate, as is
illustrated in (246), the copula appears after the predicate, as in
(247).

(246) a. Aisha [I, I tanaa] [vp karanta auranii]
A 3sfCONT read-VN Koran
'Aisha is reading the Koran'

b.Yaaraa sunaa cikin kantii
children 3pCONT inside-of shop
'The children are in the shop'

c. Ali yanaa da kudii
A 3smCONT with money
'Ali has money'

184
(247) a. Aisha [r' maalamaa cee]  
   A teacher COPf  
   'Aisha is a teacher'  

b. Maataa maalaamaai nee  
   women teachers COPp  
   'The women are teachers'  

c. Litzaafin saaboo nee  
   book-the new COPm  
   The book is new'  

d. Kee dooguwa cee  
   2sf tall-f COP-f  
   'You are tall'  

Concentrating now on the copula nee/cee, it is reasonable to  
suggest that it is generated under the INFL node, and that its surface  
position is due to a sort of affix-hopping, which attaches it to the  
end of the predicate. The affixal or clitic nature of nee is shown not  
just by the word order, but by the fact that its tone is always polar  
to that of its host, a phenomenon also found with direct object pronoun  
clitics.  

(248) a. Wannân teebûr nee  
   this table COP  
   'This is a table'  

b. Wannân alkalâmi nee  
   this pen COP  
   'This is a pen'  

(249) a. Mun kaamâa shi  
   lp catch it  
   'We caught it'  

b. Mun sâayee shi  
   lp buy it  
   'We bought it'  

In fact, there is considerable support for considering nee to be a  
manifestation of INFL, and not a verb. It shows agreement, while verbs  
ever do. Unlike verbs, it has no corresponding verbal noun, and it  
can occur with none of the morphological INFL forms. And, while INFL
is often clitic-like in other languages, verbs generally are not.

Nee is a defective INFL, though. It has no tense specification. The examples given above could just as easily translate the past tense of 'be' as the present tense. And, as these examples also show, there is no person-marking: cee is used for all feminine forms and nee is used for all masculine forms. (Nee is also the form used for plural forms, but this is not unusual since Hausa never shows gender distinction in the plural INFL forms.) However, the copula is not the only defective INFL. Our survey so far presents us with the following morphological manifestations of INFL: it may be empty (as in gerund clauses), it may have full AGR features, but an empty Tense node (as in subjunctive clauses), it may have full AGR and Tense specification (as in indicative, tensed clauses), and it may have defective specification of AGR and no Tense node (as in copular clauses). We will have occasion in this study to develop more fully these distinctions between the morphological forms of INFL, which are summarized in (250).

(250) a. [I ] gerund clauses
    b. [I AGR (p,n,g) Tense (O) ] subjunctive clauses
    c. [I AGR (p,n,g) Tense ] indicative clauses
    d. [I AGR (n,g) ] copular clauses

An interesting area of the syntax of copular constructions, which will be relevant to our study, concerns wh-extraction out of these clauses. It is generally not possible to wh-move a constituent from a copular construction to the local SPEC position and leave the copula behind:
(251) a. *Waa sarkii nee a garin nan?
who emir COP at town this
‘Who is the emir in this town?’

b. *Nee wannan nee?
what this COP
‘What is this?’

c. *Baaban Muusa sarkii nee
father-of M emir COP
‘MUSA’S FATHER is the emir’

d. *Mutumin da sarkii nee
man-the that emir COP
‘The man who is emir’

e. *koowace akuyaa da babbaa cee
every goat that big COP
‘every goat that is big’

It is, however, generally possible to extract a constituent from an
eMBEDDED copular clause and leave the copula behind:

(252) a. Waa suka cee sarkii nee a garin nan
who 3p say emir COP at town this
‘Who did they say this emir is in this town?’

b. Mutumin da suka cee sarkii nee a garin nan
man-the that 3p say emir COP at town this
‘the man that they said is emir in this town’

The dichotomy between local and nonlocal extraction is reminiscent
of the conditioning for relative aspect marking. Recall from section
6.3 that perfective and continuous INFLs must occur in a special
‘relative aspect’ form whenever they are governed by a local operator.
Suppose, then, that the ungrammaticality of (251) is to be accounted
for in the same way—i.e., nee has the feature [+definite] and thus
cannot be specified by a [+FOCUS] element (in this case a fronted wh-
or focus operator). How, then, are the English translations of these
sentences rendered in Hausa?
It turns out that there is more than one remedy for this restriction in copular constructions. One method, which seems to be limited to archaic/literary Hausa and to formulaic expressions, is to omit INFL altogether. (253), from Imaa (1980:7) is an example.

(253) Nej [g ruwanmu da wani shirin mayaka ti] what what-our with a preparation-of warriors
‘What business do we have preparing soldiers?’

Apart from these specific contexts and styles, modern Hausa requires the presence of an overt copula (e.g. Aisha maalaamaa *(cee) ‘Aisha is a teacher’, etc.). Nee/cee, which was perhaps at first merely a focus marker in these constructions, has been reanalyzed as an INFL form. Its obligatoriness may be attributed to its status as a predicate 0-role assigner (and loss of a structural rule of 0-role assignment in copular constructions in Hausa).

A more common way of overcoming the restriction on the occurrence of nee is to front the entire predicate. Corresponding to (254a-c) are (254a-c):

(254) a. Waanee nee [g sarkii a garin nan ] who emir at town this
‘Who is the emir in this town?’

b. Meenee nee [g wannan ]37 what this
‘What’s this?’

c. Baaban Muusaa nee [g sarkii ] father-of M COP emir
‘MUSA’S FATHER is the emir’

Finally, extraction to a local [SPEC,CP] of a copular construction is possible if the “nonverbal” form of the relative continuous INFL
(SUKE) replaces the copular INFL nee/cee (cf. section 2.5.4 of chapter 4 for discussion of these forms). That is, nee/cee like SUN and SUNAA, the perfective and continuous INFLs, also has a "special" relative aspect form:

(255) a. Mutumin da YAKE sarkii
    man-the that COP-3sm emir
    'the man that is emir'

b. Koowace akuyaa da TAKE babbaa
every goat that COP-3sf big
    'every goat that is big'

c. Yaaran da SUKE 'yan nakaranta
    children-the that COP-3p students
    'the children that are students'

Ma Newman (1976) limits her discussion of the use of SUKE in equational sentences to relativization, noting (p. 182, fn. 7) that it "apparently does not" occur in wh-interrogative and focus constructions. In fact, (the equivalent of) SUKE is quite regularly found in these constructions in Western Hausa (e.g. Shi as sarkii 'HE is the emir', etc.), though in Standard Hausa, examples such as (256) seem to be limited.

(256) Haka? (s e YAKE tï)?
              thus COP-3sm
    'Is that so?'

There does seem to be an explanation for the use of SUKE for relativization out of a copular construction, but predicate fronting for wh-interrogation and focus, however. Relativization may not take the option of fronting the entire predicate because relative clauses are interpreted by predication of the head of the relative clause with
the NP wh-operator in the [SPEC,CP]. The entire predicate, which is not an NP, may thus not occupy this position in relative clauses, and hence the only way relativization may proceed is through use of the relative INFL form SUKE. Now, we know that, historically, the existence of special relative INFL forms for INFLs other than the perfective is relatively recent in Hausa (cf. Newman and Schuh 1974). It makes sense, in light of this, that SUKE is used in copular constructions only where absolutely required (and, even then, it can be added, at least some speakers seem to simply reject the constructions altogether).

Our detour on copular constructions is not meant to be a thorough analysis of these structures, but rather a brief outline of their salient syntactic features. We return now to the question of raising.

9.3.3 Raising out of Copular Constructions

McConvell (1977) claims that Hausa has constructions which show application of Raising-to-Subject, "with a small number of verbs". One of the examples he gives is that in (257b). (257a) shows the non-raised version.

(257) a. Yaa kasancee yaarainyar ‘yar mahaucii cee
  3sm happen girl-the daughter-of butcher COP
  'It happens that the girl is the daughter of the butcher'

  b. Yaarinyar taa kasancee ‘yar mahaucii cee
     girl-the 3sf happen daughter-of butcher COP
     'The girl happens to be the daughter of the butcher'

The sentence in (257b) involves raising of the subject of a copular construction to the matrix (Ø') position. Notice that if nee-
cliticization, which we argued for in the preceding section, takes place at S-structure, then the embedded subject has no governor in the embedded clause and hence its governing category cannot be the embedded I", but rather it is the matrix I". This means that an NP-trace in subject position is permitted by the binding theory since it is bound (by the matrix subject, its antecedent) in its governing category (the matrix S).

(258) Yaarinyarì taa kasancee [I" t₁ [NP 'yar mahaucii cee]]

The derivation in (258) is thus permitted and the Binding Theory plus the hypothesis that nee cliticizes at S-structure correctly predict these to be the only types of raising to be found in Hausa, since these are the only cases in which the governing category of the subject is not its immediately dominating S.

A question remains however. Many speakers do not accept (257b), though some recognize it as something they have heard, even though (257a) is perfectly acceptable to them. The parameter involved in this difference among speakers (dialects? registers?), alluded to already, can be taken to be the level at which nee-cliticization takes place. We assume, with Borer (1984), that morphological rules such as cliticization of INFL may take place at any level, subject to language-particular restrictions and to general principles (such as the projection principle). Since raising in (258) requires nee to be cliticized at S-structure, its exclusion is obtained by restricting nee-cliticization to PF. This latter assumption would mean that at the level of the binding theory (S-structure, or LF), an embedded
equational sentence is the governing category for its subject since this latter is governed by the INFL nee.

9.3.4 Other Raising Constructions

McConvell (op. cit.) gives the sentence in (259a) as an example of raising from object position. The subject of the copula (TAKE) corresponds to the thematic object of 'hit' in this sentence, and thus it would appear as though the structure were something like that in (259).

(259) a. Yaarinyar da TAKE [5 sun bugee ta] taa warkee
girl-the REL COP-3sf 3p hit her 3sf recover
'The girl who has been hit by them recovered'

b. [NP yaarinyar [5, O i da [5 t i TAKE [5 sun bugee ta m]]] ...

Now, as we have seen, an NP-trace in object position will always be ruled out by Condition (A) of the Binding Theory, since it is not bound within the lower 5, its governing category. (259) contains an overt pronoun in the raising position, however, and McConvell indicates that a gap here is not wholly acceptable:

(260) ?Yaarinyar da takae [5 sun bugaa ] taa warkee

What is to be made of these sentences?

No speakers I have asked have accepted either (259) or (260), but this may be because in these examples nee takes a clausal complement (which these same speakers did not like). Some speakers did accept at least one case having similar apparent raising from object position. For these speakers, the verb ci ‘eat’, when it means ‘deserve’, may have either a (null) expletive subject as in (261a), or an overt
subject which corresponds to the thematic object of the embedded clause, which must be an overt pronoun, as in (261b).

(261) a. e yaa ci [g a baa Aisha kudii] 3sm deserve indef give A money 'It deserves to give Aisha money'

b. Aisha ta ci [g a baa *(ta) kudii] A 3sf deserve indef give her money 'Aisha deserves to be given money'

c. Aisha, e yaa ci [g a baa ta kudii] A 3sm deserve indef give her money 'Aisha, it deserves to give her money'

(261b) can be contrasted with (261c), where Aisha is in Topic position (i.e., it is left dislocated) rather than subject position, and thus INFL shows the neutral 3sm agreement (yaa) of an expletive subject.

The obligatoriness of an overt pronoun in the embedded object position makes both this example and the one given by McConvell not be straightforward raising from object structures. We independently know that in Hausa, human direct object pronouns are obligatory (though [+human] pro objects are apparently marginally possible for some speakers) if a gap in the same position is excluded because of subadjacency or the ECP. Can we take (257) and (261) to mean that a Binding Theory violation may also be circumvented by a resumptive pronoun strategy? A pronoun, if it is indeed [+pronominal, -anaphoric] in this context, would obey the Binding Theory here. English (262) seems to pose the same question:

(262) a. It looks like Mary left John

b. John looks like Mary left *(him)
And Vata also has raising from tensed clauses of this type (cf. Koopman 1984, Sportiche 1983).

I will leave these questions open for further research.

9.4 OPC Effects

Montalbetti (1984) in a study of the binding properties of pronominals proposes a constraint on overt pronouns which applies at LF:

(263) **OPC** (Overt Pronoun Constraint): Overt pronouns cannot link to formal variables iff the alternation overt/empty obtains.

"Linking" here refers to the representation of the assignee of an antecedent relation between two positions: where ϕ is linked to φ, φ is an antecedent of ϕ.

The effects of (263) can be seen in Spanish, the primary language investigated in Montalbetti (op. cit.), but also in Italian, Catalan, Portuguese, and Japanese, also discussed by Montalbetti. There is thus reason to believe that the OPC is operative in any language in which overt and empty pronouns can be found in the same distribution—in other words, that (263) is a universal of sorts, presumably to be derived in some way, though Montalbetti only speculates on this latter.

The canonical OPC effects are illustrated in (264)-(266), with Spanish examples from Montalbetti (op. cit.). In (264) we see that when the antecedent is a non-quantified expression, either an overt or a null pronoun may be linked to it:

(264) Juan cree que él / proi es inteligente
'John believe that (he) is intelligent'
When Juan is replaced by a quantified expression (as in (265)) or a wh-phrase (as in (266)), however, an overt pronoun may not be so linked. The linking in both of these latter cases is, at LF, to a variable (the trace of QR and the trace of wh-movement, respectively). In (265b), it is the bound pronominal reading which is excluded (for many x, x a student, x believes that x is intelligent); the group reading (for many x, x a student, x believes that THEY are intelligent) remains possible.

(265) a. Nadie ti cree que *él / proi es inteligente
   'No one believes that (he) is intelligent'

   b. Muchos estudiantes ti creen que *ellos / proi son
       inteligentes
       'Many students believe that (they) are intelligent'

(266) a. Quién ti cree que *él / proi es inteligente?
       'Who believes that (he) is intelligent?'

   b. A quién Pedro convencio ti de que *él / proi es
       inteligente?
       'Who did Peter convince that (he) is intelligent?'

Where no overt/empty alternation obtains, such as in the position of the object of a preposition (which can’t be empty in Spanish), or in most NP positions in English, linking of an overt pronoun to a variable in permitted:38

(267) Muchos estudiantes ti quieren que Maria se case con ellos;
     'Many students want Mary to marry them'

Likewise, when the antecedent is not itself a variable (even though it may be linked to a variable), a bound overt pronominal is possible, as the contrast (268a,b) shows:

195
(268) a. Muchos estudiantes tij dijeron que pro^i piensan que ellos pro^i son inteligentes
'Many students said that (they) think that (they) are intelligent'
b. *Muchos estudiantes tij dijeron que Maria piensa que ellos pro^i son inteligentes
'Many students said that Mary thinks that (they) are intelligent'

Let us consider now the OPC with respect to Hausa. We have noted all along that Hausa, like Spanish, etc., freely allows null subject pronouns, as in (269a,b). And there is also a set of independent pronouns which occur in the position of the object of a preposition (269c) and in pre-predicate position (269d,e):39

(269) a. pro mun tafi Kanoo
    lp go K
    '(we) went to Kano'
b. pro daalibai nee
    students COP
    '(they) are students'
c. Daalibai sunaa da shii
    students 3p with it
    'The students have it'
d. Muu mun tafi Kanoo
    we lp go K
    'We went to Kano'
e. Kee daalibai cee
    you student COP
    'You are a student'

Given the existence of left dislocation in Hausa, the pronouns in (269d,e) are not necessarily in subject position though, since left dislocated (and focussed) pronouns appear in the independent form as well. The structures could in fact be left dislocation structures, as in (270), given an appropriate context.

(270) a. [TOP muu ] [g', pro [I', mun tafi Kanoo]]
b. [TOP kee ] [g', pro [I', daalibai cee]]
The question arises, then, as to whether subject pronouns exist at all. That is, is there any evidence which shows that an independent pronoun must be in subject position in any given context? There is. In Hausa, the structures schematized in (271) are disallowed. The first is a structure in which wh-interrogation and focus-fronting have applied to the same clause. This is excluded since COMP (or, perhaps, the SPEC of C′) may contain only one wh-phrase (i.e., multiple adjunction is excluded in principle). (271b) is also ungrammatical, for reasons that need not concern us here.40


The examples in (272) and (273) illustrate the ill-formedness of the structures in (271).

(272) *Waa 걆 shii 걆 [♯ t i ya sayaa t j ]
who it 3sm buy
'Who it bought?'

(273) a. *Waa 걆 yaarinyar nan j [♯ t i zai auree t a]
who girl-the this 3sm marry her
'Who, this girl, is going to marry her?'

 b. *Na qa littaafin O j da Abdu j kuwa [♯ suka baa shii j t i]
I saw the book that, as for Abdu, they gave him'

Now, what is crucial is that a structure involving a wh-phrase plus an independent pronoun corresponding to the subject is acceptable:

(273) Mee 걆 shii 걆 ya j cea t i
what he 3sm say

Since neither a focussed NP nor a dislocated NP is permitted in this context, the pronoun must be in subject position for the structure to
be acceptable. We may conclude, then, that the subject position may contain an overt pronoun.

Now, since the subject position in Hausa may contain both overt and empty pronouns, we expect in principle to find OPC effects in Hausa. In fact, there do not seem to be any OPC effects at all in Hausa. Both overt and null subject pronouns may be bound to the variable in the following constructions:

(275) a. Koowaaŋ yanaa tsamahaani shiiŋ / proi yanaa da ilimii everyone 3sm think he 3sm with knowledge
'Everyone thinks (he) is intelligent'

b. Daalibai da yawaŋ sunaa tsamahaani suuj / proi sunaa da students a-lot-of 3p think they 3p with
ilimii
knowledge
'Many students think (they) are intelligent'

c. Waai yakee tsamahaani shiiŋ / proi yanaa da ilimii who 3sm think he 3sm with knowledge
'Who thinks (he) is intelligent?'

d. Su waai suka cee suuj / proi sun tafi sinima who(p) 3p say they 3p go cinema
'Who all said (they) went to the movies?'

And, both overt and null subject pronouns allow for a "sloppy identity" reading of the following:

(276) Ali yanaa tsamahaani shiiŋ / pro yaa kashee kuuraa; Muusa maa haka
'Ali thinks (he) killed a hyena and so does Musa'

That is, (276) may be interpreted as Musa also thinking that he, Musa, killed the hyena. This reading is not normally available with an overt pronoun when it alternates with an empty one, a fact that follows from the OPC, as Montalbetti shows, since "sloppy identity" presumably
involves variable binding of some kind. A relevant example in Spanish is (277), which contrasts minimally with Hausa (276) in not allowing the sloppy identity reading when the pronoun is overt.

(277) Juan cree que él / pro mato al vampiro y Luc también 'John believes that (he) killed the vampire and so does Luke'

How do we account for this difference between Hausa and other null subject languages such as Spanish, Italian, Catalan, etc.? The beginning of an answer, I believe, lies in footnote 9 (page 128) of Montalbetti (op. cit.) where it is reported that O. Jaeggli (p.c.) finds that in Spanish cases of overt/empty pronoun alternation, "an overt pronoun improves its chances of being interpreted as a bound variable if stressed." Montalbetti, who takes this to be a dialectal difference, notes that it may be derived from the OPC. The OPC is inapplicable in this case since if an overt pronoun is stressed, it doesn't alternate with an empty one (since pro may not be stressed, stress requiring a phonological matrix).

As mentioned earlier, the use of subject pronouns in Hausa indicates contrast. An appropriate context for (274), for example, would be one where the speaker is finding out what a series of individuals said and comparing their answers, as in the English translation 'What did HE say?'. In Hausa, which has no contrastive stress (being a tone language), it is the mere presence of an overt subject pronoun which implies contrast. Contrast is indicated by a pronoun with a phonological matrix: pro cannot have this contrastive function, and thus the two do not actually alternate and hence the OPC
is inoperative. This is true even in a context in which the
independent pronoun does not have the possibility of being in an A'-
position because of the restrictions in (271). Thus, both an overt and
an empty pronoun may be bound to the variable of QR in (278a,b).

(278)  a. Koowannee daalibii j yaa zaaši muushen da shii j / pro; ya fi oo
       'Each student choose the teacher that (he) liked best'

       b. Daalibai da yaaši sun Roonee tarkardun da suu j / pro; suka rubuutaa
          'Many students burned the papers that (they) wrote'

9.5 Subjunctive Disjoint Reference Effects

It has been noted by various researchers of Romance languages that
the pronominal subject of an embedded subjunctive clause must be
disjoint in reference with the matrix subject. Recent discussion and
analysis of this binding theory related effect can be found in Picallo
(1984) and Kempchinsky (1985), from whom we borrow the term
"subjunctive disjoint reference effect" for this phenomenon. The basic
facts, which are found in Romance languages such as French, Spanish,
and Catalan, are illustrated by the examples in (279), taken from
Kempchinsky (op. cit.)

(279)  a. *Reaganj desea que pro; derrote a los Sandinistas
       SUB
       'Reagan desires that (he) defeat the Sandinistas'

       b. Reaganj desea que PROj derrotar a los Sandinistas
       INF
       'Reagan want to defeat the Sandinistas'

       c. Reaganj mantiene que pro; derrotará a los Sandinistas
       IND
       'Reagan maintains that he will defeat the Sandinistas'
As Picallo (op. cit.) argues, an "Avoid-a-pure-pronominal" account (cf. Bouchard (1984)) seems inadequate in that there are structures where a control structure (and thus PRO, which is [+anaph.]) is available and, despite this fact, a subjunctive alternative with a pronoun subject is allowed. This possibility is illustrated in (280) with a Catalan example from Picallo (op. cit.)

(280) a. En Pere va convècer en Jordi de [PROj anar a Nova York] INF
   'Peter persuaded George to go to New York'

   b. En Pere va convèncer en Jordi que [proi anés] a Nova York SUB
   'Peter persuaded George that (he) go to New York'

Likewise, a simple "Avoid-an-overt-pronoun" account (cf. Chomsky (1981), although descriptively adequate for a language like French which has no null subjects, is insufficient cross-linguistically since in languages having null pronouns, both overt and null pronouns are similarly restricted.

Picallo offers an analysis in which it is the feature [+Tense] which determines opacity for the binding theory. It is argued that in order for the subjunctive, which is taken to be without inherent tense features, to be situated within a time-frame, it must receive tense features by coindexation with the tense features of a governing (indicative) INFL. In this way the tense dependency characteristic of subjunctive clauses is represented. The result is a "tense-chain". The binding domain for an element α is taken to be the minimal subchain of a tense-chain containing a governor for α and an accessible SUBJECT (the subject or AGR, if not co superscripted with α as a result of
subject agreement). If there is no accessible SUBJECT, it is the 
(maximal) tense-chain which is the binding domain. In other words, the 
binding conditions will apply to a domain including more than one S if 
tenses are linked and there is no intervening subject. The effect is 
that the binding domain for an embedded subjunctive subject will be that 
of the governing indicative clause. Pronouns must thus be free within 
this domain and hence (279a) is ungrammatical, whereas (279c) is 
grammatical since the maximal tense-chain there is the embedded 
(indicative) clause.41

The subjunctive disjoint reference effect, then, rests on the 
linking of the subjunctive INFL to an INFL with tense features (but, 
ct. Kempchinsky 1986 for a different view). This tense-linking occurs 
prior to the application of the binding theory and thus the binding 
properties of elements in subjunctive clauses are different from those 
of elements in indicative clauses. Consider exactly where tense-chain 
formation occurs in Catalan or Spanish. In these languages, the 
subjunctive is morphologically marked for past versus present tense 
(though it is (largely) dependent for these features on the tense 
features of a governing indicative INFL). We can suppose, then, that 
the subjunctive INFL gets its tense features at S-structure prior to 
the binding theory, which is assumed to apply at S-structure (or at LF) 
and prior to PF, where the morphological marking shows up.

Consider now the Hausa subjunctive. Morphologically, it is 
invariant—i.e., there is no past subjunctive different from a present 
subjunctive, etc. Let us take this to indicate that subjunctive tense- 
linking in Hausa is not a syntactic rule, as it is in Catalan and
Spanish, but a discourse (LF') rule. The result would be that there would be no binding theory effects of tense-linking, and, in particular, no subjunctive disjoint reference effect.

There are indeed no subjunctive disjoint reference effects in Hausa, as the example in (281) demonstrates:

(281) Reagan yanaa soo Sub ya ci 'yan Nicaragua

'Reagan wants that (he) defeat the Nicaraguans'

In fact, (281) is the only way to translate the Spanish (279a), a point to which we return shortly.

The assumption that subjunctive tense-linking may in principle apply at any level of grammar, the null hypothesis, allows for an account of the difference between Hausa and certain Romance languages in terms of the setting of a parameter restricting this rule to a particular level of grammar. Positioning a parameter is of course merely the beginning of a complete analysis. The other part involves explaining how it is that a child learning his language manages to set the parameter in a given way. In other words, what evidence (what data) is decisive? We offer in what follows only some speculation on this.

It seems that the fact that Hausa has both no infinitival clauses, the other type of clausal category whose Tense node is empty, and no subjunctive disjoint reference effect, is not accidental. It seems to be the case that in the languages in which the subjunctive disjoint reference effect holds, there is a regular alternation between infinitival and subjunctive clauses. In languages in which there is no
such regular alternation, there are no subjunctive disjoint reference effects. Hausa is an example of the latter, as are Yoruba (V. Carstens, p.c.) and Arabic. The Romanian situation is also instructive. In this language, the domain of the infinitive in other Romance languages has been radically overtaken by the subjunctive (cf. Farkas (1982), Kempchinsky (op. cit.)). And, in Romanian, there are no subjunctive disjoint reference effects. Surely this is not an accident given the correspondence of these two phenomena in other languages.

How exactly the presence of a regular infinitival/subjunctive alternation should be related to the presence of subjunctive disjoint reference effects it not at all obvious. The relation apparently cannot be direct (i.e., "where the subjunctive alternates with an infinitive, the latter must be used for coreference with subject NP"), because of data like that in (280). We might suppose that infinitives, which are never morphologically marked for tense, receive tense-interpretation by an LF' tense-linking rule. Now, if all languages are alike in having an LF' rule of tense-linking (just as all languages have an LF version of wh-movement), we might suppose that presence of a regular subjunctive/infinitive alternation in the language allows the child to deduce that there is syntactic (subjunctive) as well as discourse (infinitive) tense-linking. In a language where this regular alternation does not obtain, the child deduces that there is only discourse tense-linking.
CHAPTER ONE NOTES

1 Hausa, with over 20 million speakers (largely in northern Nigeria and Niger, but also in Ghana, the Cameroons, the Sudan, and elsewhere), is the major language of the Chadic family of Afroasiatic. Apart from Arabic, it has more native speakers than any other language of Africa and it commonly referred to as the lingua franca of West Africa. There is a large literature on Hausa grammar which begins in the middle of the 19th century. See Schuh (1983b) for further general information.

2 See the Extended Projection Principle of Chomsky (1982) which is the Projection Principle plus the stipulation that Ss must have subjects. See also Borer (1984) where this stipulation is derived from (independently motivated) obligatory coindexing of INFL with an NP. Both of these proposals predict that gerunds and S must have subjects, whereas NPs are not so constrained, under the widely accepted view that gerunds have a clausal structure.

3 Hebrew is an example of a pro-drop language where overt pronouns do not necessarily indicate emphasis. See Borer (1984) for discussion.

4 Neither passives nor existential sentences have θ'-subject positions in Hausa. What is commonly referred to as a passive in Hausa (though, in fact, it is more likely simply a detransitive like English The pirates sank the ship / The ship sank) involves derivational morphology, as in (genetically related) Hebrew and Arabic. The "passive" form of the verb is but one of the seven "Grades" (= pinyamin of Semitic). See Parsons (1960/61) and Newman (1973) on the verbal grade system and Jaggar (1981) on the passive (= Grade VII).

Existential constructions in Hausa are non-verbal. Akwai 'there exists' and baabu (baa) 'there doesn't exist' never occur with INFL and thus never are distinguished for tense/aspect or number, as the following illustrate:

(i) a. Akwai mutaanee da yawaa
'There are/were a lot of people.'

b. Baabu aikii
'There is/was not any work.'

5 Whether or not these actually appear in subject position is immaterial to our point here. Koster (1978) and Stowell (1981) argue that sentential subjects actually occur in (presentential) Topic position. Stowell assumes that sentential subjects are generated in sub-

205
ject position and then moved to Topic position by wh-movement (because of Case Theory). There are Hausa facts which pose a potential problem for this particular analysis. Topicalization structures, which clearly involve wh-movement, have a sort of wh-marking on the INFL of the clause headed by the wh-element. This marking is obligatory in this context. However, sentences with sentential subjects do not take wh-marking. This would seem to argue in favor of base-generation of the sentential subject in Topic position with a (null) resumptive pronoun in subject position, if it is accepted that sentential subjects may not appear in [NP,S], as seems likely. See Section 6.3 below for further discussion of wh-marking in Hausa.

A few remarks on the orthography and glosses of the Hausa examples used in this thesis are in order. Standard orthography will in general be followed. Differences from English orthography include the following: ç = [č], k = [k'], ts = [ts'], and 'v = [ʼ]. Hausa orthography uses the IPA symbols for ã and ã. Although vowel length, which is phonemic, is not generally marked in orthography, I will indicate it here by doubled vowels to avoid confusion. Tone, which is also phonemic (Hausa has phonemic high and low tones, as well as a phonetic falling contour tone), will be marked only where relevant to the syntax under discussion. Low tone is marked by a grave accent over the beginning of the nucleus (e.g. bàq): falling tone is marked by a grave accent on the second member of the nucleus (e.g. bàà) or a circumflex (e.g. bàf), and high tone is unmarked (e.g. bàa).

Pronouns will be glossed with their English equivalents, whereas INFL (a separate word in Hausa) will be glossed with person, number, and gender features only, in that order. For example, '3sm' = a third person singular masculine INFL. Tense/aspect of INFL will be indicated only where relevant to the discussion; otherwise, the English translation will be considered sufficient.

The data on which this thesis is based come from the speech of both Kano (Nigeria) Hausa speakers (= the "standard" dialect) and that of Northern (Niger) dialects, though most comes from Niger Hausas. It has not always been possible to check each phenomenon in both dialects and, thus, it may be that a certain amount of dialectal variation has been glossed over.

I have been unable to find acceptable cases of control involving a weather predicate subject—even in constructions where control is otherwise possible, as the following show. I have no explanation to offer for this.

(i) *Ana yin ruwaa lookacin [PRO yin sanyii]
   indef do water time-of do cold
   'It rains when being cold'
(ii) Aisha ba ta saamu lookacin [PRO yin aiwinta]
   A. NEG 3af get time-of do work-her
   'Aisha didn’t find time to do her work’

8 It should again be recalled that this proposal (and Case Theory
in general) concerns abstract and not morphological Case. There are in
fact cases of double morphological Case-markings. Some examples are
Quechua, Russian (Koopman 1984:147) and Walpiri (Vergnaud 1982:Ch.2,
fn. 17). The rarity of such examples can be taken to indicate that, in
the unmarked case, morphological marking of Case follows from abstract

9 Koopman (1984, Section 5.2) argues that it is not the presence
of AGR which is responsible for the assignment of nominative Case. She
analyzes Portuguese inflected infinitival clauses as involving verb-
movement to INFL in order to make nominative Case possible. This
analysis cannot be extended to Hausa subjunctives (assuming that these
latter lack a tense operator, as will be argued here) since INFL is an
independent word from the verb, and thus V-movement into INFL cannot be
maintained. The absence of "affix-hopping" in Hausa is made especially
clear by the fact that adverbial particles, which may never intervene
between clitics and their hosts (i), may intervene between INFL and V
(ii):

(i) Ali yaa san (*daa) shi
    A 3sm know PRT him(Cl)
    'Ali knows him'

(ii) Ali yaa (daa) san shi
    A 3sm PRT know him
    'Ali knows him'

10 McHugh (1984:2) argues that Hausa subjunctives are inflected
infinitives rather than subjunctives. One argument presented there is
that the subjunctive represents the bare form of the predicate in that
INFL contains only agreement features. This runs counter to historical
and comparative evidence presented in Newman and Schuh (1974) which
suggests that, like subjunctives in other languages, Hausa once had
morphological marking of this fact on the verb. (Incidentally, the
citation form of the verb for Hausa is not the "bare verb form" found
in the subjunctive, but the verbal noun, on which, see Section 5.2.2)
Other arguments are based on similar distribution of the subjunctive in
Hausa and infinitives in other languages. This similarity is not
surprising under the view adopted here. Furthermore, it’s not obvious
what’s at stake in distinguishing between an inflected infinitival and
a subjunctive, other than morphology. Piccallo (1984) reports that the
difference between the two in Portuguese, which has both, is only
stylistic, the two forms being otherwise interchangeable in all

207
contexta. See also Gouffe 1966, Eulenberg 1967, and Gregerson 1967 on the Hausa subjunctive.

11 There are a couple of fixed 'N NP' constructions in Hausa. Schuh (1974) suggests that these are remnants of inalienable possession constructions, a widespread phenomenon in Chadic languages (which Hausa has lost).

12 Additional support for primary verbal nouns having a structure besides that of continuous VPs is the fact that stative verbs, which may not occur in the continuous aspect, may have a verbal noun form elsewhere—e.g., as subjects or in adverbial clauses:

(i) *Nunan gaaneewaa yanzu
    1p understanding(Pr) now
    'We're understanding now'

(ii) *Inaa ganinshi
    1s seeing(Pr)-of-him
    'I'm seeing him'

(iii) Gaaneewaa taa fi kwai-kwayoo
      understanding 3sf exceed imitating
      'Understanding is better than imitating'

(iv) Da ganinshi, ...
    with seeing-of-him
    'Upon seeing him'

13 Another argument for the propositional status of gerunds in Hausa has to do with control, which will be more fully discussed in section 8.

14 It should be noted that many sentences which make fine infinitival relatives/purposives in English do not necessarily make wonderful subjunctive ones in Hausa, the future form of INFL being required instead.

(i) a. *Inaa neeman abookii in rubuutaaw wa e wasiiraa [cf. (81c)]
    1s look-for friend 1s write to letter
    'I'm looking for a friend to write letters to'
    b. Inaa neeman abokin da zan rubuutaaw wa e wasiiraa
    1s look-for friend-the that 1sFUT write to letter
    'I'm looking for a friend to write letters to'

(ii) a. ??Baa ni da litaafiin in karantaa e (cikin jirgin sanaa)
    NEGis with book 1sSUB read in airplane
    'I don't have a book to read (on the plane)'
b. Baa ni da littaafii da zan karantaa a (cikin jirgin NEGis with book that isFUT read in airplane same)
   'I don’t have a book to read (on the plane)'

I would speculate that this is due to semantic reasons, though these constructions in general require more study.

15 Hausa also has constructions which resemble English "Tough"-constructions. These constructions in Hausa are formed with either subjunctive clauses or with gerund clauses, rather than infinitives. (Recall that Hausa has no infinitives.)

(i) Dooyaa tanaa da wuyaa a samu a Los Angeles
    yam  3sf with difficulty indef get in
    'Yams are hard to find in L.A.'

(ii) Dooyaa tanaa da wuyar samu a Los Angeles
    yam  3sf with difficulty-of getting in
    'Yams are hard to find in L.A.'

Though I am not sure what the best analysis of these constructions is, there is evidence that suggests that they do not involve wh-movement, contrary to the English equivalents, for which movement of a null wh-element to the COMP of the infinitival clause has been assumed. Subjunctive tough-constructions, like that in (i) above, are acceptable only if the gap is [-human]—cf. (iii) - (v) below. Since Hausa allows null [-human] direct object pronouns, but not [+human] ones, it seems that the acceptable tough-constructions do not really contain a gap, but a null object instead. (This predicts that (iii) and (iv) should be grammatical with an overt resumptive pronoun—a question I am unable to answer at this time.)

(iii) *Saani yanna da wuyaa a gani a Los Angeles
      S   3sm with diff. indef see in
      'San is hard to see in L.A.'

(iv) *Ali yanna da wuyaa a gaya wa Muusa ya gani
      A   3sm with diff. indef tell to M   3sm see
      'Ali is hard to tell Musa to see'

(v) Kur’aanii yanna da wuyaa qa maalaamai su saa mutuunee su
      Koran   3sm with diff. for imams   3p make people  3p
      karantaa
      read
      'The Koran is hard for the imams to make people read'

It should also be noted that the acceptability of subjunctive tough-
constructions is subject to idiolectal/dialectal variation: this may be the result of the strength of a stylistic preference for a gerund construction over an equivalent subjunctive structure, though here I am speculating.

Gerund tough-constructions, as in (ii), are accepted by all speakers and the "gap" may be [+human]:

(vi) Saani yanaa da wuyar gani a Los Angeles
    3m with diff.-of seeing in
    'Sani is hard to see in L.A.'

However, there are no "COMP-to-COMP" type structures (cf. (v)) and thus no evidence for movement:

(vii) *Kur’aanii yanaa da wuyar saa (ga maalaasai) mutaaanee su
    Koran 3m with diff.-of making for imams people 3p
    karantaas
    read
    'The Koran is hard for the imams to make people read'

This difference with English tough-constructions follows if it is true that NPs and gerund clauses, unlike infinitival clauses (which are S's), do not have a COMP position (cf. Stowell 1982) and since there would be no position for the wh-element to move to.

Hebrew has gerundive tough-constructions with similar properties (Borer, p.c.)—e.g. Dan kashe le-havana "John difficult to-understanding" or ha-sefer kal le-kiri'a "The book easy to-reading". One possible analysis of gerundive tough-constructions, in languages like Hausa and Hebrew, might be to say that they are a result of lexical detransitivization of gerunds. A process of this sort is common in languages, independent of tough-constructions—cf. English Devouring is worse than gulping. But this still would not explain why it is that the "gap" must be coreferential with the matrix subject, the fundamental property of tough-constructions:

(viii) Marx yanaa da wuyar karantaawaa
    'Marx is hard to read' / *'Marx has trouble reading'

(ix) Kaa yi wuyar gani
    2am do diff.-of seeing
    'You’ve been hard to see' / *'You’ve had trouble seeing'

It may be that this property is related to the semantics of the matrix predicate. Thus, while predicates containing continuous INFL (= 'be') plus a predicate PP headed by da 'with', as in (viii), or of the verb yi 'do/make', as in (ix), require the tough-interpretation, a predicate containing the verb ja 'feel' does not, even though all of these predicates appear to assign subject 8-roles.
(x) a. Sun ji wuyar faskaren itacen nan
   3p feel diff.-of chopping-of wood this
   'They had trouble chopping this wood'

b. Sun ji wuyar faskaree
   'They had trouble chopping' / 'They were hard to chop'

(xi) a. Sun ji daadin sauraaren maganarsa
   3p feel pleasure-of listening-of talk-his
   'They enjoyed listening to him talk'

b. Sun ji daadin sauraaree
   'They enjoyed listening' / 'They enjoyed being listened to'

16 **Matrix** subjunctives, which are allowed under appropriate
   discourse conditions (basically, when a matrix clause is implicit),
   have the same restriction:

(i) *Waa in tambayaa?
   'Who to ask?'

(ii) *Kanoo (nee) in tafi baayan an koori duk mutaaben Nijjar
    'Kano I go after they kicked out all of the Nigeriens?'

A few adjunct **wh**-words may marginally appear S-initially, as in (iii)
and (iv). These may actually involve two separate questions--e.g.,
'What? I talk to him?'

(iii) Yaayaa in yi hiiraa da shii baayan abin da ya yi1 mini?
    'How to talk to him after what he did to me?'

(iv) ?Don mee mu tafi?
    'Why to go?'

17 Kempchinsky (1985) suggests that the common restriction against
   **wh**-subjunctives can be derived by assuming that subjunctive clauses
   contain a subjunctive mood operator, which must be in COMP when a verb
   subcategorizes for the subjunctive. Then, since a verb may
   subcategorize for only one head (at a time), it may subcategorize for
   either a subjunctive operator or a **wh**-operator, but not both. Cases
   where **wh**-subjunctives are allowed, as in Italian, are cases where a
   matrix verb subcategorizes (only) for [+wh]. In this case, the
   subjunctive operator is not required to be in COMP to satisfy the
   selection of the verb and hence the operator position contains only the
   **wh**-operator.

An objection that might be raised is why it is that only
   subjunctives have tense operators--i.e., if tense is to be analyzed as
   a sentence operator at all, surely all tenses are so analyzed.
The analysis in Kempchinsky (1985) also has as a consequence the derivation of the "subjunctive disjoint reference effect" from the binding theory (at LF). At LF, INFL (the location of the subjunctive operator) is in COMP and therefore the governing category of its subject can no longer be the minimal S containing it since it has no governor in S (because INFL, the governor of the subject, has moved out of S into COMP). The governing category becomes the matrix S and therefore the embedded subjunctive subject must be disjoint in reference with the matrix subject by condition (B) of the binding theory. Since subjunctives in Hausa display no disjoint reference effect, yet do illustrate the restriction against wh-subjunctives, it seems questionable as to whether these two properties should be directly linked (at least in both directions). This, of course, leaves open the question of why the subjunctive disjoint reference effect exists in Romance, but not in Hausa. We return to this below in section 9.3 in the context of our discussion of the binding theory.

18 It should be noted that the resumptive strategy for relativization in Hausa is rather marginal (whether the resumptive pronoun is null or overt) and, consequently, judgments tend to vary among speakers. In particular, relativization out of embedded questions tends to be slightly worse than relativization out of embedded relatives. I have no idea why this should be the case.

The conclusion reached in the text regarding subjacency in Hausa is consistent with the alternative to bounding node parametrization proposed by Adams (1985) to account for the dichotomy between relativization versus interrogation out of wh-islands in Italian in that it is not necessary to assume that any particular category is not bounding in Hausa. However, the peculiarity of relativization in Hausa does not follow from Adams' system—and probably shouldn't since the availability of a resumptive pronoun relativization strategy seems rather clearly to constitute a separate parameter.

In Adams' system, the level(s) at which a constraint against adjunction to COMP (which is sensitive only to interrogative operators and their traces—as opposed to relative operators and their traces) accounts for the fact that relativization out of an island, but not interrogation, is permissible in languages like Italian. The impossibility of interrogation out of an island is formally tied to the impossibility of non-echo multiple interrogation, as was informally suggested by Rizzi (op. cit.). The facts of (107) and (108), plus the fact that non-echo multiple interrogation in Hausa is fine for most speakers, show that the dichotomy between relativization and other wh-extraction may have another source. In Adams' system, Hausa would necessarily have the same settings for the Condition on COMP Adjunction as English since multiple interrogation is permitted and interrogation out of an island is not. However, unlike English, relativization out of an island is permitted.
It can be noted that the asymmetry between subject and direct object versus indirect object was made particularly clear by the reaction of one language consultant to (11b). She said, "Oh, you mean Gaa saaogon da suka da mutumin da Ali ya saida ma" ("Here's the watch that they know the man that Ali sold to"), switching the gaps so that the element violating subjecacy is no longer the indirect object; rather, it is the direct object.

It should be noted, however, that there are speakers for whom (126a') is marginally acceptable. This is seen not only in the embedded clause of declarative sentences, but in conditional sentences and, in wh-structures, in clauses embedded under verbs of the saa-class as well. We return to this below.

A natural question arises from this discussion. Why should relative marking exist? Or, in the terms presented here, why is INFL marked for [+ definite] in languages like Hausa, but not in languages like English? One might reply by posing a question which, in the optique of our discussion here, it related: why do some languages have indefinite and definite articles (e.g. English), while other languages do not (e.g. Chinese, Japanese, Korean, Russian, Classical Latin, etc.)?

Much of the wh-marking data discussed here was collected in Kano, Nigeria during the summer of 1984 in collaboration with Tony Davis. I thank both him and the other participants in the "Bayero University Linguistics Circle" (where a preliminary version of this work was presented) for their helpful comments and suggestions.

Another environment which triggers relative aspect marking in other languages having the relative/nonrelative distinction is negation. This is the case, for example, in Kanakuru (Newman 1974) and in More (Hafk et al 1986). In Hausa, it is less obvious whether negation triggers relative marking since the negative form represents yet a third INFL form in the completive and the continuous. The negative form corresponding to SUN/SUKA is BA SU ... BA, for example. A test for whether the negative INFL is relative or nonrelative is to check the status of a dependent nonnegative INFL, which by subsequence should be identical for the feature [+definite]. Abraham (1959:142) reports that either form may occur in this context. Schuh (1985b), citing Abraham's example (i), says that use of the nonrelative form is more common—i.e., (ia) is more frequently heard than (ib). (It can be noted in this regard that Hyman and Watters (1984) report that Haya, and other languages, use the nonrelative form with all negative forms.)

(1) a. In BA KU zoo KUN yi a'kii ba if NEG 2p com2p COMPL do work NEG 'If you people do not come and work'

213
b. In BA KU zoo KUKA yi ailii ba
   if NEG2p come 2pREL do work NEG
   ‘If you people do not come and work’

I have found speakers who not only prefer the relative in the
second of two negative past events, but rejects the nonrelative in this
context:

(ii) a. Yaaraa BA SU tafi daaju SUKA/+SUN saaci mangwaarlo ba
   children NEG3p go bush 3prel 3pCOMPL steal mango NEG
   ‘the children didn’t go out and steal mangoes’

b. Mutaanee da BA SU tafi SUKA/+SUN sayi hautsu zaa su shaa
   people that NEG3p go 3pREL 3p buy millet FUT3p drink
   welahaa
   suffering
   ‘The people that didn’t go and buy millet will suffer’

More study is needed to understand what is going on here. Is this a
genuine dialectal difference, for example? It is my "Northern"
speakers who give the judgements reported in (ii). It is tempting to
speculate, given the analysis developed here, that the difference may
be attributed to whether the negative morpheme BA appears in [SPEC,CP]
or remains in INFL, as schematized in (iii), the former triggering
relative marking and the latter not, though, once again, independent
support would clearly have to be sought.

(iii) a. 
   \[
   \begin{array}{c}
   \text{SPEC} \\
   \text{ba} \\
   [+\text{focal}] \\
   \text{C}
   \end{array} \\
   \begin{array}{c}
   \text{C’} \\
   \text{I}
   \end{array}
   \]

b. 
   \[
   \begin{array}{c}
   \text{SPEC} \\
   \text{ba} \\
   \text{TNS} \\
   [-\text{definite}]
   \end{array} \\
   \begin{array}{c}
   \text{C’} \\
   \text{I}
   \end{array}
   \]

24 The indirect object marker ma/wa may be stranded, but there is
strong evidence that this preposition, which is always adjacent to the
verb, is part of the verb. On this, and other cases of apparent
stranding in Hausa, see Tuller (1984) and discussion in section 4 of
chapter 2 and section 3 of chapter 3.

25 Except that the verbal noun form of the verb is used with a
"continuous" INFL, as was seen in detail in section 5.2 above:
26 Also arguing for this conclusion is the fact that there is no "tone dependency" between INFL and the V. The tone of clitics in Hausa often is polar to the tone of the adjacent syllable of its host: *nana san ght* 'I know him' vs. *nana kaamåa shi* 'I caught him'.

27 These constructions were mistakenly identified as instances of free subject inversion in Tuller (1982:fn.1).

28 Picallo's (1984) suggestion that non-subjunctive INFL is a proper governor will not solve the problem posed by Hausa since subject extraction out of complementizer headed subjunctive clauses is as acceptable as that out of indicative ones:

(i) Waaj kakee soo wai tî ya zoo gidanmu who 2sml want that 3smSUB come house-our
"Who do you want that come to our house?"

Likewise, an analysis of the type proposed by Shlonsky (1985) for Hebrew *se* 'that', which attributes lack of that-trace effects to the clitic nature of *se*, cannot be extended to Hausa. Shlonsky argues that *se* cliticizes onto the following word in the syntax, leaving the COMP empty (assuming the cliticization does not leave a trace), thereby enabling the trace in COMP of a moved element to properly govern its extraction site in subject position. Hausa complementizers do not have any clitic properties. They are not bound morphemes, and, in fact, *ceewaa* 'that' is also the form of the verbal noun of 'say' and hence occurs as an independent word in other contexts as well. And there is no independent syntactic evidence which suggests that Hausa complementizers are not in COMP. In some dialects of Hebrew *se* may occur adjacent to an overt wh-operator: this is never possible in Hausa. Furthermore, if it is assumed that complementizers cliticize onto a following lexical category, then there is direct evidence that this cannot be the case in Hausa. As mentioned earlier, Hausa has a set of emphatic particles which have the following distributional property: they may occur anywhere except between a clitic and its host. We might expect, then, that if complementizers cliticize to a following lexical category, an emphatic particle may never occur immediately after a complementizer. That this is in fact possible, as (11) (from Bagari 1972:40) illustrates, strikes yet another blow against a possible explanation of that-trace violations in Hausa in terms of the clitic nature of its complementizers.

(11) Yaa kamaata mu qa ceewaa lallal haka din baat ta faaru ba
3sm be-necess 1sp see that PRT thus this NEG 3sf happen NEG
"We must see for certain that this does not happen"
The quantifier facts of Hausa do not seem to allow for further tests of LF ECP effects. The scope of universal quantifier phrases consisting of koowaa (elsewhere the complementizer 'if/whether') plus a wh-phrase is restricted to the minimal S containing them. Thus, when occurring with negation the negative element must occur in the same clause as the QP in order for the universal QP to have scope over it:

(i) Ban qa koowaa/koomee ba
    NEG-1s see one thing NEG 'I didn’t see anyone/anything'

(ii) Naa qa koowaa/koomee
     3s see one thing
     'I saw everyone/everything'

(iii) Kaa qa koowaa/koomee?
     2sm see one thing
     'Did you see everyone/everything?'

(iv) a. Ban cee wai sun ga koowaa ba
    NEG-1s say that 3p see one NEG
    'I didn’t say that they saw everyone/**anyone'

     b. Ban cee wai sun ga koomee ba
    NEG-1s say that 3p see thing NEG
    'I didn’t say that they saw everything/**anything'

(v) a. Ban cee wai koowaa yaa zoo ba
    NEG-1s say that one 3sm come NEG
    'I didn’t say that everyone/**anyone came'

     b. Ban cee wai koomee yanaa baa shi tsooroo baa
    NEG-1s say that thing 3sm give him fear NEG
    'I didn’t say that everything/**anything scares him'

(This is incidentally also true for many French speakers with regard to ne...personne.)

These facts are consistent with the ECP, but do not show that it is at work because the expected subject/object asymmetry is not present since neither subjects nor objects may take wide scope.

Other quantifiers may have wide scope and these may occur as embedded subjects. However, these cases could be argued to involve quantifiers being treated quasi-referentially (i.e. as names, and hence not subject to QR), as in English--cf. Chomsky (1981:235). Thus, the following sentences are ambiguous.

216
(vi) a. Duk 'yan makarantaa sun sani wai wasu maalaamai sun faaama
   all students 3p know that some teachers 3p quit
   'All students know that some teachers quit'

   b. Koowanee yaaroo yanaa son wai maalaamii uku su faaama
   each child 3sm want that teacher three 3p quit
   'Each child wants three teachers to quit'

30 Pied-piping is not an option for objects of nouns—cf. discussion above in section 5.2.2.

31 I follow here Koopman's (1982) analysis of Vata. There are two rather important differences between Vata and Hausa, however. One is that resumptive pronouns may be null in Hausa, while in Vata there is always some phonological material. And, a point to which we return below, resumptive pronouns must always obey subcency in Vata, whereas in Hausa, this is not the case, since, we are arguing, it has two strategies: one like that in Vata, plus a resumptive relativization strategy.

If the analysis given in Georgopoulos (1985) for Paluan is correct, then we might want to adopt trace spell-out rather than S-structure $A'$-chain coindexation. Georgopoulos argues that Paluan has no syntactic 'Move-$\alpha$', but rather a rule coindexing resumptive pronouns with $A'$-positions, which must apply at S-structure because of morphological agreement which is triggered in these structures, but not in structures containing wh-in situ. Crucially, subcency is not obeyed in the resumptive pronoun constructions in Paluan. If we maintain that subcency is a condition solely on 'Move-$\alpha$' (as is common in the literature), then we can say that Paluan has S-structure $A'$-indexing, while Hausa has 'Move-$\alpha$' plus S-structure spell-out of traces. The spell-out rule, like all rules would be optional; if it does not apply, the indexed empty category is interpreted either as a trace, in which case it is ruled out by the ECP in the relevant positions, or as a pro (an empty pronominal), if it can be identified.

32 (212b) in Hausa with a null complementizer has another reading, which is grammatical, when pronounced as two separate sentences: 'They wanted to kill us. It scared us.' (This is simply because the third person singular INFL yaa may be taken to be either the INFL of the sentential subject or the INFL of an empty pronoun subject of a second sentence.)

33 The alternative approach to NP-internal binding theory facts developed in Bouchard (1984) seems to run into problems when the Hausa data in the text are considered. Bouchard assumes that NP, and all other maximal projections (S is taken to be a maximal projection of V) define opaque domains. This correctly predicts:
(i) a. They read [np their books]
   b. *They read [np themselves’ books]

Each other, Bouchard argues, is a semantic anaphor which is connected to its antecedent by an LF rule which moves each to the antecedent (cf. Belletti (1980)). Not being a syntactic anaphor, it is not subject to the binding theory and thus (iia,b) are permitted.

(ii) a. They read [np each other’s books]
    b. They saw [np pictures of each other]

Finally, it is argued that morphological reflexives which do occur in opaque domains, as in (iii), are “false anaphors” and that, syntactically, they behave like pronouns.

(iii) They saw [np pictures of themselves]

The problem Hausa poses for this analysis is that the equivalent of (iib) is ungrammatical even though it has the structure of (iii). What would prevent the reflexive form from being interpreted as a “false anaphor” and (incorrectly) admitted as grammatical?

As A. Grosu (p.c.) points out, it may also be that Hausa simply has a lexical gap in that no verb or other predicate in the language allows for S’-deletion. S’-deletion is generally assumed in raising in order for the subject trace to be properly governed by the matrix predicate:

(i) Alį seems [s’ [g tį to be 1ill]]

Thus, the examples in (ii) and (iii) are given (cf. Chomsky (1981)) to illustrate the minimal difference between an S’-deletion predicate and a non-S’-deletion predicate:

(ii) a. It is likely that John will leave
    b. John is likely to leave

(iii) a. It is probable that John will leave
    b. *John is probable to leave

Notice that the difference between likely and probable could also be that while the former takes a θ’-subject, the latter assigns a propositional subject θ-role (and has ’it’-extraposition’). The raising difference follows. Thus, it may be that S’-deletion as a lexical property can be dispensed with—cf. Kayne (1984) on this.

In any event, it seems to me that it is a worthy cause to search for principled reasons for “lexical gaps”, for the familiar reasons: such a move allows for concrete predictions to be made, and, by lessening the role of idiosyncratic information, reduces the burden
placed on the language learner.

35 One non-copular raising case is cited by McConvell which comes from a newspaper headline:

(i) Abuubuwan da suka kamaataa a yii
    things-the REL 3p be-necessary indef do
    'The things that have to be done'

(i) is completely rejected by native speakers I've consulted. And it can be noted that the newspaper in question, Gaskiya Ta Fi Kwabo, is known for its stilted speech and literal translations from English--so much so that there is a word in Hausa for the kind of language found in its pages: gaskiyanci 'Gaskiyaese'. (i) as a raising structure would be excluded by the binding theory in any language whether or not the embedded verb is infinitival since the NP-trace in direct object position is not bound within the embedded clause, its governing category, as in the English "the things that are necessary to do" (cf. also "John seems for Mary to love t1"). (i) is apparently a direct translation of English "the things that have to be done", where the indefinite INFL translates the English passive, as is typical, and have to is rendered as kamaataa.

36 Some of my consultants (the Niger Hausas, to be specific) accept, and even prefer, the copula with a PP complement, if a permanent state is being expressed:

(i) Kanoo a Rasen Naajeeriya nee
    Kano at land-of Nigeria COP-m
    'Kano is in Nigeria'

(ii)?*Kanoo tanaa Naajeeriya
    3sFCONT Nigeria
    'Kano is in Nigeria'

Judgements by Standard Hausa speakers on these sentences are just the opposite. Yet, all speakers agree with the judgements marked in (iii):

(iii) a. *Aisha (a) Kanoo cee
    A at Kano COP-f
    'Aisha is in Kano'

b. Aisha tanaa Kanoo
    A 3sFCONT K
    'Aisha is in Kano'

Northern speakers also tended to accept examples like that in (iv), from Abraham (1959), which again involves a locative predicate with nee.
(iv) Gidansu a wani kwaari mai faadii nee	house-their in a valley wide COP
'Their house is in a wide valley'

It's not clear exactly what to make of this data, though it is
reminiscent of a temporary/permanent state distinction found in copulas
in other languages (e.g. Spanish ser/estar).

37 Morphologically, the questioned wh-predicates wanne nee and
meenee nee appear to consist of the fronted predicate (waal/nee 'who/
what' + nee 'COP') plus the focus-marker nee. The focus-marker nee/cee
may appear on any fronted focussed or questioned constituent in all
kinds of clauses.

(i) a. Inaa (nee) kuka tafi? Kanoo (nee) muka tafi
where FOC 2p go K FOC 1p go
'Where did you go? We went to KANO'

b. Waal(nee nee) zai zoo? Aisha (cee) zaa ta zoo
who COP FOC 3sm come A FOC 3sf come
'Who is coming? AISHA is coming'

The seeming repetition of nee and cee might be taken to be support for
the idea that what once was a focus-marker (everywhere) was
reinterpreted at some point as an INFL where it occurs in copular
constructions. Notice that the non-reduplicative form does in fact
exist, though with a restricted meaning:

(ii) a. Waanee nii?
who me
'But who am I?'

b. Meenee wannan?
what this
'And what is that?!

38 Other prepositions in Spanish allow a null complement. Encima,
debao, cerca, lejos, alrededor, dentro, fuera, entrante, delante, and
detrás are listed in Plann (1986). French also has a class of "orphan
recent discussion) and the equivalent of Spanish con 'with' is one.
Since both overt and null pronouns may occur as object of avec, one
might expect to find OPC effects. In fact, at least in French, null
prepositional objects cannot be coreferential (at all) with a
quantifier antecedent in the same sentence and (thus?) an overt pronoun
may have either a bound pronoun or group reading.

(i) Beaucoup d'étudiantes ti pensent que le professeur veut sortir
avec elles / *proi
'Many students think that the professor wants to go out with
(them)'

220
(ii) Beaucoup de grands restaurants n’aiment pas qu’on fasse des critiques sur eux / *dessus pro.
’Many major restaurants don’t like people to make criticisms of (them)’

These facts, we will argue in chapter 3, are related to the proper identification of “discourse” pro.

39 The full set of independent pronouns is given in (i).

(i) sg. pl.
1 nii muu
2 kaa (m) kuu
    kee (f)
3 shii (m) suu
    ita (f)

40 This is a common restriction in languages having left dislocation structures (cf. Emonds 1970, Chomsky 1977). It is true, for example, in Standard Arabic, as Ayoub (1981), from whom the examples below are taken, notes:

(i) *maaâa zaydun fafala
    what Z-NOM did
    ‘What, Zaydun, he did?’

(ii) *maan l-kitaabu qara?a-hu
    who the-book read-it
    ‘Who, the book, read it?’

As the examples show, the constraint against *wh - left disloc. is true no matter what the grammatical function of the arguments related to the dislocated element is. In Hausa, it is impossible to get an ungrammatical equivalent of (i) because word order is SVO in Hausa (and not VSO, as in Standard Arabic) and resumptive subject pronouns may be null. Thus, the subject argument can always be analyzed as being in subject position (and not TOP).

(iii) Mee Ali (kuwa) ya yii?
    what A PRT 3s do
    ‘What did Ali do?’

Adverbial particles (cf. kuwa in (iii)) can independently occur between the subject and the INFL node, and thus don’t force a left dislocated structure either, as the example in (iv) illustrates since the subject is indefinite and thus cannot be a left dislocated element (as (v) illustrates):

221
(iv) Wàdansu yaaràa (kuwa) sun tafi daa'ìi
    some children PRT 3p go bush
    'Some kids went to the bush'

(v) Hì Wàdansu yaaràa, mun gan su
    some children lp see them
    'Some kids, we saw them'

41 The possible coreference to a matrix object, as in (240b), is
is taken to be a consequence of the structure resulting from
extraposition of the complement S, forced by the Case Resistance
Principle (cf. chapter 2). After extraposition, the matrix object NP
does not c-command the NPs in the adjoined clause, whereas the matrix
subject does. Hence the observed subject/object asymmetry.
CHAPTER TWO: BIJECTIVE RELATIONS

1. Introduction

The idea that many linguistically significant relations are one-to-one in character (i.e., "bijective") has been expressed in various forms by various researchers of human language. This concept has been a focal point of discussion in all areas of grammar. The remainder of this thesis will be centered around syntactic bijective relations, and, in particular, the bijective nature of lexical feature assignment relations, a notion which is developed at some length by Vergnaud (1982). We will use the bijective character of lexical selection as a research strategy to explore in depth certain portions of the syntax of Hausa and other languages.

The structure of our démarche will be as follows: first, we will present bijection as a property of lexical selection, arguing that this is a reasonable and desirable condition to make of UG. The second step is to show that if we assume bijection of lexical selection, then certain types of constructions are of particular theoretical interest. In other words, assuming bijection will be seen to have specific consequences for specific syntactic phenomena. Finally, taking into account these consequences, detailed analyses of the phenomena in question will be developed.

In section 2 of this chapter, we consider the bijective nature of lexical feature assignment relations, motivating attribution of this property to UG (= step one, above) and speculating on how this property is best expressed formally. In section 3, we take up in detail the
lexical feature Case; it is argued that positing Case as a bijective relation may derive Case conflict and the "CRP effects" (Stowell (1981)) and makes interesting predictions about NP-movement structures. Section 4 carries out step two of the outline given in the preceding paragraph. The implications of bijection for particular types of constructions will be examined. As already noted in chapter 1 in connection with $\theta$-Theory, bijection plus the Projection Principle motivates abstract elements and structures. Many such abstract analyses---e.g. the trace theory of movement---have been developed in detail from the perspective of a wide array of languages. Other constructions also presenting surface divergence from bijection have received less wide empirical coverage in the GB literature. Some of these latter configurations will be presented in section 4. A full analysis of two Hausa constructions having configurations of this type (in comparison with various other languages) will be the subject matter of chapters 3 and 4.

2. Lexical Features and Bijection

2.1 Lexical Features and Feature Assignment

To begin our discussion of lexical features and bijection, let us consider what types of information are included in a lexical entry. In other words, what do we know when we know a word? It seems obvious that there must at least be a representation of the idiosyncratic phonological and semantic properties---the form and the meaning. Besides phonological and semantic features, there are also certain syntactic features that seem to be part of knowing a word: these include categorial type ($\ast N$, $\ast V$, etc.), complementation possibilities
(subcategorization), θ-roles of corresponding arguments, Case-features, and phi-features (person, number, and gender). So, if we take the word steal, for example, we might say that knowing steal means knowing at least the following: /stil/, ˈsteɪl, [+V -N], steal has an agent subject and a theme complement, steal takes an NP complement, steal assigns objective Case.

I would like to examine in some detail those lexical properties which are part of syntactic selection—those properties which are in an "assignment" or "checking" relation between a lexical item and its specifier or modifier(s). We will thus be concerned principally with subcategorization, θ-role, and Case requirements. Two questions can be posed by way of organizing our discussion: How are these lexical feature requirements represented for a given lexical item and how are they satisfied?

Adopting traditional formalism for lexical entries, we might represent the syntactic requirements of steal as in (1):

(1) steal:  \[ \begin{array}{c}
\text{\(\rightarrow V\)} \\
\text{\(-N\)} \\
\text{\(+\text{Theme-}\theta\)} \\
\text{\(+\text{Agent } \theta\)} \\
\text{\(+\text{OBJ Case}\)} \\
\text{\(+[\_\_\_\_\_\_\_ \text{NP}]\)} \\
\end{array} \]

(1) immediately poses a problem concerning the relation between subcategorization and (complement) θ-role selection. As was emphasized in chapter 1, section 4, one of the fundamental hypotheses of GB theory is that subcategorization entails θ-marking—that is, a lexical item may select for a complement only if it also assigns a θ-role to this

225
complement. This view limits the types of available lexical entries, which in turn restricts possible rule types (raising to object, for example, is excluded). (1), however, does not appear to reflect this view; as stands, it seems as though subcategorization and complement θ-marking are independent of each other.

Stowell (1981:33) proposes that subcategorization features are linked to a particular θ-role specification on the O-grid of lexical entries. Assuming that the semantic generalizations specifying category type for semantic type are lexical and that lexical entries receive a subcategorization frame only through these rules, then the representation in (1) is not problematic. Subcategorization specifications are, in effect dependent on the presence of a θ-role (which is dependent on selection for a semantic type) in that there can't be a subcategorization frame where there is no corresponding θ-role because of the requirement of the lexical semantic rule governing semantic-categorial correspondences. Pesetsky (1982: chapter 2, section 5) proposes an even stronger dependency. Lexical entries, he suggests, contain no specification for categorial selection at all, this information being derived from lexical selection of a semantic type such as ⟨question⟩, ⟨term⟩, etc. at LF (cf. Grimshaw 1979, 1981). I will assume here that the relation between between θ-selection and subcategorization can be expressed along these lines, though we will continue to use the representation in (1) with the understanding that the presence of the subcategorization frame is dependent in some way on the presence of complement θ-selection.

It might be objected that the representation in (1) still carries
redundancies. The feature [+OBJ Case] appears to be superfluous in
that one could posit an objective Case-assignment rule while assigns
OBJ to an NP which is governed by an [+V -N] category. Alternatively,
OBJ could be simply linked to the complement 8-role. There is reason
to maintain that neither of these alternatives is desirable. That is,
there is reason to believe that Case is an independent lexical feature.
To illustrate this point, consider the French verb obéir 'obey' (which
works the same way as désobéir 'disobey'), discussed in Kayne (1984:
chapter 9). Obéir requires the preposition à before its NP complement:

(2) a. Les enfants ont obéi *(à) Jean
   'The children obeyed Jean'
   b. Les soldats ont désobéi aux / *les ordres.
      'The soldiers disobeyed the orders'

Yet, passivization of the bare NP complement is well-formed, as is
shown by (3), and this despite the fact that indirect objects normally
do not passivize in French, as is shown in (4).

(3) Jean a été obéi par les enfants
(4) *Marie a été donné un livre par Jean

(2) and (3) can be simply accounted for by assuming that obéir takes an
NP complement, but has no accusative Case feature. (2) therefore
requires insertion of the "dummy" Case-marker à. If À-Insertion does
not apply, the structure is ruled out by the Case filter, unless it is
a passive structure and the NP-complement moves to the subject position
where it receives nominative Case. Kayne gives supporting evidence for
the idea that obéir does not assign Case. Under the assumption that

227
the (a) sentences below are grammatical because the verb (in its infinitival or participial form) is responsible for Case-assignment, the ungrammaticality of the (b) examples with (dès)obéir follows if this verb is never a Case-assigner.

(5) a. Il a été mangé beaucoup de légumes 'There were eaten a lot of vegetables'
    b. *Il a été désobéi beaucoup d'ordres 'There were disobeyed a lot of orders'

(6) a. Marie fera photographier Jean par ses enfants 'Mary will make photograph John by his children'
    b. *Marie fera obéir Jean par ses enfants

(7) a. Jean est facile à photographier 'John is easy to photograph'
    b. *Jean est facile à obéir

Another illustration of the independence of categorial selection and Case-assignment is given in Pesetsky (1982) where it is suggested that this is at the core of the distinction between verbs like wonder and verbs like ask. Both of these verbs semantically select for <Question>, yet while ask may take both a clausal question and a "concealed question", wonder may take only the former. Pesetsky proposes that the "Canonical Structural Relation" (i.e. the particular generalization that determines category type from lexical semantics—cf. Grimshaw (1981)) of <Question> is \( \text{NP/S'} \). This explains why it is that there are no verbs which subcategorize only for a concealed question (i.e. \( \text{<Question> = NP} \)). The difference between wonder and ask is that the latter is a Case-assigner while the former is not.

Although cases like obéir and wonder demonstrate that the property
of assigning Case to a complement is not an automatic consequence of having a complement, such cases clearly are the exception. By and large, transitive verbs do have the property of assigning Case to their objects. Insofar as lexical entries are viewed as containing only idiosyncratic information, one might suggest that transitive verbs generally have no objective Case feature in their lexical entry, this feature appearing only as the result of a general rule. Verbs that idiosyncratically assign a non-objective Case to their NP complement would have that Case-feature marked in their lexical entry and thus would not be subject to the general rule. How then would verbs which idiosyncratically do not assign Case at all (obéir, wonder, etc.) be exempt from undergoing such a general rule? Apparently they would have to be marked in some way as being [-Case]. However, this raises yet another and more difficult question: how is such information to be learned? We seem to be confronted with the problem of postulating acquisition of a property on the basis of negative evidence—i.e. a verb V is assigned the feature [-Case] if V may not take a bare NP complement. Given the unlikelihood of children using negative evidence in the acquisition process (cf. discussion in chapter 1), this account of Case-marking is problematic.

An account which does not suffer from this defect would be one where the child assumes that a verb V has an objective Case feature if V appears with a bare NP complement. In other words, if (and only if) the child hears 'V NP' will she assume that V has the feature [OBJ Case]. Obéir would perhaps first be analyzed as taking a PP complement (headed by A 'to') and only after passives are attended to would the
child conclude that *obèir* in fact takes an NP complement with _a_ being the result of dummy Case-insertion. At no point does the child have data which suggests that *obèir* may assign Case.

Consider now the case of *wonder*, assuming semantic selection as in Grimshaw (op. cit.) and Pesetsky (op. cit.). The child learns that *wonder* selects for <Question>. The Canonical Structural Relation of <Question> is (NP/S'). However, a verb V is not assumed to have an objective Case feature unless data of the type 'V NP' is available. No such data exists for V = *wonder* and therefore *wonder* never is assumed to have an objective Case feature. Since English has no dummy Case-insertion inside VP, *wonder* may never appear with an NP complement.

I therefore conclude that the generalization between category-selection (cf an NP complement) and objective Case-assignment is best captured as a principle of language acquisition (cf. Pesetsky (op. cit.)) whereby verbs appearing with bare NP complements are assumed to assign objective Case (i.e., to have an objective Case feature in their lexical entry).

It is also not an idiosyncratic property of *steal* that it is its complement NP which bears the Theme 0-role and its subject which bears the 0-role Agent. The predictability of the association between thematic relations and grammatical relations has of course not gone unnoticed. Anderson (1977), for example, proposes rules which indicate the canonical grammatical relation(s) of a particular 0-role. The "Theme-Rule" states that intransitive subject and transitive direct objects are Themes and the "Agent-Rule" that subjects of non-passive verbs are Agents, etc. Pesetsky (1982:58) suggests that once the 0-
array of a particular predicate is determined, generalizations of this sort indicate which θ-role is assigned to the external argument and which to the internal argument. I will also assume that thematic generalizations of this type are expressed in the grammar, though I will not propose a specific mechanism. What will be important for us here is that the lexical entry of a predicate specifies at some point prior to D-structure the semantic roles of its arguments; these θ-roles are then associated with a particular grammatical position according to θ-generalizations of the type just mentioned. The representation of lexical selection, then, consists of specification of the θ-roles of the arguments of the lexical item and indication of the Case-assigning properties of the lexical item.

Turning now to the second question posed above, let us consider how these requirements are fulfilled. In other words, how are θ- and Case specifications assigned or checked in a sentence? We can begin answering this question by determining first what elements must bear these features. NPs clearly bear θ-roles and it seems as though gerund clauses and 3’s do as well. Thus, in each of (8) and (9), it can be said that the underlined material bears the complement θ-role.

(8) a. John hates over-cooked peas
    b. John hates eating peas
    c. John hates to eat peas

(9) a. Mary said nothing
    b. Mary said that John hates peas

Furthermore, it is the maximal projection in each case which bears the θ-role. It makes no sense to say that the adjective overcooked and the noun peas each contains the feature [+Theme-θ]. Nor does it make sense
to say that it is only the head of the maximal projection—*pens* in (8a), *eating* in (8b), etc.—which bears the 8-role. Rather, the element corresponding to the 8-role in question is the entire maximal projection. I conclude that 8-roles do not "drip".

Adjectives generally are unable to bear a 8-role. Thus, it seems impossible to find examples like those in (10) where the underlined adjective may satisfy the 8-requirements of a predicate.

(10) a. *John hates over-cooked*
    b. *Tired overcame him.*

And, when PP "arguments" are examined, it seems clear that it is not the PP itself which bears a 8-role, but the NP object of the preposition, as is suggested by Borer. Thus, in (11a), the goal of the predicate is *Mary* and not to *Mary* and the source 8-role in (11b) is the CIA and not from the CIA. Likewise, the agent in (11c) is *Susan* and not by *Susan*.

(11) a. John gave a book to *Mary*
    b. John received a phone call from the CIA
    c. This book was written by *Susan*

It appears then that argument 8-roles must be borne by [+N,-V] categories—i.e. NPs, gerund phrases, and clauses. In other words, arguments must be referential in some way. Notice that this is not true of non-argument 8-roles. Adverbial 8-roles such as location-8, direction-8, time-8, and manner-8 can be borne by appropriate NPs and S's, as well as PPs and AdvPs, as is exemplified in (12) where the manner 8-role is expressed by the entire PP, AdvP, S' or NP maximal

232
projection.

(12) John was talking \{ in a strange fashion \}
     \{ very rapidly \}
     \{ when we walked in \}
     \{ that way all night \}

Copular constructions, whether verbal (as in (13)) or nonverbal (as in (14)), also seem to allow non-NPs to bear θ-roles:

(13) a. John is \{ in Colorado \}
     \{ angry \}
  b. Under the bed is a good hiding place
  c. Yellow is the color of the corn

(14) a. John seems \{ to angry \}
  b. Under the bed looks like \{ to a good hiding place \}
  c. I consider \{ under the bed an excellent hiding place \}
  d. I consider \{ John unworthy of his title \}

Putting aside copular constructions for the moment and restricting our attention to argument θ-roles, our answer to what bears a θ-role is "any maximal projection bearing the features \[+N,-V]\". This proposal is similar to a condition proposed by Kayne (1982) prohibiting projections of \[+V\] from being arguments (and cf. also Koopman 1984:149). I am suggesting that it be generalized so that only \[+N,-V\] categories may be arguments.

Now let us ask the same question for the feature [Case]. There is no motivation for any semantic restriction on what type of categories may bear Case, as seems normal given that Case is a morphological and not a semantic feature. We assume therefore that in principle any category may bear Case. (We will see in section 3 that in fact Case is not freely borne by any category, due to other factors.) There is reason to suggest, however, that Case does not remain on the maximal
projection it is assigned to, but rather "drips" or "percolates down" to the head, potentially showing up in the specifier and in the modifier. Case, though largely abstract in some languages, is morphologically present in many languages, and, like phi-features, it is often marked on all elements which specify or modify a noun. In Standard Arabic, for example, adjectives agree in Case with the noun they modify, as the following examples illustrate:

(15) a. kataba fi kita:bin jadi:dan
    wrote-he in book-GEN new-GEN
    'He wrote in a new book'

    b. kataba kita:ban jadi:dan
    wrote-he book-ACC new-ACC
    'He wrote a new book'

We assume therefore that the Case assigned to a maximal projection automatically drips down to the head of that projection. Agreement rules may require it to spread to SPEC and modifier positions (or check that it has dripped to these as well).

Summarizing, we have suggested that (argument) θ-roles are borne only by [+N,-V] categories, whereas Case may be borne by any category. And whereas Case features automatically percolate down to the head, θ-role features remain on maximal projections.

We turn now to how it is that these features come to appear on a maximal projection in the first place. Taking up again our discussion from chapter 1, we may begin by saying that θ-roles may be assigned either directly (under government), as is the case for a direct object, or indirectly or compositionally, as is the case for subject. The need for the latter was shown to be particularly evident in examples like
John broke his arm versus John broke the window where the nature of the subject θ-role is dependent on the semantics of the verb plus its complement. It is hypothesized therefore that a θ-role is constructed compositionally with the semantic features of the verb and the complement, and then assigned to the subject. It might be suggested that since modals located in INFL and adverbs may contribute to the determination of the subject θ-role (cf. Zubizarreta (1982)), that the subject θ-role is assigned by the predicate (= I') after the various semantic features have percolated to this node to form a θ-role.

In view of our conclusion above about which elements may bear an argument θ-role, another case of compositional θ-role assignment presents itself. Since the θ-role corresponding to a PP argument is borne by the [NP,PP] and since prepositions themselves assign θ-roles as well, it would seem that the [NP,PP] gets its θ-role compositionally from the verb selecting for PP and from its P governor, as originally suggested by H. Borer (cited in Stowell 1981). Compositional assignment allows the semantic feature of the verb to be incorporated with the semantic feature of the preposition to create a θ-role which is then assigned to [NP,PP]. Presumably there are constraints on which semantic features can be combined in this way to form a θ-role. (In many cases, the semantic features seem to be identical—e.g., to has a goal feature as does a dative verb such as give.)

Both "modes" of θ-role assignment involve transfer of a θ-role (which can be viewed as a bundle of semantic features, as was suggested in chapter 1) to a [+N,-V] under government based on strict c-command (= α c-commands β iff the first branching node dominating α also
dominates $\emptyset$, as in Chomsky (1981:37). The difference between the two lies only in how the $\theta$-role is formed and what may transfer the $\theta$-role. Direct $\theta$-role assignment involves a $\theta$-role which is a property of a single $X^0$ governor and which is transferred by the $X^0$ to a $\gamma_{\text{max}}$. Indirect $\theta$-role marking is the transfer of a compositionally formed $\theta$-role by a $X^0$ governor or a predicate ($I'$) to a $\gamma_{\text{max}}$.

Notice that verbs may also subcategorize for adjunct $\theta$-roles. This is how one might analyze the locative which must occur with put and the manner adverbial which must occur with the verbs word or phrase. Examples from Larson (1985:399) illustrate:

(16) a. Peter worded/phrased the letter

\[
\begin{array}{c}
*0 \\
\{ \text{that way} \\
\text{tactlessly} \\
\text{in a thoughtful manner} \}
\end{array}
\]

b. Peter put the letter

\[
\begin{array}{c}
*0 \\
\{ \text{someplace} \\
\text{in the mailbox} \\
\text{where Max would find it} \}
\end{array}
\]

We will entertain the hypothesis that a verb like put does not assign a locative $\theta$-role (and thus does not have this feature in its lexical entry); rather, it requires the presence of a location-\theta and similarly for the manner $\theta$-role of verbs like word:

(17) a. put

\[
\begin{array}{c}
+V,-N \\
+[\_NP] \\
+\text{Theme-}$\emptyset$ \\
+[\_XP] \\
\_ \text{Loc-}$\emptyset$
\end{array}
\]

b. word

\[
\begin{array}{c}
+V,-N \\
+[\_NP] \\
+\text{Theme-}$\emptyset$ \\
+[\_XP] \\
\_ \text{Man-}$\emptyset$
\end{array}
\]

Adverbial complements differ from the argument complements of these
verbs in that the adverbial complements bear θ-roles by virtue of
their adverbial function and not because of the semantics of the verb.
They may occur elsewhere with exactly the same semantic role.
Adverbial θ-roles, it can be assumed, are assigned freely to categories
whose heads inherently bear the appropriate semantic feature (manner,
place, etc.). The bare-NP adverbs in (16) bear both θ-role and Case-
features as a result of their adverbial function and not because of
assignment from the verb. That way, tactlessly, and in a thoughtful
manner bear inherent manner θ-roles and someplace, in the mailbox and
where Max would find it bear are inherently locative. Phrases such as
the letter, on the other hand, have no independent semantic role. In
these cases, the semantics of the verb is essential to the semantic
role of the complement, unlike adverbial θ-roles which receive their θ-
roles independently and which are merely required to be present by the
verb.

Consider now how Case is assigned. It may also be directly
assigned under strict c-command. Accusative or objective Case is
transferred to a direct object from its verb in this way. We will call
this “canonical structural Case assignment”. Another mode of
structural Case assignment involves assignment of a Case-feature not
originating on a X0 governor to an NP which is in a particular
structural configuration. An example of this is genitive Case
assignment in English which appears in the context [np _ N’] (cf.
Emonds (1970)). This, we shall call “configurational structural Case
assignment”. Structural Case, then, is a function of some sort of
formal configuration. The required formal configuration can be met in
different ways: objective Case, for example, can be assigned to the [NP,VP] and in certain circumstances to an embedded [NP,S] or to the subject of a small clause.

(18) a. John stole the peas
    b. I believe [John to be crazy]
    c. I consider [John a fool]

Prepositions in English also seem to assign Case structurally (cf. Kayne, 1984). They may assign Case to NP complements and, in other circumstances, to [NP,S]:

(19) a. John baked a cake for Mary
    b. For [John to leave now] would be a disaster

In many other languages, however, prepositions do not have this freedom. Their Case assigning property seems to be tied to their $\theta$-marking function in that they may assign Case only to elements to which they assign a $\theta$-role. I will refer to this type of Case assignment, which is possible for verbs as well, as "oblique Case assignment". (It is also referred to as inherent Case assignment in the literature.) I shall take oblique Case marking to be represented in the lexical entry of a preposition (or a verb) as in (20a), with the Case feature literally linked to the $\theta$-role feature (cf. Levin and Simpson (1981)). This can be contrasted with (20b) where $\theta$-role and Case features are independent.

(20) a. A: $\begin{array}{c} -N,-V \\ +\text{Goal-}\theta \end{array}$
    b. to: $\begin{array}{c} -N,-V \\ +\text{OBJ} \\ +\text{Goal-}\theta \end{array}$

Yet another way Case features may appear on an XP is through a
rule of default Case marking (cf. Andrews 1976). Ayoub (1981) argues that $A'$-positions in Arabic receive default nominative Case. (Cf. also Borer and Tuller (1985) where this is discussed and extended.) An example in English where this seems justified is that discussed in Larson (op. cit.) whereby certain adverbial NPs, which are termed "bare-NP adverbs", are assumed to receive lexically-triggered default (oblique) Case. The essential property of default Case marking, as the term implies, is that it applies only where no other (structural) Case is available.

In our discussion thus far it has been tacitly assumed that an NP receives a Case feature as a result of one of the modes of Case assignment outlined above. This is not necessarily the only way the Case relation is expressed. In languages having morphological Case, it may be that a noun or an adjective is already marked for Case as a lexical property. (This might be required in the case of a noun or adjective with irregular marking for a particular Case, for example.) Assuming that inherent lexical features percolate to their maximal projection, Case "assignment" in this case amounts to checking that the YP with Case feature $F$ is strictly c-commanded by $X^0$ with a Case-feature $F$. Case-checking can be formalized as the merger of the Case-feature of $X^0$ with that inherent on YP. In order for these features to merge, they must be identical; this constitutes a proper "checking" procedure.

Summarizing our discussion of lexical selection, it has been proposed that verbs and prepositions are lexically marked with $\theta$- and Case features which are transferred to a maximal projection c-commanded
by the verb or preposition in question. This represents the general case for transfer of both Case and \( \theta \)-role features. That is, in the absence of specific rules such as compositional \( \theta \)-marking or default Case marking, this is the mode of assignment/matching of Case and \( \theta \)-features.

The strict c-command restriction is particularly well exemplified for Case by discussion of genitive Case assignment in Hebrew in Borer (1984), from which the examples and structures below are taken. Unlike English, nouns in Hebrew (and other Semitic languages such as Arabic) appear to be Case assigners. A noun in English does not assign Case to its NP complement; \( of \)-insertion is required in order for the complement to be Case-marked; e.g., the handle *(of)* the door. In Hebrew, however, a complement to N (no matter what its \( \theta \)-role) does not require \( \text{sel} \)-insertion (the Hebrew equivalent of \( of \)-insertion) as long as it is strictly c-commanded by N. Thus the sentence in (21a), which has the structure in (21b), is acceptable in Hebrew.

\[(21)\]
\[
\text{a. ceva yadit ha-delet}
\]
\[\text{color handle the-door}\]
\[\text{ 'the color of the handle of the door'}\]
\[
b. \quad \begin{array}{c}
\text{NP} \\
\hline \\
\text{N'} \\
\hline \\
\text{N} \\
\hline \\
\text{ceva} \\
\hline \\
\text{NP} \\
\hline \\
\text{N'} \\
\hline \\
\text{N} \\
\hline \\
\text{yadit} \\
\hline \\
\text{NP} \\
\hline \\
\text{ha-delet} \\
\end{array}
\]

If an adjectival modifier or a determiner is added to N, \( \text{sel} \)-insertion becomes obligatory since the first branching node dominating N no
longer dominates the NP complement. This state of affairs is exemplified by (22) and (23).

(22) a. *ceva yadit yafa ha-delet
    beautiful
    ‘the color of the beautiful handle of the door’

    b. 
       \[ \text{NP} \\
       \quad \text{N'} \\
       \quad \text{N} \text{ ceva} \\
       \text{N'} \text{AP} \text{ ha-delet} \\
       \text{N} \text{ yadit} \\
       \text{yafa} \]

    c. ceva yadit yafa šel ha-delet

(23) a. *ceva ha-yadit ha-delet
    b. \[ \text{NP} \text{ [N'} \text{ ceva} \text{ [NP [N'} \text{DET ha} \text{ [N yadit] [NP ha-delet]]]]] \]
    c. ceva ha-yadit šel ha-delet

It seems reasonable to conclude, as Borer does, that Ns in Hebrew assign genitive Case, under strict c-command. (Borer also notes that NP complements in equivalent structures in Standard Arabic, a language with morphological Case, have overt genitive Case.) Borer suggests that this is a property of the genitive Case assignment rule in these languages. I have suggested here that this is in fact the general case for direct Case assignment by a X₀ head. As Kayne (1984) argues, this view of feature assignment (in connection with certain other principles) may derive the effects of the adjacency requirement on Case assignment, a positive move given the centrality of hierarchical notions in syntax and the relative marginality of linear ones. For example, adverbial modification of a verb in English is parallel to
adjectival modification of a noun in Hebrew in that an adverb intervening between a verb and the NP complement it must assign Case to causes unacceptability. Assuming the structure in (24b) for the ungrammatical (24a), the ungrammaticality stems from the fact that V does not c-command NP, exactly as in (22b) above.

(24) a. *John opened quickly the door.
   b. 
      \[ \text{VP} \]
      \[ \text{V'} \]
      \[ \text{V} \]
      \[ \text{AdvP} \]
      \[ \text{the door} \]
      \[ \text{opened} \]
      \[ \text{quickly} \]

   c. John opened the door quickly.
   d. John quickly opened the door.

This case can be compared to a case where the verb has a complement to which it does not assign Case, as in (25). In this situation an intervening adverb does not cause ungrammaticality, as the well-formedness of (25a) affirms, since the NP Mary receives Case from its preposition, and PPs (here, with Mary) do not need Case.

(25) a. John was arguing relentlessly with Mary
   b. John was relentlessly arguing with Mary
   c. John was arguing with Mary relentlessly.

I will assume therefore that direct feature assignment by a $X^0$ head, the general case of lexical feature transfer, requires strict c-command. In the next section, we will explore another aspect of the lexical feature assignment relation---bijection, which will be argued to ultimately be connected to the c-command requirement.

242
2.2 The Bijective Character of Lexical Feature Relations

In our discussion of θ-Theory in chapter 1, we assumed a minimal condition of semantic well-formedness for arguments at LF, the θ-Criterion, which requires arguments to have one and only one θ-role. Given the Projection Principle, which requires lexical properties to be present at all syntactic levels, the θ-Criterion must hold at D-structure and S-structure as well. Notice that the θ-Criterion consists of a prohibition of two situations: that of an argument bearing more than one θ-role and that of an argument bearing no θ-role at all. The latter is parallel to the Case Filter, which applies at PF and which requires all Ns (but not all arguments) to bear Case. And, we have suggested that a noun with more than one Case feature (whether identical or different) also results in ungrammaticality. (This view of Case will be explicitly argued for and developed in detail in section 3; we will assume its correctness here.)

There is another way of looking at the prohibition against a feature-bearer having more than one feature, which I believe has interesting consequences. Consider how a feature-bearer may come to bear more than one feature F. One way is for it to appear in a context in which it has more than one feature-assigner. This is exemplified in (26a-b). In (26a), the A-chain containing the argument John is assigned a θ-role by the matrix verb want and by the embedded predicate. In (26b) the NP John is assigned Case by the preposition for and by AGR of the embedded clause.

(26)  a. *I want Johni [tj to leave]
       b. *We were hoping for [John would come]

243
In each example, a feature-bearer YP has more than one feature \( F \) because YP has more than one feature-assigner related to it.

The other way for a feature-bearer YP to end up with more than one feature of type \( F \) would be in a situation where a single feature-assigner assigns more than one feature to YP. (27a-b) illustrate this situation.

(27) a. *loved John / John loved (‘John loved himself’)  
b. *The lord gave the slave  
   (‘The lord gave the slave to himself’)

It is impossible for John in (27a) to simultaneously bear the patient and agent \( \theta \)-roles of the predicate love. Likewise, it is not possible for the slave in (27b) to be both the theme and the goal of give.

Notice that it is also true that a single feature-assigner may not assign the same feature to more than one element:

(28) *John loved Mary Bill  
    (‘John loved Mary and Bill’)

(28) can be grammatical only if Mary and Bill form a constituent which receives the patient \( \theta \)-role (and objective Case feature); such constituent structure is obligatorily marked in English by a conjunction. Generalizing this prohibition (that a feature-assigner may not assign a feature more than once) to a prohibition of a feature-assigner directly assigning more than one feature (cf. Jaeggli (1982:33) will disallow structures like that in (29) where the predicate would have to directly assign multiple Case and/or \( \theta \)-role features.

244
(29) a. *loved John Mary
    b. *John₁ was loved tᵢ Mary

All of the preceding observations can be put together under a single condition requiring the relation between lexical feature-assigners and bearers of these features to be one-to-one in character: for any given feature that is assigned, there corresponds exactly one feature-assigner and one feature-bearer. For each feature-assigner, there is one feature-bearer, and for each feature-bearer, there is one feature-assigner. It is the bijective nature of lexical feature-assignment relations which can be viewed as being responsible in some way for the obligatory presence of prepositions in structures like that in (29b) and for the phenomenon of compositional θ-role assignment in general. These allow for the one-to-one relation to be respected.

To summarize our discussion thus far, we have suggested that the general case of lexical feature-assignment can be represented as transfer of a feature from an \( X^0 \) to a \( YP \) which it strictly c-commands such that the relation between \( X^0 \) and \( YP \) is bijective. Compositional assignment circumvents a bijection violation in that the lexical feature of \( X^0 \) combines with other lexical features and then is assigned by a category different from \( X^0 \) (I' in the case of subject θ-role assignment and P in the case of θ-role assignment to \( [NP,PP] \)). Thus, in both cases, \( YP \) may have no more than one feature-assigner. The bijection requirement on lexical selection can be summarized as in (30):
(30) Given $\alpha$ which contains a lexical feature of type $F$ and $\beta$ an $\chi_{max}$ bearer of feature $F$, where $\alpha$ transfers $F$ to $\beta$ the relation between $\alpha$ and $\beta$ must be one-to-one in that $\alpha$ may have one and only one $\beta$, $\beta$ may have one and only one $\alpha$, and $\alpha$ may transfer one and only one $F$ to $\beta$.

Once a generalization of the sort expressed by (30) is arrived at, it is important, I believe, to pause and consider the intuitive idea that may be behind it, though this is not always obvious. Thus, for example, the intuitive idea behind the ECP is that of recoverability of "deletion": roughly, there must be something overt which signals the presence of an empty element. The intuitive idea underlying (30) is basically that each argument must be uniquely identified. That is, it must be possible to single out which argument fulfills which semantic relation with which verb/predicate.

Vergnaud, in unpublished work which was circulated in 1979 and which appeared in his 1982 Thèse d'état, develops this intuitive idea in much the same way I have suggested here. He proposes that interpretation of an argument at the level of PF requires identification by a unique Case feature and interpretation of an argument at LF requires identification by a unique $\theta$-role. These requirements can be viewed as following from a single general condition which states that interpretation requires unique characterization (cf. Aoun (1979), who also develops similar ideas). Therefore, the Case Filter, the $\theta$-Criterion, and (30) are all derived in effect. I will assume here that this is essentially correct, exploring in this work the consequences and possible extensions of this supposition and providing additional motivation for inclusion of such a condition in UG.
Under (30), in a language like English, multiple arguments of a given verb are uniquely identified in the following way: the external $\theta$-role is that assigned compositionally by $I'$, the direct $\theta$-role is that assigned directly by $V$, and various indirect $\theta$-roles are identified as those assigned a compositional $\theta$-role by a particular preposition $P$. If a verb could assign more than one feature directly, then how would the arguments bearing these features be distinguished from one another? Linear order is not a notion that seems to need to be appealed to elsewhere in the grammar. Recall that PS rules have been eliminated and that subcategorization frames do not contain any ordering information. And work by Horvath (published in Horvath 1986, and further explored in Stowell 1983, 1985) has quite convincingly argued that the head first/head last parameter of X'-Theory, an ordering notion, can be derived from a setting for government direction (left or right) in a given language. It appears then that grammars do not make use of a primitive notion 'X precedes Y' where X and Y are otherwise structurally indistinguishable.

(30) is conceptually quite close to the "unambiguous paths" notion developed by Kayne (1984:chapter 7). (Indeed something similar to (30) is assumed in work by Kayne.) Kayne proposes that the notion c-command be replaced by a notion which is argued to be more "natural" in that it parallels the standard dominance relation inherent in tree structures. Underlying this proposal is the idea that configurational relations can be viewed as paths in trees from one node to another. C-command, he suggests, can be reduced to a configuration in which there is an unambiguous path from a node $\beta$ to a node $\alpha$ (which c-commands $\beta$).
"Unambiguous path" can be informally defined as in (31).

(31) An unambiguous path is a path in which specification of direction (upward or downward) insures that no choice need be made concerning how to proceed (and doubling back is excluded).

Borrowing Kayne's examples, the path from C to A (i.e. 'CEDA') in (32a) is unambiguous, where as that from C to A in (32b) (i.e. 'CEDBA') is not unambiguous since upon reaching node B, there is a choice between proceeding downward to node A or downward to node F.

(32) a. \[ \begin{array}{c}
   & D \\
  A & E \\
  B & C \\
\end{array} \]

b. \[ \begin{array}{c}
   & D \\
  A & F \\
  B & G \\
  C \\
\end{array} \]

In these examples, 'unambiguous path' overlaps entirely with 'c-command. In (32a) A c-commands C, while in (32b) A does not c-command C because of the intervening branching node B. Where the notion 'unambiguous path' becomes interesting is where it diverges from the notion 'c-command'. Consider the following tree:

c. \[ \begin{array}{c}
   & D \\
  A & B \\
  C \\
\end{array} \]

Now, although A, B, and C each c-commands the other two, none of them is connected to either of the others by an unambiguous path. In each case, there is a choice between two nodes once the node D is reached. So, if 'c-command' is replaced by 'unambiguous path', then wherever the c-command relation must obtain between two elements, n-ary branching, where n is more than two, is excluded. This is reminiscent of the
genitive Case facts in Hebrew. Ternary branching of the sequence 'N AdjP NP' in (22) is not possible because on the one hand there must be an unambiguous path from AdjP to N (= the modification relation) and there must also be an unambiguous path from NP to N (= the genitive Case relation). The "way out" is to either respect the 'N AdjP' relation and have Case appear on NP by another means (šel-insertion) or respect the 'N NP' relation and place the AdjP after the NP complement in a position to modify the entire N' (with unambiguous modification of the head N achieved by agreement--cf. Borer (op. cit.) for details).

The unambiguous path proposal is reminiscent also of (30) in that the same requirement for a unique/unambiguous identification of predicate-argument structure is at the base of both. I will adopt these two conditions here, though I believe that ultimately both of them stem from a deeper principle having to do with proper identification of the terms of predicate-argument structure.

It should be noted before concluding this section that besides direct assignment and compositional assignment, languages may also utilize (inherent) morphological case as a way of uniquely identifying the semantic relations played by the various arguments of a verb/predicate, in which case (30) may be partially circumvented, often resulting in free(r) work order. And, of course, there may be "mixed systems".

The following section takes up the promissory note given in chapter 1 and at various points in this chapter to provide motivation for and to explore some consequences of restricting NPs to a single Case feature.
3. Case as a Bijective Relation

3.1 Introductory Remarks

Among the proposed principles of UG that routinely surfaces in the literature is the prohibition against "Case conflict", whereby a structure is ruled out if it contains an NP in a position to receive two different (i.e. conflicting) Cases:

(33) *NP [Caseα, Case β], where α ≠ β

I will argue here for a generalized version of (33) whereby an NP with a Case feature α and a Case feature β is ungrammatical even where α = β. That is, I will attempt to show that Case, like θ-role, is a bijective relation in that for each X0 with Case feature α there may be one and only one YP bearing α and for each YP there may be one and only one Case-assigner. The proposal that a Case-assigner may directly assign one Case feature only has been discussed already in the previous section. Here, we will concentrate on the other half of the bijective relation, the proposal that NPs may not have more than one Case-assigner.

It will be argued that restricting YPs to a single Case feature explains why in general only NPs and gerunds may occur in Case-marked positions. It will be suggested that this analysis is preferable to that afforded to these facts by the Case Resistance Principle (CRP) of Stowell (1981) in that it is conceptually identical to "traditional" Case conflict and allows for a natural treatment of variation in "CRP effects" across languages. The idea that there can not be more than one Case feature in an A-chain has already been proposed in various
forms in previous work (cf., for example, Vergnaud (1979), Ayoub (1981), and Sportiche (1983)). 3 What I hope to show here is that this view has interesting empirical consequences. Besides the CRP effects, the consequences of this proposal for NP-movement will be explored.

Our discussion will be organized as follows: first, in 3.2, we will give a summary of the CRP, placing it in its theoretical context and outlining the data it is designed to account for. In the following subsection (3.3), the proposal to generalize Case conflict will be developed. It will be shown how the CRP can be derived and how language variation in CRP effects might be dealt with. In section 3.4, we turn to consideration of the consequences of Case "uniqueness" for NP-movement out of noninfiniteval clauses, examining raising in Hausa, Romanian, and Chinese, and passives in Ukrainian and German.

3.2 The CRP

The study of phrase structure in Stowell (1981) represents a significant contribution to the program of deriving not already redundant effects of the categorial component (= phrase structure rules) from general principles. This research program, begun in Chomsky (1981), is part of a larger trend in recent syntactic theory which has attempted to eliminate language and construction specific rules in favor of universal principles, thereby reducing the class of possible grammars and hence moving a step closer to genuine explanation. (Cf. discussion in chapter 1.) Among the phrase structure component effects not independently derived from X' Theory principles or subcategorization is that of (i) the order of complements
and modifiers with respect to each other and (2) the categorial nature of specifiers (and, in particular, subjects). Stowell proposes that these can be made to follow from principles of Case Theory, in conjunction with other general principles. One of the Case Theory principles invoked is the Adjacency Condition (cf. also Chomsky, 1981), discussed in chapter 1, section 5, and (24) above, which ensures that complements are linearly adjacent to their heads by requiring adjacency in order for Case assignment to take place. Another principle is proposed to account for the distribution and ordering of non-NP categories. This principle and the facts it purports to account for will be the subject matter of the remainder of this section.

In considering the distribution and ordering of non-NP categories, Stowell raises the question of which categories may bear Case. Surveying various contexts of Case assignment and morphological manifestations of Case reveals an apparent dichotomy (at least in languages like English) between [+N] and [-N] categories. In languages having extensive overt Case-marking, both NPs and AdjPs bear Case, while (the heads of) other categories do not (VPs, PP, etc.). And, even in English, which has very little morphological Case, it can easily be seen that PPs cannot appear in Case-assigning contexts: they can't take genitive Case, they may not provoke of-insertion, they generally can't occur as the object of a preposition or in subject position of a tensed clause. It seems, then, that while (only) [-N] categories assign Case, (only) [+N] categories may bear Case. Stowell, extending this observation to include clausal categories, proposes the principle in (34):
(34) The Case Resistance Principle (CRP):
Case may not be assigned to a category bearing a Case-assigning feature.

The name of this principle reflects the idea that Case features and Case-assigning features seem to be "resistant" to each other. Stowell suggests that Case features and Case-assigning features, which he takes to be [-N] and [+Tense], can be viewed as conflicting feature values which thus cannot occur in the same categorial matrix. Stowell (op. cit.:146) further proposes that the CRP, under this view, "would then be subsumed under the general prohibition against 'Case conflict', according to which two distinct Cases may not be assigned to a single NP".

The CRP analysis of the distribution and ordering of non-NP categories is a result of the interaction between (34) and the "Visibility Hypothesis", proposed in Aoun (1979) and adopted in Chomsky (1981). Stowell's formulation is as in (35).

(35) The Visibility Hypothesis:
θ-roles can only be assigned to A-chains that are headed by a position occupied by PRO or Case.

The idea behind (35) is to tie Case Theory to θ-Theory by making assignment of θ-roles, which takes place at LF, conditional on the NP being "visible" at that level, where visible means having a Case feature or being PRO. One immediate result is that the Case Filter can be dispensed with since Case on NPs becomes independently obligatory by (35).

Assuming (34), and assuming (35) to hold of all arguments (PPs,
S's, as well as NPs), Stowell develops an interesting account of the
distribution and ordering of non-NP categories. The (English) data
this analysis is designed to handle is summarized in (36), where the
categories PP, Tensed S', and to-infinitive are plotted for various
contexts.

(36)

<table>
<thead>
<tr>
<th></th>
<th>PP</th>
<th>Tensed-S'</th>
<th>to-infin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Object of P</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(b) Genitive Case</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(c) ECH Context</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(d) Subject of Tensed Clause</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(e) Subject of Infinitive</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(f) Compl. of Derived Nominal</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(g) Compl. of Passive Verb</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(h) Ordering w.r.t. Other Complements</td>
<td>free</td>
<td>must follow</td>
<td>free</td>
</tr>
</tbody>
</table>

The over-all logic of the analysis is the following: PP, Tensed-S', and
to-infinitives, like NPs and gerunds, must have θ-roles or the θ-
Criterion is violated. In order to have a θ-role, they must have Case,
or (35) is violated. But, if they have Case, they violate (34).
(Recall that in Stowell's system to-infinitivals have the feature
[+Tense], but do not assign Case because Tense has "no content" since
it is unmarked for the feature [Past].) Hence the stars in the chart
in (36). NPs and gerunds do not violate (34) since Ns and O INFIL are
not Case-assigners and hence NPs and gerunds may occur in (a) - (d) of
(36).

The stars of rows (a) - (c) are straightforward, as examples like
(37)-(39) illustrate. (All CRP examples are from Stowell (op. cit.).)

(37)  a. It would be nice for (*on) the countertop to have a nice
       paint job
     b. We talked about (*from) the west

254
c. John's shooting (\*of) at the deer

d. \*We blamed it on \{ that Bill was too strict \\
   \} (for Bill) to have been too strict

e. \*We were asking about \{ that the Marines went to China \\
   \} to have gone to China

(38) I protested (\*in) the park's having been chosen for the rally

(39) a. \*I consider \{ that John came home to be fortunate \\
   \} to come home to be easy

b. \*Bill showed \{ that John lied \} to be a fact
   \{ for John to have lied \}

Turning now to (36d), (40) exemplifies the fact that PP generally
cannot occur in subject position of a tensed clause. (We will return
to the exceptionality in this regard of copular constructions.)

(40) a. \*Under the chair pleased the cat

b. \*Did under the chair please the cat?

And, the fact that sentential subjects are incompatible with question
inversion, as in (41), and other contexts where topics may not appear,
as in (42), argues that sentential subjects are in fact impossible and
that structures which superficially appear to have a clausal subject in
fact have a clause in topic position, as proposed originally in Emonds

(41) a. \*Does that Brian dyed his hair prove anything?

b. \*Is to kill animals wrong?

(42) a. \*John's belief (that) that \{ you took \} the course
   \{ (for you) to take \}

   helped you is unfounded
   (cf. \*John's belief (that) the Geography course; Bill really
   wanted to e\* is unfounded)

b. \*Although \{ that the house is empty may depress you, \} ...
   \{ (for you) to take this course would help you, \}
   (cf. \*Although with his sister; John was reluctant to
   travel e\* )

255
(43) a. That Brian dyed his hair proves nothing 
b. To kill animals is wrong

Stowell suggests that the CRP is circumvented in sentences like (43) by topicalization of the sentential subject. Case is assigned at S-structure to the trace of topicalization so that a θ-role may be assigned to this argument position. The CRP is respected since it applies to the head of a phrase (it is the head which bears the [-N] or [+Tense] Case-assigning feature) and traces have no internal structure.

(44) [s′ i That Brian dyed his hair] [s e i proves nothing]

Another way clausal categories may avoid a CRP violation is by extrapolation, as in (45), where once again Case is not assigned to S′ itself, but to the argument position, which is here filled by pleonastic it:

(45) Iti proves nothing [s′ i that Brian dyed his hair]

The ungrammaticality indicated for row (e) of (36) is the result of a violation of (35). Since the subject of an infinitive is a non-Case position, θ-role assignment is also blocked and a θ-Criterion violation results. Examples are given in (46).

(46) a. *John wondered how [that Bill arrived late] to upset Mary 
    to have come home

b. *(It) appears [that Bill came in late] to have upset Mary 
    (for Bill) to have come home

c. *It appears in the room to be very cold

The picture becomes a bit more complex when (f)-(h) are examined. The fact that PPs may occur as complements of derived nominals and
passive verbs--both Caseless positions--and the fact that they are freely ordered with respect to other complements (and, in particular, the fact that they are not required to be adjacent to the verb) indicate that complement PPs do not need to be assigned Case, contrary to subject PPs (cf. (e)). Stowell suggests that this is because PP arguments don’t bear θ-roles and that it is the object of the prepositions which is assigned a θ-role, compositionally (following the analysis of Borer; cf. discussion in section 2 above) in the case of a PP complement to a verb. The facts of (e) for PPs, Stowell speculates, might be attributed to "the fact that a θ-role can only be derived compositionally within X””. An alternative proposal is also offered which attributes the (g)-(h) vs. (e) facts to having the [-N] feature of the PP count as the Case feature satisfying (35), but only if PP is linked to the θ-grid of the verb.

Tensed clauses behave like PPs with respect to (f) and (g). It is argued that sentential complements of derived nominals, the (f) facts, are not assigned a θ-role by the nominal, but are in apposition to it (cf. pp. 199-201 for argumentation). The (g) facts (e.g. ‘It has been reported that the pills were powerful’) are the result of movement to the subject position in order for S’ to get Case for visibility, followed by it-extrapolation to avoid a CRP violation (which can also be avoided by topicalization: ‘That the pills were powerful has been reported’). Examples like those in (47) (with the adverb modifying the main verb), illustrative of the (h) facts for tensed clauses, are taken to show that tensed clause complements must obligatorily undergo extrapolation (if topicalization does not apply) to escape the CRP
violation which would result from being adjacent to the verb. (47) also shows that multiple adjunction (of $S'$, followed by that of AdvP or PP) to VP is impossible. 4

(47) a. Mary said that she wanted to drive carefully
    b. Paul mentioned that his shirt was dirty to Bill
    c. John knew that the law was unfair from experience

In other words, as with sentential subjects, sentential complements can't remain in the Case-marked position adjacent to the verb, though they are made visible for $\Theta$-theory through Case-assignment to their trace after extraposition or topicalization, as in (48).

(48) a. Bill knew $e_i$ from experience [$g'$ that the law was unfair]
b. [$g'$ That the law was unfair] Bill knew $e_i$ from experience

To-infinitives are like PPs in that they do not seem to be dependent on Case from the verb in order to receive a $\Theta$-role as the (f) - (h) facts, illustrated in (49), show (though, many examples similar to (49d) are unacceptable).

(49) a. Ken's attempt to finish on time
    b. John promised [to help us repeatedly]
        repeatedly to help us
    c. Fred explained (how to open the jar to Bill)
        to Bill how to open the jar
    d. It wasn't known how to fix the sink

This is in contrast to the (e) facts (cf. (46a,b)) which were taken to show that to-infinitives require Case in order to be $\Theta$-marked. The compositional $\Theta$-role story used to explain this same disparity for PPs can't be applied to to-infinitives since they are not assigned compositional $\Theta$-roles. Why it is to-infinitives are intrinsically

258
visible only in these positions is essentially left open by Stowell.

While the CRP analysis offers an explanation for many of the facts reported in (36) (insofar as these represent a true generalization), I believe that it has certain conceptual and empirical disadvantages, to which we now turn. Consider first of all why (34) should be true. In other words, why is there a CRP? As mentioned above, Stowell suggests that it can be viewed as a part of Case conflict. The idea behind Case conflict is that a single feature matrix may not contain more than one value for the same feature. A matrix containing [OBJ Case, NOM Case], for example, is excluded since two different Case values are given, much as a phonological matrix containing [+high, -high] would be excluded. Since Case-assigning features ([-N] and [+Tense], according to Stowell) are not Case features, it isn't clear why the two types of features may not cooccur. That is, why is a feature matrix [-N, OBJ Case] an instance of Case conflict, as the CRP would require? Another conceptual difference between the CRP and Case conflict is that while the latter applies to the result of actual Case assignment, the former must apply also to potential (but not actual) Case-assigning features, in order to exclude infinitivals from Case-marked positions.

It might be suggested that the prohibition of a [-N, OBJ Case] matrix is in fact akin to Case conflict if we take the latter to be part of a general prohibition against any type of conflicting features. Such a matrix would then be excluded in the same way a phonological matrix containing [+high, +low] would be excluded. This, however, brings us back to the original question: why are Case features in conflict with Case-assigning features? That is, while reasons can be
quite easily given for the incompatibility of a [+high] and [+low] in a
given matrix, the same cannot be said for the features [-N] and [OBJ
Case]. This also leads us to one of the empirical problems of the CRP:
what to do about languages, like Hebrew and Arabic (cf. discussion in
section 2), in which nouns assign Case? [+N] would have to be a Case-
assigning feature in these languages, yet [+N] categories must also
receive a Case feature. The CRP would thus be totally incompatible
with such a situation. Given the strong motivation for assuming that
nouns are Case-assigners in some languages, the incompatibility of
categorial features such as [-N], [+Tense], or [+N] with Case features
seems questionable.

Other empirical problems arise in regard to the close connection
between the CRP analysis and the Visibility Hypothesis. If Case-
assignment is made obligatory only by the Visibility Hypothesis, it
isn't clear why structures like that in (50) would be excluded.

(50) *(g' for [g John left]) would upset Mary

Since for governs both the node S and the node (NP,S), it presumably
may assign Case to either. If Case is assigned to (NP,S), then the
structure is ruled out by Case conflict since John will have two
conflicting Case features—that from for and that from INFL. If
instead Case is assigned to S, then (50) is out by the CRP since the
head of S had a Case-assigning feature. The problem is that since S
does not bear a 0-role—it is S’ which is the subject argument here,
nothing forces it to bear Case and thus nothing forces for to assign
Case. Likewise, since the NP John has Case from AGR, it is thereby

260
visible for θ-role assignment and, once again, nothing would seem to force for to assign Case. Apparently the obligatoriness of Case assignment is not entirely derived by visibility.

Further reason to doubt the correctness of Case being obligatory only because it's a condition on θ-role assignment comes from consideration of adverbials in English. Larson (1985) argues that the fact that only certain NPs (e.g. 'the previous April', but not other NPs designating periods of time such as 'that occasion', and 'this vacation' and 'yesterday', but not other temporal NPs such as 'that period of his life' or 'that interval'—cf. Larson) may act as adverbs in English is because these NPs are headed by nouns lexically marked for an inherent default oblique Case. Now, if Case assignment is obligatory only because of θ-Theor y, and if adverbial NPs require Case, then apparently adverbial θ-role assignment is dependent on the presence of a Case feature as well. This implies, however, that adverbial PPs, AdvPs, and S's all must have inherent Case as well. While perhaps the heads of PPs and AdvPs could be said to have inherently visible features which percolate to the phrasal level and which satisfy the Case requirement, it is not at all clear what would render S's inherently visible since their heads are not lexical categories. Furthermore, adverbial PPs, S's, and AdvPs do not display the lexical idiosyncrasy that NPs do (and that the lexically marked default Case analysis is designed to handle). That is, any S', PP, or AdvP with temporal, manner, or locative meaning may act as an adverb, but this is not so for such NPs, as just observed. Again, the assumption that the obligatoriness of Case assignment stems from θ-

261
Theory seems problematic.

Other problems with the Visibility Hypothesis are raised by Borer (1984). Besides the stipulatory nature of the disjunction between PRO and Case in (35), she also points out that if visibility replaces the Case Filter, then it must be that all Case assignment applies prior to LF, where visibility applies. This conclusion is in contradiction with the conclusion that some Case-marking takes place at PF. Borer argues for the latter on the basis of āel-insertion in Hebrew. āel + NP does not behave like other PPs do with respect to the binding theory. This is accounted for quite naturally and simply by assuming that āel-insertion may apply at PF since at the level of application of the binding theory conditions, the category in question is still an NP. If this is correct, Case must be checked at PF, as it is by the Case Filter approach. Then, visibility cannot derive the Case Filter. Borer also takes issue with the prediction of the Visibility Hypothesis that variables must occur in Case-marked A-chains. That is, on the one hand, it does not seem to be true that NPs must get Case only in their A-chain and, on the other hand, it does not seem to be true that non-Č-marked A-chains do not need Case. The first situation is falsified by free relatives in Hebrew which differ minimally from questions in that they allow the wh-NP to satisfy the Case Filter with Case received in its A'-position, whereas this is not possible in questions. The second situation is falsified, Borer argues, by er/ea constructions in Dutch and German, which are ungrammatical with infinitives, as is shown in (51) and (52); in other words, Case seems to be required even though there is no Č-role assignment.
(51) a. Er werd gedanast
    there was danced

    b. *Er gedanast te worden
    there danced to be

(52) a. Es wird getanzt
    it was danced

    b. *Es getanz zu werden
    it danced to be

A variety of facts, then, seem to point to the conclusion that Case is not directly related to 8-Theory. Another aspect of the CRP analysis which is problematic is the requirement that PP and S’ arguments be Case-marked, but yet cannot occur in Case-marked positions. Once again, various phenomena challenge the correctness of this view. We consider first the behavior of clausal complements in Hausa with respect to Case assignment. Recall from chapter 1, section 5, that certain Hausa verbs lose their Case-marking property when in a clause in the continuous aspect. Insertion of the Case-marker na is obligatory when there is a following NP or gerundive complement:

(53) a. Yanaa son /’soo Ali
    3sm likeVN-of/like A
    ‘He likes Ali’

    b. Yanaa son /’soo karanta /’ur’asni
    3sm likeVN-of/like reading Koran
    ‘He likes reading the Koran’

Now, since preposition stranding is generally excluded in Hausa, as is illustrated in (54),

263
(54) a. *Was kuka zoo da e?  
    who 2p come with  
    'Who did you come with?'  

b. *Inaa suka zoo daga e? 
    where 3p come from  
    'Where did they come from?' 

c. *Was ka keranta littasfin e?  
    who 2a read book-of  
    'Whose book did you read?' 

d. *Was sukee son e? 
    who 3p likeVN-of  
    'Who do they like?' 

One should expect that na-insertion cannot be triggered by a clausal complement to a non-Case-assigning verbal noun. The CRP analysis predicts this not to be possible because S’s must be extraposed from Case-marked positions, but such movement in this case would result in preposition stranding. On the other hand, if S’ arguments are to receive a 0-role, they must have Case and therefore non-insertion of na should also be ungrammatical. The fact is that na is optionally inserted when a non-Case-assigning verbal noun has a clausal complement:

(55) a. Inaa son /soru [in tafi Kanoo] 
    1s likeVN-of/likeVN 1s go K 
    'I want to go to Kano’

b. Yanna tsammaanin/tsammaanii zaa su zoo goobe 
    3sm thinkVN-of/thinkVN 3p come tomorrow 
    'He thinks they will come tomorrow’

It seems then that S’s in Hausa may optionally be assigned at least genitive Case. It might be suggested that verbs in the continuous aspect do not assign a 0-role to their clausal complements, as Stowell suggests for derived nominals in English. Besides not resolving the preposition stranding problem, this analysis has no motivation whatsoever. The relation between a verbal noun and its complement is the same as that between the verb in any other aspect and its complement; it is certainly not a relation of apposition.5
Other more general problems with assuming that S' must be Case-marked are discussed by Safir (1982). Among other things, he notes that the CRP/extraposition account of the order of S' with respect to other complements is lacking in that cases where there is no accusative Case assignment pattern the same way as cases where there is. A verb such as remark, for example, may never take a bare NP complement ('He remarked *(on) their car'); assuming that subcategorization is not independent (cf. discussion in section 2), this is presumably because it does not assign accusative Case. Despite this fact, it is difficult to get an S' complement of remark to precede other complements, as is shown in (56a), and it is impossible to extract the object of a PP argument of remark, as is shown by (56b).

(56)  a. *John remarked [that ...] to Bill
     b. *Who did John remark to a [that ...]

Obligatory extraposition of S' accounts for (56). (56a) is out because S' has not extraposed or (and this may account for its relative acceptability in comparison with (56b)) because both S' and PP have extraposed. Stowell's account for the unacceptability of structures like that in (56b) is dependent on S' requiring Case. Thus, sentences like 'Who did John say to a that John would buy the guitar?' are excluded because S' must be adjacent to V at D-structure in order for Case, which requires adjacency, to be assigned to its trace after extraposition, which is forced by the CRP. However, verb-preposition reanalysis, which is necessary in order for the object of a preposition to be properly governed, also requires adjacency and this condition is
not set in the structure in question because of the intervening trace of the extraposed clause. This account cannot be extended to (56b) (again, if subcategorization is considered not to be independent). Examples like (56) show that extraposition is required independently of the Case-assigning status of the verb.6

Another aspect of the CRP analysis which at the very least remains to be developed is that of cross-linguistic variation in CRP effects. As already noted with respect to languages containing Case-assigning nouns, it isn't clear how parametric variation can be built into (34), as it stands. Kempchinsky (1985) suggests that the fact that $S'$ may routinely be found as the object of a preposition in Spanish, as is shown in Contreras (1983) (cf. also Plann (1986)), due to the fact that prepositions in Spanish assign inherent (oblique) Case and the CRP applies only to structural Case. This would seem to suggest that PPs may normally appear as the object of a preposition, clearly a wrong result, as (57) illustrates.

(57) a. *Su temor de [pp a la escuela]
    their fear of at the school

    b. *Ellos hablaron sobre [pp a la escuela]
    they talked about at the school

    (cf. Su temor de [g' que los niños vayan a la escuela])

The following conclusions can be drawn from the various observations we have made:

266
(58)  a. Non-NPs are not required to have Case.
       b. The Case Filter is not directly derived from \( \theta \)-Theory.
       c. Case assignment is the automatic/obligatory consequence of
           the appearance of an element \( yP \) in a position which is
           governed by an element \( \alpha \), where \( \alpha \) has a Case-feature and \( \alpha \)
           is a Case-assigner.

(58a,b) are direct consequences of the fact that non-NPs may occur in
positions in which they may not receive Case, NPs require Case even
where they have no \( \theta \)-role, and some Case assignment must apply at PF.
In regard to (58b), it should be noted that although the Case Filter
cannot be a direct consequence of the \( \theta \)-Criterion, the two may be
indirectly linked in that they are the PF and LF manifestations of a
more general property of UG which requires unique interpretation of
arguments—morphologically and semantically, as was suggested in the
preceding section. The Visibility Hypothesis can thus be discarded
without losing an account of the similarity between the Case Filter and
the \( \theta \)-Criterion. Clearly, we also want to salvage what may be termed
the "core CRP effects" from the CRP system. In other words, the
generalization about the distribution of non-NP categories that they do
not occur in Case-marked positions (subject to parametric variation,
which must be developed) seems to be a true one. I will argue that
this generalization can be made to follow from Case uniqueness if (58c)
is assumed. (58c) also allows for a straightforward account of cases
like (50) above, thus uniting traditional Case conflict with Case
uniqueness. The obligatoriness of Case assignment is independently
argued for in Vergnaud (1982) in his analysis of the distribution of
PRO and in an account of the obligatory preposing of AUX in Italian
infinitives having nominative subjects. This latter argument is also
made about Portuguese infinitives in Rouveret (1980). (58c) can be viewed as being analogous to θ-role assignment, it seems to me. It makes no sense to assume that such assignment is optional since assignment versus non-assignment of a θ-role is not distinguishable. It is mere presence in a particular structural position which entails assignment, which is then automatic. This view of Case assignment is also an integral part of theories developed by Manzini (1983b), Safir (1982), Bouchard (1984), and Sportiche (1983).

3.3 Generalized Case Conflict

3.3.1 Deriving the CRP

In preceding discussion, we have argued that Case assignment takes place under strict c-command. This is, of course, a minimal condition. C-command is not sufficient for the assignment relation to be possible; the more restrictive notion of government, which is based on c-command, is required. Government was defined in chapter 1, as in:

(59) α governs θ where α c-commands θ and θ is not "protected" by an intervening maximal projection.

As mentioned above in our discussion of the ECP, we follow Kayne and others in assuming that cross-boundary government (i.e. government across a maximal projection) is permitted just in case α θ-marká the boundary in question. This means that the head and the specifier of a θ-marked maximal projection may be governed "from the outside". COMP may thus be governed by a verb if this verb θ-marks S', the projection of COMP. Likewise, we saw that since S (where immediately dominated by a projection of COMP) can never be θ-marked (it is S' which bears the
clausal 0-role), it is never a boundary to government. Among other things, this permits a coindexed antecedent in COMP to govern a subject trace. And, in general [NP,S], the specifier of S, and INFL, the head of S, may be governed from the outside. We return shortly to the implications of cross-boundary government for generalized Case conflict. First, the mechanism of Case "dripping" and transmittance will be made explicit.

As we saw above, Case automatically percolates down to the head of the maximal projection it is assigned to. If the head cannot assign this Case feature, then it remains. Nouns in languages like English and Hausa thus retain Case-features. So, when, for example, a preposition assigns Case to its NP complement, the Case-feature percolates down to N and remains on N--i.e., there is no further assignment.

Suppose, however, that if the head is a Case-assigner, then Case can be reassigned, or transmitted. Kayne (1984) suggests that empty prepositions may transmit Case in this fashion (and cf. also Reuland (1983) and Manzini (1983b) for analyses in which Case transfer plays a key role). I would like to suggest here that in principle any Case-assigner may transmit Case. Furthermore, since Case transmittance is actually a reapplication of Case assignment, it not only may apply, but must apply. Which categories are Case-assigners in a language like English? Besides the obvious ones, such as V and P, it has been suggested that INFL assigns nominative Case if (and only if) it is [*AGR] or, perhaps, [*Tense], depending on the language. We might also assume, following Stowell, 1983, that a [*Tense] COMP participates in

269
nominative Case assignment, if the latter is unidirectional within a given language (cf. Horvath 1986, and also Koopman 1984 and Travis 1984). If this process is uniformly rightward in English, as seems likely, then INFL must move to COMP in order for Case to be assigned to the subject. It can be said then that [+Tense] (or [+AGR]) INFL and [+Tense] COMP are Case-assigners. INFL lacking tense or agreement features is never a Case-assigner, as the usual ungrammaticality of lexical subject in infinitives attests to. The same is generally true of [Ø Tense] COMP. If however [Ø Tense] COMP has the features [-N, -V] (in English, either the overt preposition for, or perhaps an empty preposition if we accept the ECM analysis of Kayne, 1984), it may assign Case. Now, if Case-assigners may also in principle transmit Case, then it follows that INFL [+AGR] and COMP [+Tense] transmit Case, whereas INFL [Ø AGR] does not and COMP [Ø Tense] does only if has the features [-N, -V] (since prepositions are Case-assigners). These observations are summarized in (60).

(60) a. If α is a Case-assigner, then α is a "Case-transmitter"
b. [Ø Tense] COMP is a Case-assigner only if [-N, -V], and INFL is a Case-assigner only if it has AGR.

Consider now the implications of (61), given Case uniqueness and obligatory Case assignment. In the case of a preposition with a PP object, the Case feature of P is first assigned to the PP complement. It then percolates down to P, the head of PP. Since P may assign Case, this Case feature is assigned once again to the NP complement, where it remains. However, since P also assigns its own lexical Case-feature, the NP complement ends up with two Case features in violation of the
The bijective character of the Case relation.

(61) *We talked [pp about [pp from the west

It also follows that $S'$ is prevented from occurring in Case-marked positions because the Case-feature of the governing verb or preposition or AGR which is assigned to $S'$ percolates to COMP and is reassigned to [NP,S]. Since [NP,S] also receives a Case-feature from AGR, the result is once again that [NP,S] has more than one Case-feature in violation of Case uniqueness. The same bad result obtains if the Case feature is assigned from COMP to the head of $S$, INFL, since INFL then assigns the two Case-features to [NP,S].

(62) a. *We were talking about [g' that [g the Marines AGR went to

        China

b. *I consider [g' that [g John AGR came home ] to be fortunate

            OBJ
NON


c. *John's belief [g' (that) [g' that [g you AGR took the

            NOM

        course] AGR helped you] is unfounded

Adopting Stowell's analysis, where $S'$ may be topicalized, a violation may be avoided. Since Case assignment may apply at any level, it may apply in (63) after 'Move-α'. Nominative Case is assigned to the trace of the topicalized $S'$--and not to $S'$ itself--and thus there is no violation of Case uniqueness.

271
It is interesting to consider Hausa sentential arguments in light of this analysis. They behave much as English ones do with respect to occurrence in Case-marked positions. However, given the conclusion of our discussion of wh-marking in chapter 1 that wh-elements in COMP trigger the relative form of the INFL, we should expect that if sentential subjects are actually topics, then relative aspect should be obligatory when the subject is $S'$. In fact, either the relative or non-relative form of INFL may occur in such a situation, as (64) illustrates:

(64) Mu taashi yanzu YA / YAA fi kyau
    1p get-up now 3m 3m exceed goodness
    REL  PERF

    'That we leave now is better'

Far from being problematic, (64) is as expected. Since subject pronouns may be, and usually are, null in Hausa, there is yet another way for $S'$ to avoid the subject position besides topicalization—namely, left dislocation. That is, $S'$ may be base-generated in an A'-position external to $S$ and its corresponding position in $S$ may be pro since Hausa is a pro-drop language. The alternative forms of INFL in (64) correspond, then, to (65a) and (65b), respectively:

(65) a. [COMP mu taashi yanzu]$_t$ [s $t_1$ YA fi kyau]

b. [Top mu taashi yanzu] [s' [s pro YAA fi kyau]]

Likewise, our conclusion (in section 6.3.4.3 of chapter 1) that the two 'although'-clauses in Hausa differ in that koo da-clauses

272
involve \textit{wh}-movement (and hence relative aspect), while \textit{koo}-clauses do not, together with the conclusion about clausal subjects occurring only in COMP or a left-dislocated position correctly predicts what may occur in the subject position of 'although'-clauses. (66a,b) illustrate 'although'-clauses. (66a), with \textit{koo da}, requires relative marking of the INFL, which has been taken to indicate \textit{wh}-movement. The presence of the relative marker \textit{da} was considered to be indicative of \textit{wh}-movement. (66b), a \textit{koo}-clause, has no relative marker \textit{da}, does not therefore involve \textit{wh}-movement, and thus does not require relative aspect marking of the INFL.

(66) a. Koo da *MUN / MUKA sani kanaa nan  
although REL 1p 1pREL know 2sm here  
'Even though we knew that you were there'

b. Koo MUN karanta jariidaa  
although 1p read newspaper  
'Even though we read the paper'

(67) shows the \textit{koo da} may not be followed by either a topicalized or a left-dislocated element. This is as expected since both '\textit{wh} + \textit{wh}' and '\textit{wh} + left-dislocated element' are excluded, as was seen above (section 9.4 of chapter 1).

(67) a. *Koo da kuuraa ka kase, ba zaa a saa hootonka  
although REL hyena 2sm kill NEG indef put photo-your

cikin jariidaa ba  
in newspaper NEG  
'Even though you may have killed a hyena, they're not going to put your picture in the paper'
b. *Koo da da sarkii ka zoo, ba zaa ka shige gidaanan
although REL with emir 2am come NEG 2am enter house
ba
NEG
'Even if you come with the emir, you won't enter my house'

No such restriction applies to koo-clauses since they do not involve wh-
movement and thus (67a, b) are good if the relative da is removed.

This means that we should expect to find sentential subjects with
koo-clauses, but not with koo da-clauses since sentential subjects must
be either topicalized or left dislocated. The facts are as expected.
(68) shows that both types of clauses may take NP and gerundive
subjects and (69) shows that only koo-clauses may take sentential
subjects.

(68) a. Koo (da) jariidaa zai saa ka fuushii, doole ka
although REL newspaper 3am put.you anger must 2am
FUT
karantaa ta
read it
'Although the newspaper may make you angry, you must read it'

b. Koo (da) karanta jariidaa zai saa ka fuushii, doole
although REL readVN newspaper 3am put you anger must
FUT
ka yii shi
2am do it
'Although reading the paper may make you angry, you must do
it'

(69) Koo (*da) ka karanta jariidaa zai saa ka fuushii, doole
although REL 2am read newspaper 3am put you angry must
ka yii shi
2am do it
'Although that you read the paper may make you angry, you must do
it'

Consider next the behavior of infinitival clauses with respect to
the generalized Case conflict analysis being developed here. Since

274

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neither INFL without AGR nor [∅ Tense] COMP without the features [-N, -V] is a Case-assiger, the result is that a preposition or a non-ECH verb may not have an infinitival complement, as (70) illustrates.

(70) *We were talking about [g′ [g PRO / John to go to China]]

Case is assigned by the verb or preposition to S′ and percolates to COMP. Since COMP is [∅ Tense] and does not have the features [-N, -V], Case cannot be transmitted. Hence a lexical NP is excluded from the subject position of the embedded clause since it lacks Case. Likewise PRO is excluded in this situation since COMP, which has content, namely, the Case-feature, governs PRO, in violation of the PRO theorem. In order for PRO to be ungoverned, its potential governors--INFL and COMP--must be without features of any kind. This would explain why the complementizer that may not cooccur with a nontensed S: *"I want that PRO to leave" (cf. Kayne 1984). Where infinitival complements are possible, it is because the verb either has no Case feature or only optionally assigns Case: "I hope PRO to leave"/"I want PRO to leave".

Now if [∅ Tense] COMP contains for, an overt [-N, -V] element, which has a Case-feature, the clause may not occur as the object of a preposition, as expected, because of a routine violation of Case uniqueness:

(71) *I′m counting on [g′ for [g John to leave]]

Notice, finally, that the INFL of a gerund clause retains Case since it is not a possible Case-assiger. Genitive Case may be
assigned to the specifier:

(72) a. V [s NP [I' [I' G] VP]]
    GEN OBJ

    b. John didn’t like our destroying his apartment

Alternatively, Case is assigned directly to SPEC and genitive Case, a default Case, does not apply:

(73) a. V [s NP [I' [I' G] VP]]
    OBJ

    b. John didn’t like us destroying his appartmen

In Hausa, and perhaps in other languages, the option in (73) is not available:

(74) a. *Ali baa yaa son [ Aisha karanta Rur’aanii ]
    A NEG 3am like   A read-VN Koran
    ’Ali doesn’t like Aisha reading the Koran’

    b. Ali baa yaa son [ karanta Rur’aanii na Aisha]
    A NEG 3am like read-VN Koran of A
    ’Ali doesn’t like Aisha’s reading the Koran’

Perhaps gerundive S is a boundary to government in Hausa and thus the Case-feature from V can be assigned only to S, from which it percolates to I, where it remains. We leave this open at this point, though see Reuland (1983) for another analysis of Case-assignment in gerund clauses. 7

3.3.2 Oblique Case

It was suggested in our discussion of Case assignment that, following Levin and Simpson (1981) and Pesetsky (1982) (and cf. also the recent extensive discussion in Chomsky 1986b), the particularity of
oblique Case is that it is linked to a θ-role feature in the feature matrix of a given X₀ which assigns oblique Case. Thus oblique Case is peculiar in that it is a property related to a particular X₀-assigner. Likewise, oblique Case-assigners are peculiar in that they are not structural Case-assigners—i.e. they may assign Case only because they assign a θ-role (which happens to have a Case-feature linked to it). As one might expect, these peculiarities, which are summarized in (75), result in differences in CRP effects.

(75) Oblique Case-assigners may assign Case feature α only if α is linked to a θ-role feature, and an oblique Case-feature α may only be assigned when α is linked to a θ-role.

We have followed Kayne (1984) in assuming that English prepositions may assign Case in the same way as verbs—i.e. structurally, whereas in many other languages preposition continue to assign oblique Case exclusively. In languages of this type, such as Spanish and Icelandic, S' may quite generally occur as the object of a preposition. This is as expected. Since OBL can be assigned only when it is tied to a θ-role, COMP cannot transfer the OBL feature and it thus remains in COMP. There is no violation of Case uniqueness:

(76)  a. Sue temor de [s' que los niños AGR vayan a la escuela]
     b. Me conformó con que ...

(77)  John var að hugsa um [s' að María var líkleg farin
'John was thinking about that Mary had probably gone' [from Safir, 1982, who cites Thrainsson, 1979]

Thus our analysis differs from that proposed by Kempchinsky (1985) in that Case uniqueness applies to oblique as well as structural Case;
it's just that COMP cannot transfer an oblique Case feature.

PP cannot be an object of P even where Ps assign oblique Case because of the requirement developed above that θ-roles must be borne by referential categories--i.e. categories having the features [+N, -V]. Case and θ-role are assigned by P to PP. Case percolates down to the head of PP, but cannot be reassigned since it is no longer linked to a θ-role. The θ-role remains on the PP maximal projection and the structure is ruled out since PPs cannot bear (non-adverbial) θ-roles.

(78) a. PP
     \( θ\)-role
     \( OBL \)
     P
     PP

     \( θ\)-role
     \( OBL \)
     P
     PP

     NP

\[ \text{---＞} \]

b. *Ellos hablaron sobre a la escuela
   "They talked about at the school"

We are now in a position to offer an account of the various 'P + P' sequences that are acceptable in Spanish and in English (cf. Emonds, 1970, Jackendoff, 1973, and Baltin, 1978, for discussion of English 'P + PP'). Beginning with English, suppose that some oblique Case still exists in English. In particular, there seems to be a class of locative prepositions that have this property: in, from, out, up might be included. Now, if these prepositions may indeed assign oblique Case, then PPs like those in (79) do not present violations of Case bijection since the Case features from the highest P is assigned to PP and must remain on the P head of this PP, as in Spanish (78).
(79) a. from under the bed/ off the table/ inside the house/ behind the door
    b. out of the barn, up to your bedroom, from out of the darkness

The reason the phrases in (79) and analogues in Spanish do not violate θ-theory requirements may be attributed to either of the following. Notice that the PPs which may appear as the complement of a P are actually referential. "Under the bed", "inside the house", and "behind the door" refer to places. This fact may therefore account for the fact that these PPs may bear a θ-role, even though PPs generally cannot. We might also view cases of 'P PP' as instances of 'P + P' compositional θ-role assignment. That is, they are identical to the structure in (78) except that the two θ-roles merge to form a compositional θ-role which is assigned to NP. At least one argument that can be given to motivate such an analysis is that both the particular prepositions that may occur in these structures and their relative order seems to be highly idiosyncratic, a property which is characteristic of compositional thematic roles, as is exemplified by idiomatic expressions (cf. Aoun and Sportiche, 1982)

The oblique parameter accounts for other variation in Case Theory effects. Since Case-assigners are also generally Case-transmitters, it may have seemed contradictory that Ns in Semitic languages both assign and retain Case. That is, in a stacked genitival construction, why isn’t each N forced to reassign the Case that it receives? The reason should now be clear: genitive Case is oblique Case in these languages. (In Standard Arabic, for example, morphological genitive Case is assigned by both nouns and prepositions.) Ns may assign only genitive
Case attached to a θ-role feature and therefore Case assigned to an NP may not be reassigned by N since it is no longer linked to a θ-role feature (since θ-role features remain on X:\max).

The difference between English and Hausa with respect to of-insertion with clausal complements can also be given an account now. Assuming that English of is a structural objective Case-assigner (but, cf. Chomsky 1986b for a different view), the Case assigned to S' percolates down to COMP and is transmitted by COMP to [NP,S], resulting in a violation of Case uniqueness:

(80) 'John's claim of [g that [g he AGR would win]

Suppose that the preposition na, the equivalent of of in Hausa, is an oblique-assigner, while other prepositions in Hausa are structural Case-assigners. The plausibility of this idea can be seen by examining the morphological form of complements pronouns of Vs, Ps, and na. Generally, prepositional object pronouns appear in the independent form, characterized by high tone and a long vowel (or two short syllables):

(81) a. dà nii/muu/kai/kee/kuu/shii/its/suu
    with me us you you you him her them
    sm fs p

b. bisà nii/muu/kai ...
   on me us you

c. dàgà nii/muu/kai ...
   from me us you

The direct object pronouns appear in clitic form when adjacent to the
verb. And, at least one preposition—qa/qaree—also takes a clitic pronoun object. The direct object clitic form of the pronoun is characterized by a short vowel and a tone which is polar to that of the final syllable of the word it is cliticized to.

(82)  a. Sun gen ni/ mù/ kà/ ki/ kà/ shi/ tâ/ sù
     3m see me us you(ma) you(fa) you(p) him her them
     'They saw ...'
  b. Sun kaamàa ni/mu/ka/ki/ku/shi/tâ/su
     'They caught ...'
  c. Gàree ni/mù ... 'to/by me/you ..'

A direct object not adjacent to its verb appears in the independent form:

(83)  Sun nuunàa wà Aishà shii/ ita/ suu
     3p show to A it(m) it(f) them
     'They showed Aisha it/them'

Summarizing, verbs and prepositions take either an independent pronoun object or a direct object clitic, depending on whether cliticization is possible. Pronoun objects of the preposition na, however, have neither of these forms. They have instead a form which is unique and which is characterized by invariant low tone and a short vowel (except for first person singular).

(84)  a. hòotoonaà, hòotonkà, hòotonki, hòotonkà, hòotonaà, hòotontaà
     'my photo, your(m) photo, your(f) photo, your(p) photo, his photo, her photo, their photo'
  b. dookinàa, dokinkà, dookinki, dookinà, ... 'my horse, your(m) horse, your(f) horse, your(p) horse, ...'
Assuming, then, that na assigns oblique (genitive) Case, while other prepositions, and verbs, assign objective Case, it follows that S' may be Case-marked by na (as in (85)), but not by other prepositions (as in (86)) or by verbs (as in (87)).

(85) Sunaa taamaanin [g' wai yaaraa zaa su tafi Kanoo]

3p think-VN-of that children 3pFUT go K
'They think that the children will go to Kano'

(86) *Sun yi mini maganaa bisa [g' wai yaaraa sun yi saataal]

3p do to-me speech on that children 3p do steal-VN
'They talked to me about that the children stole'

(87) *Naa dauki [g' wai Ali yaa rubuuta littaafii abin kirkii]

1s take that A 3sm write book good-thing
'I consider that Ali wrote a book a good thing'

(cf. Naa dauki rubuuta littaafii abin kirkii
1s take write-VN book good-thing
'I consider writing a book a good thing')

(cf. Wai Ali yaa rubuuta littaafii abin kirkii nee
that A 3sm write book good-thing COP
'That Ali wrote a book is a good thing')

3.3.3 PP Subjects, Adverb Subjects, and Default Case

Consider once again the status of PPs in subject position. As already mentioned, PPs generally may not occur in subject position, even where the semantics requires a locative or other θ-role typical of PPs.
(88)  a. *In her room looked horrible
    b. *In Michigan holds the record for blizzards
    c. *In that county has a lot of mosquitoes

We suggested that these are ruled out by θ-Theory since argument θ-roles must be borne by NPs (or gerunds or S'). Complement PP arguments are possible because of compositional θ-role assignment to the [NP,PP]. Notice, however, that since compositional θ-role construction is quite generally limited to features of elements which are in a relation of proper government (heads and heads of the complements of these), there is no way for compositional θ-role assignment to "save" the structures in (88). That is, while the θ-feature of V may be combined with the θ-feature of the head of the PP complement of V to form a compositional θ-role which is assigned to [NP,PP], it is not possible for the (composite) θ-role of I' to combine with the θ-feature of the head of a PP subject, since PP is not in a complement relation to I' :

(89)  a. 
    b. 

This restriction on feature composition is presumably what underlies the fact that verb-object idioms are quite common, while verb-subjects ones are lacking, assuming idioms to be just one case of compositional feature assignment (cf. Aoun and Sportiche (1982)). This analysis of the ungrammaticality of subjectPPs also accounts for the fact that it is not possible to "rescue" PP subjects by topicalization, as is possible for S' subjects. Even if the PP were topicalized θ-role assignment, which applies at LF, would assign the subject θ-role to
the PP trace in violation of the requirement that argument ε-roles be borne by referential categories (i.e., not PPs).

It was pointed out that in copular constructions, PPs may occur in subject position. Not all sentences with the verb be allow a PP subject: only where there is an identity relation between the subject and the complement of be is this possible. Where the identity relation obtains, the subject and complement of be can be inversed, other things being equal. (90) and (91) illustrate this.

(90) a. Under the table is the best hiding place
    b. The best hiding place is under the table

(91) a. *Under the table is all messy
    b. *All messy is under the table

It seems then that PPs may bear a subject ε-role exclusively in this context.

Notice that Case Theory does not rule out (90) and (91), under the assumption made above that certain (locative) prepositions may assign oblique Case. This is because the nominative Case feature assigned to PP in subject position and dripped to P may not be reassigned by P if P is an oblique Case-assigner. [NOM] thus remains on P, innocuously. That Case Theory is not what rules out PPs in subject position receives further support from NP-movement facts. Generally, NP-movement of PPs produces unacceptability:

(92) a. *To Maryi was given a book ti
    b. *To Maryi seems ti to have been given a book ti

That this unacceptability is not related to Case Theory can be seen by
examine (93), where the raised PP is not in a Case-marked position and thus a Case uniqueness violation is not conceivable:

(93) a. *It appears on Mary to be hard to live in the city
   b. *It seems to Mary to be given a book

Larson (1985:613) notes similar facts for adverb NPs. As mentioned above, some NPs may serve as adverbs and others, though semantically similar, may not—e.g. ‘this year’ versus ‘that occasion’. Larson suggests that this difference is connected with Case. It is suggested that some temporal, locative, and manner nouns are lexically marked for default oblique Case, while others have no such marking and thus cannot appear in Caseless contexts, of which an adjunct is one. Larson notes that neither raising of a Caseless NP-adverb to a Case-marked position (94) nor raising of an oblique NP-adverb to a non-Case-marked position (95) is possible.

(94) a. *It appeared that John would learn PRO to swim that occasion
    b. *That occasion appeared John would learn PRO to swim
    c. *It was tough PRO to visit China that occasion
    d. *That occasion was tough PRO to visit China

(95) a. It seemed to appear that John would win yesterday
    b. *It seems yesterday to appear that John would win
    c. It appears to be tough PRO to visit China this year
    d. *It appears this year to be tough PRO to visit China

Larson concludes that failure of adverb raising is not a matter of Case. I assume the same is true for PP raising.

We return now to why it is that PPs may appear in the subject position of be or verbless copular constructions and why they may be raised from that position. We can immediately reduce the latter
possibility to the former. That is, if a PP may appear in subject position, it may also be raised. Raising from any complement position is excluded by the Binding Theory since the trace of the raised complement is not bound within its governing category which is the embedded S'. Since adjuncts never have a governor, I assume that the governing category for an adjunct is the least complete functional complex containing that adjunct—in other words the clause.

(96) a. *It seems in December to appear [S' that John would come t']
    b. *It seemed to Mary to appear [S' that John gave a present t']

The facts about PPs in subject position are mirrored by the group of NP-adverbs made up of the temporal and locative pro-forms: now, then, when, here, there, and where. Like PPs, these may not normally appear in subject position, whereas other nouns that may appear as bare-NP adverbs may. The following examples, from Larson, illustrate these two facts:

(97) a. *Then/That hour elapsed quickly
    b. *When/Which hour elapsed quickly?

Larson proposes that while most bare-NP adverbs have a default oblique Case which is the result of lexical marking on the head noun, temporal and locative pro-forms appear in the lexicon as NPs with invariant (inherent) oblique Case. Under the assumption that default Case, as the name indicates, is used only where a structural Case is not available, elements which may bear default Case may also appear in Case-marked positions since the default Case option may not be selected and thus there is no Case conflict. If temporal and locative pro-forms

286
have an inherent Case-feature, and not a default one, then, argues Larson, the fact that they cannot appear in subject or in other Case-marked positions follows from Case conflict:

(98)  a. I am spending *now/*then/that day at the beach
     b. Penguins inhabit *here/*there/few places
     c. *there's/*now's/*there's/*here's/yesterday's lecture

Inherent Case-marked NPs may appear as the object of a preposition, however. Larson suggests that this is because there is no Case conflict in this situation since prepositions assign oblique Case and the pro-forms then, etc., have inherent oblique Case.

(99)  a. before then/now
     b. under here/there

This analysis is problematic for the notion of generalized Case conflict being developed here. Under this view of Case conflict, even two identical Cases may not cooccur in the same A-chain. There is reason to believe that temporal and locative pro-forms do not in fact have inherent Case, but rather have default Case like other bare-NP adverbs. Temporal and locative pro-forms, like PPs, may occur in subject (or complement) position of a copular construction, as is illustrated in (100a-c), or raised from such a position, as in (100d-e).

(100)  a. Now is the time to decide
        b. The time is now
        c. Here is where I draw the line
        d. Then sounded like as good a time as later
        e. Then turned out to be the wrong time to apply

Now, if these elements have an inherent oblique Case, the sentences in
(100) would be ruled out even by "traditional" Case conflict since in each case the pro-form has two distinct Case-features. It seems correct then to suppose that temporal and locatives pro-forms have only default Case, like other Ns that may appear as bare-NP adverbs. What is different about them is that apparently they may bear only adjunct $\theta$-roles--i.e., they are excluded from argument positions. I assume that adjunct $\theta$-roles are those which are assigned by the adjunct rule or by a preposition, whereas argument $\theta$-roles are assigned by a verb. The NP-complement of verbs like spend and inhabit is assigned a $\theta$-role by the verb and hence now, there, etc., may not appear in this position since they may bear only adjunct $\theta$-roles. These observations imply that the subject and complement of a copula construction may bear adjunct $\theta$-roles: this would explain why both PPs and adverbiacl pro-forms may occur in these positions. Perhaps $\theta$-role assignment in identity structures involves merely checking that the semantic features of the subject NP and the predicate NP are identical or sufficiently compatible. The $\theta$-role is the bundle of semantic features of the NP in question. There is thus no assignment of an argument $\theta$-role and hence adjunct $\theta$-role bearing elements such as PP and adverbiacl pro-forms may appear.11

3.4 NP-Movement and Case Uniqueness

If Case uniqueness is a property of $\alpha$-chains, as has been suggested here, then there is a clear prediction to be made with respect to NP-movement. Specifically, we should expect NP-movement to be excluded where both a trace and its antecedent are in Case-marked
positions (cf. here, Sportiche 1983:chapter 2). This section will be devoted to exploration of this prediction. Raising out of non-infinitival clauses will be the focus of sections 3.4.1 - 3.4.3 and oblique passives will be taken up in section 3.4.4.

3.4.1 Raising out of Noninfinitival Clauses

Raising out of noninfinitival clauses can potentially be blocked in more than one way in the framework reviewed in chapter 1. Since NP-traces are anaphors, they must thus be bound within their governing category according to Condition (A) of the Binding Theory. (101) is excluded in this way. The trace of NP-movement is governed by AGR and therefore must be bound within the embedded clause. It has no antecedent within this clause and hence the structure violates the Binding Theory.

(101) *The boys seem [g t₁ AGR eat a lot]

Notice, however, that in a language in which AGR is attached to the verb in the syntax and hence prior to the application of the Binding Theory conditions, such NP-movement would not violate the Binding Theory. This is because if AGR has undergone affix-hopping, then the subject position is un governed and the governing category for an element in that position "moves up" to the next clause. Postulation of rule \( R \) (= affix-hopping) to apply in the syntax is one of the fundamental features of the Jaegglı (published in 1982)/Chomsky (1981) analysis of null subject languages. It is proposed that the fact that null subject languages are able to have "free subject inversion" is a result of \( R \) applying in the syntax and thereby allowing Case assignment

289
to the postverbal subject. Thus, Spanish (102a) would have a structure something like that in (b):

(102)  a. Salió Juan 
 b. \( \lambda V - AGR \ NP \)

Languages in which \( R \) is not allowed to apply in the syntax (but only at PF) cannot have postverbal subjects because these would have no way of getting Case from AGR which does not govern the postverbal position if it remains in situ.

(103)  a. *Left John/ *Est parti Jean
 b. \( \lambda AGR \ [\text{vp} V \ NP] \)

Although Spanish, for example, does allow \( R \) to apply in the syntax, raising out of noninfinitival clauses is still impossible. This is because complementizers are obligatory in tensed clauses and the presence of a complementizer blocks proper government of the NP-trace—in other words, we have a banal case of a 'that-t' violation and examples like (104) are thus excluded by the ECP.

(104) *Los muchachos parecen que \( t_1 \) comen-AGR mucho

Thus, as Grosu and Horvath (1984) note, while (110) is excluded solely by the Binding Theory (since complementizers are optional in English), (103) is excluded solely by the ECP. A real test case, they continue, would be a language in which \( R \) applies in the syntax and complementizers are not obligatory. G & H suggest that such a situation would be expected to result in grammatical raising out of a noninfinitival clause and argue that this prediction is borne out in
Romanian. This result is incompatible with the hypothesis that Case is a bijective relation. I will argue that an alternative analysis is available for the Romanian data. Before turning to the Romanian case, let us reconsider once again raising in Hausa, which will be shown to give further support for Case uniqueness as a property of A-chains.12

3.4.2 Raising in Hausa Revisited

It is by now well known that the null subject parameter is in fact independent of the 'R in syntax' parameter (cf. in particular Safir, 1982). That is, null subject languages do not necessarily allow postverbal subjects, as had been previously claimed. Hausa, as it has been already noted, is a null subject language, yet not only does R not apply in the syntax, it in fact generally does not apply at all. In other words, there is no affix-hopping. Or, more simply, INFL in Hausa is not an affix; rather, it is an independent word. Linearly, it appears between the subject and the verb, but there is no evidence whatsoever that it is a clitic on the verb. Clitics in Hausa often show polarity in tone with the tone of the adjacent syllable of the host word. No such phenomenon is found between INFL and V; the tones of INFL remain constant. More conclusive evidence is found by looking at the distribution of a set of particles referred to as "modal", "adverbial" or "emphatic" particles. These particles, which have no simple translation in English, may appear basically anywhere in a sentence, except between a clitic and its host. As noted in chapter 1, the fact that they may appear between INFL and V is strong evidence that INFL is not cliticized to the V. The same can be said about hypothetical cliticization of INFL leftward since modal particles may
appear between the subject and INFL. (105) illustrates the
distributional restriction of modal particles to non-clitic
environments, and (106), the fact that they may occur between INFL
and V.

(105) a. Naa san (fa) Muusa
   1s know PRT M
   'I know Muusa'

   b. Naa san shi / *san fa shi(i)
      1s know him(C1) know PRT him(C1/indep)
      'I know him'

   c. An nuuna hootoo ga (fa) Audu
      indef show photo to PRT A
      'Audu was shown a picture'

   d. An nuuna hootoo garaeeshi / *ga(rea) fa shi(i)
      indef show photo to-him(C1) to PRT him(C1/indep)
      'A picture was shown to him'

(106) a. Naa (fa) goodee
   1p PRT thank
   'I thank (you)'

    b. Kun (da) sanii
       2p PRT know
       'You know'

Not unsurprisingly given the above observations, Hausa does not allow
"free subject inversion" of the type that exists in languages such as
Italian and Spanish. Postverbal subjects are allowed by some speakers
(perhaps, dialects), but only with a pause intonation and if the
subject is definite/specific:

(107) a. *Taa tafi Kanoo, Aabu
    3sf go K A
    '(she) went to Kano, Abu' (Answer to: 'Where's Abu?)

    b. *Taa tafi Kanoo, wata yaarinyaa
       3sf go K a girl
       '(she) went to Kano, a girl'

It may reasonably be concluded that (107a) is a case of right

292
diallocation and not free subject inversion since this letter has no such conditions. This is as expected since there is generally no \( R \) at all in Hausa and thus no way for a postverbal subject to be assigned Case.

It is also not surprising that, as was seen in chapter 1, raising is generally excluded in Hausa even though complementizers are optional in all types of clauses. (Recall that Hausa has no infinitival clauses.)

\[
\begin{align*}
\text{(108) a.} & \quad e \ yaa \ kamaataa \ i\!\!g \ Aisha \ ta \ gama \ aikintal \\
& \quad 3sa \ be-necess \ A \ 3sf \ finish \ work-her \\
& \quad 'It's \ necessary \ that \ Aisha \ finish \ her \ work' \\
\text{b.} & \quad *Aisha_1 \ taa \ kamaataa \ i\!\!g \ t\!\!i \ ta \ gama \ aikinta \\
& \quad A \ 3sf \ be-necess \ 3sf \ finish \ work-her \\
& \quad 'Aisha \ must \ finish \ her \ work'
\end{align*}
\]

Since there is no \( R \) and no infinitives in Hausa, the governing category for a subject will always be defined by its AGR, correctly excluding anaphors of all types from subject position.

What is of interest for the matter at hand--Case uniqueness effects in A-chains--is the one case in Hausa where INFL does undergo \( R \). In section 9 of chapter 1, several arguments were given for considering the copula \( nee/cee \) to be an instantiation of INFL, though a defective one in that gender, but not person and number, is marked and no tense distinctions are made. The clitic nature of \( nee \), besides the ordering with respect to the predicate XP, was shown by the polarity which exists between the tone of the copula and that of the final syllable of the predicate XP. Affix-hopping of \( nee/cee \) produces structures like those in (109):

       b.  Wannân [R, tî [np mootârmaa-cēe1] ]

A fact about nee/cee sentences not mentioned above, but which now
becomes relevant, is that there is reason to believe that nee/cee is
not a nominative Case-assigner. It can first be pointed out that this
conclusion would not be surprising given the defective morphological
marking of both phi- and tense features and the role these have been
seen to play in the possibility of nominative Case assignment. To see
that this conclusion also has syntactic motivation, assume first that
nee does assign nominative Case. If this were true, then we would
expect that if R were to apply in the syntax, then free subject
inversion should be possible. In fact, free subject inversion is no
more allowed in copular sentences than it is in regular tensed clauses.
(110), without a strong intonation break, is completely unacceptable,
on a par with (107) without the pause.

(110)  *Maalásamaa cee Aîsha
teacher  COP A
 'Is a teacher Aîsha'

If nee is not a nominative Case-assigner, the question of how an NP in
subject position gets Case arises. It seems reasonable to assume that
there is a rule of default nominative assignment to subjects of
equational sentences, just as must exist in equational sentences in
languages such as Arabic where (at least in some tenses) there is no
copula at all. It can be noted that nominative Case (which is
morphological in Standard Arabic) is also the default Case in A’-

294
positions (cf. Ayoub, 1981, and Boron and Tuller, 1985).

The relevance of the ungrammaticality of (110) becomes clear when it is recalled that in at least some dialects of Hausa, raising out of copular sentences—and there only—is acceptable:

(111) a. e yaa kasancee yaarinyar 'yar mahaucii cee

3sa happen girl-the daughter-of butcher COP

'It happens that the girl is the butcher’s daughter’

b. Yaarinyar taa kasancee [s t̪i 'yar mahaucii cee]
girl-the 3sf happen daughter-of butcher COP

'The girl happens to be the butcher’s daughter’

It was shown that a simple account of this dialect difference can be given: for speakers who accept (111b), R may take place in the syntax and for those who do not, R may apply only in PF. Now if R may apply in the syntax, then (120) might be expected if nee is a nominative Case-assigner. Its general ungrammaticality supports the idea that nominative Case is assigned by default to the subject position only. This result is in conformity with the Case uniqueness hypothesis since, as was seen above, one of the essential properties of default Case assignment is that it is optional. Hence the A-chain ‘yaarinyar...t’ in (111b) has a single Case feature—that assigned by the matrix INFL to the matrix subject position.

Summarizing, I am suggesting that the particular constellation of facts associated with the phenomenon of raising in Hausa supports, albeit indirectly, the principle that A-chains may not contain more than one Case-feature. The single case of raising is also the single case where nominative Case is assigned by default, a situation which is not accidental on this analysis.
A similar analysis might be offered for Chinese, which according to Huang (1982) has raising out of tensed clauses. It is independently argued by Huang that INFL in Chinese has no AGR and noted that tense is not systematically marked. If these facts indicate that INFL is not a nominative Case-assigner, as was argued for Hausa, then the fact that raising out of tensed clauses is possible follows since there would be no Case uniqueness violation. Nominative Case assignment is then assigned by default in tensed clauses with lexical subjects.

3.4.3 Raising in Romanian

The conclusion reached in Grosu and Horvath (1984) is exactly what one would not expect if Case uniqueness is a property of A-chains. It is suggested there that since neither the Binding Theory nor the ECP is violated, it is quite expected that raising should occur out of the one type of clause in Romanian in which complementizers are not obligatory—the subjunctive. Romanian, like Spanish and Italian, allows postverbal subjects, and thus the Binding Theory would not prevent raising out of a tensed clause. (112b) is an example of raising out of a subjunctive clause.

(112) a. S-a nimerit ca toți băieții să fie bolnavi refl have happened that all the boys SUB be sick 'It happened that all the boys are sick'

b. Toți băieții a-au nimerit (*ca) tă să fie bolnavi all the boys refl-have happened that SUB be sick 'All the boys happened to be sick'

If Case uniqueness is correct, it must be that the A-chain ‘all the boys ... t’ in (112b) somehow does not have two associated Case-features; otherwise, we would expect all raising structures like that
in (112b) to be out as violations of Case uniqueness. I would like to suggest that an account of (112b) compatible with Case uniqueness is available.

An important fact about raising out of subjunctives in Romanian is that the subjunctive is not like any other noninfinitival clause in Romanian nor does it have the same status as the subjunctive typically has in Romance languages. An often noted fact about Romanian (and languages such as Albanian and Bulgarian) is that the role of the infinitive has been/is being taken over by the subjunctive (perhaps under the influence of Greek which underwent this process a long time ago--cf. Rosetti (1973)). Purposive clauses and control structures are instances of this change. So, for example, the Romanian way to say 'I want to eat' is literally 'I want that I eat(SUB)' (Vreau să mențin), as in Hausa. Perhaps related to this is the fact that the subjunctive paradigm in Romanian is defective in comparison to other INFL forms. In the past subjunctive, for example, AGR is not marked at all and, in the present subjunctive, the third person forms show no number distinction. Given this and the assumption that the subjunctive (in all languages) has null tense features (cf. discussion in chapter 1), we may conclude that the entire INFL node in Romanian is underspecified. Although AGR is specified in some tenses for some persons, it is not at all unusual for it to be the presence or absence of paradigmatic distinctions to be the relevant factor--cf., for example, Morin & Wehrli (n.d.) on the null subject parameter in French.

I take the above facts to indicate that the subjunctive INFL in Romanian does not assign Case to the subject position since it is
lacking both tense features and (paradigmatically complete) agreement features, the two types of features argued to be involved in the assignment of nominative Case. It may be concluded that nominative Case is assigned by default to the subject position of subjunctive clauses much like was suggested for nominative assignment in copular constructions in Hausa and all tensed clauses in Chinese. This permits an analysis of raising out of subjunctive clauses which is analogous to that given for raising in Hausa and Chinese; namely, raising is allowed out of only subjunctive noninfinitival clauses because only in subjunctive clauses is Case assignment to the subject position the result of default Case assignment. Since default Case assignment is inherently optional, the A-chain formed by raising will necessarily (because of Case uniqueness) contain only the Case-feature assigned directly in the raised position. Thus, sentences like (112b) can be attributed to the defective nature of the subjunctive INFL in Romanian.13

The analysis of Romanian sketched out here is compatible with Case uniqueness. The advantage of assuming Case uniqueness is that in forcing the view of the Romanian subjunctive as being defective with respect to nominative Case assignment (a view which was shown to have independent motivation in the language), we are also forced to avoid the rather suspicious conclusion inherent in Grosu and Horvath's analysis that it is accidental that the one case of raising out of a noninfinitival clause in Romanian just happens to be that out of a subjunctive. The analysis given here predicts that this is not accidental and that it is due to the fact that the subjunctive is being
reanalyzed as a clause in which nominative Case is not assigned. This
seems to be at least intuitively correct: it seems highly unlikely that
a language similar to Romanian but having an optional complementizer in
the indicative would allow raising out of such complements. Our
analysis predicts this situation not to occur.

Case uniqueness thus excludes in principle raising out of a
nonininfinitival clause with a nominative-assigning INFL in languages
having R in the syntax and optional complementizers—even though such
raising would be allowed by the Binding Theory, the ECP, and a locality
condition on chains (cf. Lasnik, 1985). Although such a clear case has
not been presented here, I believe that the behavior of Romanian
subjunctive raising points once again towards the validity of the
hypothesis that Case in A-chains is a unique relation.

3.4.4 Non-nominative Passives

Another construction involving NP-movement, and hence formation of
A-chains, is the passive. This is thus another construction that is of
interest in our exploration of the consequences of requiring A-chains
to bear at most one Case-feature.

Following Marantz (1981) and Chomsky (1981), we have assumed that
the defining properties of syntactic passives are that verbs with
passive morphology assign no subject 9-role and lose their ability to
assign accusative Case, presumably because the feature [-N] is lost.
It follows on this analysis that movement of the object NP of a passive
verb is both possible and obligatory, at least in a language like
English. It is possible since the resulting A-chain has one 9-role
only (that of the object position), in conformity with the θ-Criterion. NP-movement here is furthermore obligatory since the object NP has no Case in situ and thus must move to the subject position, to which Case is assigned as in any tensed clause, in order to satisfy the Case Filter:

(113) a. *(It) was written this book last year
    b. [NP this book] was written t₁ last year

Notice that the A-chain in (113b) ‘this book ... t₁’ also necessarily satisfies Case uniqueness. Since passive participles do not assign Case, the only Case-feature associated with the passive A-chain is the nominative Case assigned by INFL to the subject position. It might seem, then, that passive constructions in fact quite banally conform to Case uniqueness.

There are, however, passives in languages having overt Case marking which render this conclusion more interesting. In languages like German, Ukrainian, Icelandic, etc., the argument of a verb may retain its regular A-position Case under passive. The German sentences in (114) illustrate this fact. The verb ‘help’ takes a dative direct object, as in (114a). And, even when this object is passivized, it still shows up with dative Case, as in (114b).

(114) a. Johan halfte mir
    J helped me-DAT
    b. Mir/*ich wurde geholfen
    me-DAT/me-NOM was helped

It would seem then that the passivized NP in (107b) is in a position to receive two Case-features—its dative feature, which surfaces morphologically, and the nominative Case-feature assigned to the
subject position by INFL. Thus, these cases appear to present prima facie counter-examples to the hypothesis that A-chains may not be associated with more than one Case-feature, or even "traditional" Case conflict, for that matter. In fact, it can be shown that these cases are not problematic at all in that it has independently been argued that either (1) the "passivized" NP does not actually move to subject position and /or (2) nominative Case is not assigned to the subject position in such situations. The result is that the NP is not assigned nominative Case and hence has just one associated Case feature, in conformity with Case uniqueness and lending support to its versacity.

To illustrate these claims, consider first passives in Ukrainian which are discussed by Sobin (1985). Sobin notes that Ukrainian has English-type passives in which the passivized NP takes on nominative Case and the passive participle agrees in Case and phi-features with the subject:

(115) a. Cerkva bula zbudovana v 1640 roc’i
        church+fem.nom be+past+fem. build+part.+fem.ag. in
’The church was built in 1640’

There are also passives where the verb has neuter agreement and either the object remains in situ with its regular object Case or, still retaining this Case, it is preposed to the beginning of the sentence. These two possibilities are shown in (116a,b), respectively.

(116) a. Bulo zbudovano cerkvu
     be+past+neut. build+part.+neut. church+fem.acc
As Sobin points out, these facts indicate, among other things, that absorption of accusative Case by the passive morphology is not automatic in all languages. While it is obligatory in English, the facts of (110) show that it is optional in Ukrainian, or perhaps that passive participles in Ukrainian have an optional Case-feature. (This is reminiscent of Borer's (1986) analysis of ergative verbs as optional Case-assigners.) The object NP may remain in situ since it can receive Case there, and the subject NP may be left empty since Ukrainian quite generally allows null subjects. Since the subject position is a $\Theta$'-position, the verb has the neuter agreement found on verbs or adjectives in weather expressions, which also have null subjects.

(117) a. e bulo duže dušno
    be+past+neut. very sultry-neut.
    'It was very sultry'

b. S'ohodn'i e dušno
    today(Adv) sultry-neut.
    'Today is sultry'

This same neuter agreement appears even when the accusative object is preposed, indicating that the subject is in fact an empty pleonastic element and therefore that the construction is entirely analogous to (117b). That is, -the- accusative NP in (116b) is not in subject position, but rather in an S-initial position as a result of the same sort of preposing rule that fronts an adverb, as in (117b). Sobin
gives further arguments that the accusative NP is not the subject in (116b). It may not be controlled, unlike other subjects, and it takes on genitive Case under negative, whereas subjects (including nominative passivized NPs) do not.

While Sobin makes clear that the fronted NP in neuter passives is not the subject, the question of why it cannot be moved to subject position is not addressed. Case uniqueness offers an immediate answer to this: movement of a Case-marked NP to subject position would violate the bijective nature of the Case relation since the subject position is a Case-marked position. Therefore, non-nominative passives in Ukrainian actually provide empirical support for Case uniqueness, rather than constituting a counter-example to it.

We turn now to some other non-nominative passives, this time in Icelandic (cf. Andrews 1976, Thráinsason 1979, and Zaenen et al 1985) and German (cf. den Besten 1985 and Safir 1982) where objects of verbs which normally assign dative or genitive Case always retain that Case when passivized. Various syntactic tests show that at least in Icelandic passivized oblique NPs do behave like subjects (cf. above references). Despite this, these facts do not seem to constitute obvious counter-evidence for the hypothesis that Case bijection holds of A-chains. The reason is that there is evidence that nominative Case is not necessarily assigned to the [NP,S] in passives. When an oblique NP is passivized in a double object construction, nominative Case shows up on what would otherwise be the accusative object, as the following Icelandic examples (from Zaenen et al) and German examples (from den Besten) illustrate:
(118) G: dass meinem Onkel dieses Buch zugeschickt that my uncle(DAT) this book(NOM) sent 'that my uncle was sent this book'

I: Konunginun voru gefnar ambättir the-king(D) were given(f.pl.) maidservants(N.f.pl.) 'The king was given female servants'

But, where the accusative NP is passivized, it becomes nominative and the dative NP is dative:

(119) G: dass dieses Buch meinem Onkel zugeschickt that this book(N) my uncle(D) sent 'that this book was sent to my uncle'

I: Ambättin var gefin konunginun the-maid servant(N.sg.) was given(f.sg.) the-king(D) 'The female slave was given to the king'

These facts follow if, it is assumed that passive morphology absorbs only accusative Case and that either nominative Case assignment is by default in these languages (cf. Safir 1982 and earlier work by den Besten), or that, adopting the analysis of den Besten (1985), it is assumed that there is a mechanism which permits Case transmittance to non-Case-assigners such that nominative Case is eventually assigned to the [NP,V'] in examples like (118). Either way the [NP,S] may be left Caseless. Den Besten's analysis applied to ECM verbs is also compatible with Case bijection. It is suggested that ECM verbs such as lassen take infinitival complements which are like passives in that the infinitive also absorbs accusative Case (and does not assign a θ-role to its subject). As in (118), structures of this type allow a dative subject. The accusative Case assigned by lassen ends up on the [NP,V'] (das Buch) via the marked Case-assigning process referred to above. In
our terms, this leaves the [NP,S] position Caseless, thereby permitting the dative NP to be moved there.

\[(120)\]  
a. Er hat [g dem Karl (von Johann) das Buch bringen] lassen he has (to) K(D) by John the book (A) bring let 'He has let Charles be brought the book (by John)'

b. er hat [g Johann dem Karl das Buch bringen] lassen he has J(ACC) (to) K(DAT) the book (ACC) bring let 'He has let John bring the book to Charles'

What is crucial for our discussion here is that this analysis, proposed in order to account for word order facts of German, has as one of its by-products the result that A-chains will never have more than one Case-feature.\(^{14}\)

Summarizing this section, it has been argued that positing Case to be a bijection relation derives the core CRP effects in a way which makes them entirely parallel to traditional instances of Case conflict, thereby unifying the two phenomena under a deeper principle. It was then suggested that predictions of Case uniqueness with respect to NP-movement seem to receive some support by the constellation of facts found in cases of raising out of noninfinitival clauses and non-nominative passives.

4. Bijection Deformations
4.1 Motivating Abstract Elements and Structures

In this chapter we have argued that lexical selection is a bijective relation, such that for each feature-assigner, there must be a single feature-bearer and vice-versa. It has furthermore been suggested that there is evidence that transfer of features (i.e.
assignment) takes place under government which incorporates the notion of unambiguous path. These assumptions account for the proper assignment of the lexical features Case and θ-role. It is possible to speak of the conditions that must be met in order for assignment to be valid as a canonical lexical feature assignment relation which might be summarized as in (121).

(121) Given P, a relation between α, a feature-assigner, and θ, a feature-bearer, where P is bijective and α governs θ, then P is a canonical lexical feature assignment relation.

Clearly the relation P in (121) is not always as straightforward as described there. That is, the canonical assignment relation may be deformed by other considerations. One example is the proposed requirement that wh-elements, quantifiers, and focussed elements, which are interpreted as operators at LF, must show scope indication in order for proper semantic interpretation to take place; thus languages must have at least LF quantifier raising and wh-Movement, and may have syntactic wh-movement as well. The result is that the lexical structure required by (121) is not isomorphic to either the structure at LF or that at surface structure. One can in fact define the object of syntax to be to determine what sorts of deviations of the canonical relation are allowed and which aren't. The lack of isomorphism between lexical requirements and surface structure has led, as we have seen, to the postulation of abstract elements and structures.

One of these abstract analyses involves the notion of empty category. Continuing with the example of wh-movement, it is reasoned that in a structure like that in (122), it is the empty category which
satisfies the feature-bearer half of the canonical relation.

(122) What did you find a

The feature-assigner find does govern a and thus (121) is satisfied.

The question then becomes when it is that empty elements may satisfy the feature-bearer half of the canonical relation. The notion 'Move-α' and formation of A' and A-chains, and principles such as subjacency and the ECP, are proposed to answer this question. Thus a in (122) may be a feature-bearer by virtue of the fact that it is coindexed to a sufficiently local antecedent and is in a proper structural configuration for identification. This is thus one way in which the canonical relation may be distorted.

Another situation in which the feature-bearer may be empty is in the subject position in null subject languages. It is suggested that an empty category may be a feature-bearer here since there is once again some sort of auxiliary feature-bearer, analogous to the antecedent in 'Move-α', which is the "rich" agreement of INFL.

(123) a taa tafi Kanoo
    3sf go K
    '(she) went to Kano'

The impossibility of such structures in English, it is suggested, follows since AGR is not sufficiently rich in English, and hence there is no auxiliary feature-bearer. The notion of rich AGR being some sort of auxiliary feature-bearer is particularly clear in languages such as Standard Arabic where full verbal agreement may appear only if the subject is null.
(124) a. katabuu a t-taqriira
    wrote-3p the-report
    'they wrote the report'

b. *katabu l-wuzaraa'u t-taqriira
   wrote-3p the-ministers the-report
   'The ministers wrote the report'

c. kataba l-wuzaraa'u t-taqriira
   wrote-3s the-ministers the-report
   'The ministers wrote the report'

The complementarity between full agreement and appearance of a lexical subject, illustrated in (124), follows from (121) if both full AGR and lexical subjects are feature-bearers in Standard Arabic (cf. Borer and Tuller, 1985).

We have reviewed a couple of examples of cases where the existence of a canonical feature-assignment relation and the projection principle (which requires lexical properties to be present at all syntactic levels) leads to the postulation of abstract analyses, and, in particular, of empty categories. The aim of the analyses informally reviewed is to determine under what circumstances an empty element may satisfy the feature-bearer half of the canonical relation P.

Let us review now in a systematic fashion what the possible surface deviations from the canonical relation P are. On the one hand, either the feature-bearer or the feature-assigner may be null. A null feature-bearer with an overt assigner is precisely the situation we have just illustrated here. The other way in which the canonical feature relation may be deviated from would be a situation in which there is one feature-assigner, but more than one feature-bearer, or more than one feature-assigner for one feature-bearer. These
imaginable surface deformations of P are summarized in (125).

(125) Feature-assigner : Feature-bearer

   a. 1 0
   b. 0 1
   c. >1 1
   d. 1 >1

An obvious instance of (125d) is the so-called double object construction, as in English (126).

(126) I showed Mary the picture

It would seem that in (126), we have a single feature-assigner showed and two feature-bearers Mary and the picture. This situation does not appear to conform to (121). Why is it a possible structure then?

I have argued elsewhere (Tuller 1984) that Hausa also has dative structures of the surface form 'V NP1 NP2'. It was suggested there that an analysis incorporating an extension of Kayne’s (1984) dative small clause analysis (for English) accounts in an interesting way for Hausa dative structures, and, in particular, for minimal differences with respect to extraction of NP1, which is possible in all small clauses in Hausa, but only in non-dative ones in English:

(127) a. *Who did you show e a picture?
    b. Waa ka nuunaa wa e hootoo?
(128) a. Who do you consider e a fool?
    b. Waa ka d’aukaa e waawaa?

I will briefly summarize that analysis here (though see the references cited above, as well as Mouchewah 1984, for detailed
arguments for dative small clauses). Kayne argues that double object constructions in English consist of small clauses whose subject contains an empty preposition, which serves as a Case-transmitter, thereby maintaining the one-to-one relation between feature-assigners and feature-bearers, as in (129):

(129) show [s.c. [pp & [NP1 Mary]] [NP2 the picture]]

English allows sentences like that in (126) precisely because prepositions in English have the property of being able to assign Case in the same way as verbs (i.e., structurally). It follows that, in a language like French, where prepositions assign oblique Case rather than structural Case, double object constructions are impossible. The ungrammaticality of extraction of NP1 in English (cf. (127a)) also follows from (129) since NP1 is embedded on a left branch, a position from which there is no path to a possible antecedent under Kayne's approach to the sanctioning of empty categories.

A dative small clause analysis has interesting results for Hausa as well. Notice first of all that a 'V PP NP' structure for canonical dative constructions in Hausa, such as the example in (130), would in fact be excluded by lexical feature-assignment bijection since the [NP,PP] is in a position to receive two Case features, one from P and one from V.

(130) Ali yaa nunnaa wa Aisha hootoo
A 3sm show to A  photo
'Ali shows Aisha a picture'

The ill-formedness of a 'V PP NP' structure is in fact confirmed
by facts of Hausa which show that the indirect object marker \textit{wa} is not the head of a PP (at least at S-structure), but rather an affix on the verb (cf. Tuller \textit{op. cit.}). This permits an analysis of these structures as containing dative small clauses which are different from English in that there need be no empty preposition since the affix \textit{wa} is a feature-assigner, and thus the one-to-one relation between assigners and bearers is maintained:

\[(131)\]

\[
\begin{array}{c}
V' \\
V-\text{wa} & NP_1 & NP_2
\end{array}
\]

A crucial result is that extraction of \(NP_1\) is allowed (cf. (127b)), since this position is not embedded on a left branch, as it is in English dative small clauses.

I propose to explore in the remainder of this study certain other cases of (125). These areas will be investigated via in-depth examination of certain relevant Hausa constructions, which will be compared with similar phenomena in other languages. The constructions I have in mind and their particular theoretical interest will be briefly introduced in the remaining subsections of this section. It is hoped that analysis of these constructions will contribute to the understanding of parametric variation of these phenomena and to the understanding of the constructions within the syntax of Hausa. In other words, constructions have been selected for either their cross-linguistic interest or for their interest within the grammar of Hausa, though hopefully these will be shown to coincide. It can be noted here
that, given the modular character of the model of UG being adopted here, we should not expect that there should be one single analysis or "solution" for all bijection "violations". Rather, we might expect that sanctioning of a particular non-canonical lexical feature relation will be the result of the interaction of various parameters and principles. It is these which I will be seeking to specify.

4.2 Null Feature-Bearers

One Hausa construction corresponding to (125a) in which there is no apparent auxiliary feature-bearer (i.e. no rich AGR and no apparent A' or A-antecedent) is that illustrated in (132), where the feature-assigner karantaa 'read' has no overt feature-bearer or auxiliary feature-bearer.

(132) Ali yaa karantaa e
     A 3sm read
     'Ali read (it)'

Structures like that in (132) are quite common in Hausa, under appropriate discourse conditions. Null objects in various languages have received attention in both the GB literature (e.g. Huang 1982, 1984 on Chinese) and the "discourse" literature (cf. Jaggar 1985 on Hausa). Superficially related phenomena of zero anaphora which occur in English have been widely discussed. Here, I am referring to lexically governed "null complement anaphora" (e.g. 'I noticed') and "non-specific/indefinite object deletion" ('I already ate'). It will be argued in chapter 3 that null objects cannot be assimilated with any of the superficially similar constructions in English. Moreover, it
will be shown that Huang's variable analysis for null objects in
Chinese does not extend to Hausa. The particular theoretical interest
of these structures in Hausa, then, is that they appear to constitute a
genuine case of an argument pro with no local identifier. An analysis
will be developed which accounts both for the Hausa data (which also
includes pro objects of certain nouns, similar to what is possible for
certain prepositions in French) and the differences between it and
other languages such as Chinese, French, Portuguese, and English.

4.3 Multiple Feature-Assigners/Null Feature-Assigners

Romance causatives are one of the structures that comes to mind as
an instance of (125c). In the following French sentence, the NP Pierre
is apparently the feature-bearer of two feature-assigners fera and
téléphoner.

(133) Cela fera téléphoner Pierre à ses parents
that will-make telephone P to his parents

I will not add to the voluminous causative literature here. Causatives in Hausa are either lexical or biphraal, as in English, and
thus offer no theoretically interesting new facts to the matter at
hand. There are however other constructions which have been the
subject of much discussion in the Hausa literature which are relevant.

We propose, in chapter 4, to explore situations involving multiple
feature-assigners by examining the syntax of "auxiliary verb"
constructions in Hausa. Both the continuous INFL and various
aspectuals and modals in Hausa may appear with an NP or a VP
complement, a situation which gives rise to either multiple feature-
assigners for a single feature-bearer or an absence of a feature-assigner for a feature-bearer. There is evidence that while auxiliaries may appear as "regular" verbs, and hence may take NP complements, the continuous aspect-marker is located in INFL, but may take a (base-generated) empty V in its VP complement.

Thus, in overcoming the potential bijection violation, we are led to posit an empty feature-assigner, much in the way that empty feature-bearers (generally NPs) are also a consequence of bijection. It will be suggested that just as these elements are required for the same basic reason so are they sanctioned in the same basic fashion. Empty feature-bearers require some sort of related feature-bearer in order to be identified and empty feature-assigners require some sort of overt feature-assigner in order to be identified.
CHAPTER TWO NOTES

1 Phi-features, we assume, following Borer (1984), are inherent (lexical) properties of substantives (nouns) only. Other categories (e.g., verbs, adjectives) may acquire these features through agreement rules. This will be discussed in chapter 3.

2 As Ian Roberts has pointed out to me, small clauses of all types also may bear argument θ-roles. Thus, while non-clausal APs do not seem to be able to bear arguments θ-roles, as in (10), small clause APs can:

(i) I consider [s.c. these peas over-cooked]
(ii) Johni seems [s.c. t_i tired ]

Presumably the θ-role bearing potential of these APs here is due to their propositional character.

3 Morphologically, it is possible for there to be more than one Case-feature on an NP. An example of this from Quechua is discussed in Lefebvre and Muysken (1982). That these authors argue that the situations in which double Case-marking occur should be characterized as A'-chains is consistent with the claims I am making here.

Hale (1983) argues explicitly that the relation between the "lexical structure" (=argument structure) of a verb and its phrase structure is quite generally not biunique in Warlpiri since there are syntactically discontinuous expressions and there is widespread zero anaphora. He suggests that this is because the "configurationality parameter" in Warlpiri is set so that the Projection Principle holds of lexical structure only (whereas in configurational languages, the Projection Principle governs the relation between lexical structure and phrase structure.)

Hale notes, however, that "independent factors" may restrict the freedom accorded to non-configurational languages by the loose setting of this parameter. For example, zero anaphora may be restricted by a lack of verbal inflection. It isn't clear to me how these languages are fundamentally different from configurational languages which have similar restrictions presumably because of the Projection Principle.

Munro (1984) suggests that Pima and Chickasaw/Choctaw have various rules which move arguments to θ-positions which constitute Projection Principle violations. She suggests that this fact may be correlated with the fact that these languages also display diagnostic properties of non-configurational languages (extremely free word order and extensive zero pronominalization). In other words, such rules are
possible in these languages if it is assumed, following Hale (op. cit.) that the Projection Principle does not apply at post-lexical levels in these languages (though this conclusion appears to be in contradiction with Hale's claim that non-configurational languages lack NP-movement).

I will have nothing to say about "non-configurational" languages in this study or about apparent Projection Principle violations such as that in Piaa, etc. See Nassau (1985) for pertinent discussion of this topic and its interaction with Case theory.

4 Stowell (1981:161-2) argues that an explanation for these judgements based on an appeal to the fact that the clause is too "heavy" to appear other than sentence-finally is not adequate, because other constituents not subcategorized by the verb are free to appear after S':

(i) John knew that the law was unfair [before anyone else]
(ii) Paul mentioned to Bill that his shirt was dirty [last week]
(iii) Fran reported that the fish were alive [upon her return]

5 It is not possible to claim that the versions with na + S'-complement are analogous to English 'I doubt it that John is a liar', which might appear plausible given that Hausa does allow null pronominal objects. The reason is that na crucially cannot be inserted when there is a null object: 'Inaa son rakese' (lit.: I like-of sugar cane)/ 'Inaa soo e' (= I like (it))/ *Inaa son e. Cf. chapter 3 for further discussion.

6 The fact that S' must appear adjacent to the verb (at least at D-structure) is independently required if the verb must strictly c-command S' in order to assign it a 6-role, as was suggested in section 2.

7 I assume that the ungrammaticality of tensed and infinitival clauses as subject of an infinitive (cf. (46a,b) above) is not because of Case considerations since, as was observed, both may occur in a Caseless complement position. I will make no specific proposal here, however.

8 David Pesetsky has pointed out to me that Russian poses a problem for this part of my analysis. In Russian, prepositions assign oblique Case, yet structures equivalent to (76) and (77) are ungrammatical. I leave these as a problem for future study.

9 An analysis of be as an "ergative" verb with a small clause complement, as in (i) (as in work of Stowell), is compatible with our
remarks here.

(i) Under the table is [t_1] a good hiding place

10 Other cases of PP and adverb subjects, not limited to identity structures, are those referred to as "PP Substitution" in Emonds (1976:37) and which are apparently the result of subject postposing and PP or AdvP fronting:

(i) In each hallway is (hangs, has long stood) a large poster of Lincoln
(ii) Among the guests were (sat) John and his family
(iii) Upstairs is (stands, lies) all the wine we bought in France
(iv) Here will be (will stand) the memorial to the war dead

While "PP Substitution" structures are restricted to root contexts, as Emonds shows with examples like those in (v), this is not true of PP and Adv subjects in copular constructions which do not involve subject postposing, as examples like that in (vi) illustrate:

(v) a. *I have no idea how often among the guests were (sat) John and his family
   b. *That posters that in each hallway are (have long stood) subtly influence the children...

(vi) a. I have no idea why under the bed should be such a good hiding place
   b. That under the bed might be a good hiding place is all he could think about

These facts might be taken to indicate that "PP Substitution" is actually not substitution (which would violate the G-Criterion in any case), but movement of PP to Topic, since topics are also excluded in the contexts exemplified in (v). That PP subjects not in subject postposing contexts may appear in non-root contexts, then, would confirm that they are indeed in subject positions. Cf. Stowell 1981 for pertinent discussion.

11 Notice that this analysis provides further support for the conclusion above that verbs may subcategorize for an adjunct G-role. It was suggested that the locative associated with put is an adverbial G-role for which put subcategorizes. The fact that put may take a locative pro-form (e.g. 'I put the book right here') supports this in that adverbial pro-forms cannot appear in argument positions, as was seen in the spend, elapse, and inhabit examples.

12 I am assuming throughout that Case assignment may in principle apply at any level--D-structure, S-structure, or PF. However, it must

317
not be allowed to be interspersed between applications of 'Move-\(\alpha\). Perhaps this can be made to follow from some strict cyclicity constraint (cf. Vergnaud, 1982, chapter 2). The situation that must be excluded is one where an A-chain with one Case-feature is linked to an A'-position with a second Case-feature having its origin in the A-chain. Such a situation could arise if the following were allowed: In (i) nominative Case is assigned to the embedded subject prior to any 'Move-\(\alpha\). This NP then moves to the matrix subject position and then the matrix COMP, taking its Case-feature with it. Finally, nominative Case is then assigned to the matrix subject position. The result is an A-chain with one Case-feature.

\[(\text{COMP NP}_1 \ [s \ t_1 \ INFL \ ... \ [s \ t_1 \ INFL]] \ \ [\text{NOM}] \ \ [\text{NOM}] )\]

I will assume tentatively that Case-assignment applies on an S-cycle.

13 Some facts suggest that a potentially more interesting account might be available which takes the subjunctive complementizer ca to be a Case-assigner like English for. Cf. Tuller (1986)

14 The ECM facts are more problematic in Icelandic. As discussed in Andrews 1976, the equivalent to Icelandic (123) has nominative Case on the [NP,V']:

\[(\text{i}) \ a. \ \text{ég tel honum hafa verið seldir drengirnir} \quad \text{I believe him-DAT to have been sold-NOM the-boys-NOM} \]

\[b. \ \text{ég tel drengina hafa veriðsolda honum} \quad \text{I believe the-boys-ACC to have been sold-ACC him-DAT} \]

It would seem that nominative is a general default Case in Icelandic (cf. references in the text). But, if this is the case, then tel 'believe' apparently assigns ACC to the [NP,S] position even in (ia), contrary to our expectations, given Case uniqueness. These questions are part of ongoing research.
CHAPTER THREE: IDENTIFYING \textit{pro}

1. Introductory Remarks

1.1 Null Feature-bearers in Hausa

I begin investigation of various Hausa deformations of the bijective restriction on lexical feature assignment relations by considering the distribution of certain null feature-bearers. In Hausa, the direct object of transitive verbs, the object of certain nouns, and the subject of copular constructions, even though there is no apparent local overt "auxiliary feature-bearer" such as agreement features or an $A'(\cdot)$-antecedent. In each of these cases, then, the one-to-one character of the lexical feature-assignment appears not to be respected since there is a feature-assigner, but no (overt) feature-bearer. Examples of these are given in (1) - (3), respectively.

(1) a. Ali yaa karantaa \textit{\textcolor{red}{\textcircled{a} A 3sm read}}
    'Ali read (it)'

    b. Zan sāyaa \textit{\textcolor{red}{\textcircled{b} 1s buy}}
    'I’ll buy (it)'

    c. Yaaran baa sāa soo \textit{\textcolor{red}{\textcircled{c} children NEG3p like}}
    'The children don’t like (it)'

(2) a. Maalaamii yaa yi maganaa a kai \textit{\textcolor{red}{\textcircled{a} teacher 3sm do speech at head}}
    'The teacher talked about (it)'

    b. An sāa gujiyaa a ciki \textit{\textcolor{red}{\textcircled{b} indef put groundnuts at inside}}
    'The groundnuts were put inside (it)'

    c. Ali yaa booyee kudin\textit{\textcolor{red}{\textcircled{c} A 3sm hide money-his underneath}}
    'Ali hid his money underneath (it)'

319
(3)  a.  
   e Hausawa née
   Hausas COP
   'They are Hausa'

   b.  
   e maalaamaa cee
   teacher(f) COP(f)
   '(She) is a teacher'

   c.  
   e gaskiyaa née
   truth COP
   '(It) is true'

We would like to find answers for questions such as 1) why are null feature-bearers possible in (just) these positions, 2) what are the conditions on the occurrence of null arguments, and 3) why are these types of null arguments possible in some languages, but not in others?

1.2 Null Arguments, "Rich" Agreement, and the Position of INFL

There is an extensive GB literature on the phenomenon of null arguments, although until quite recently it has been mostly restricted to null subjects. Central to this work are studies by Jaeggli (1982), Rizzi (1982:chapter 4), and Chomsky (1981, 1982). Much of the investigation on null subject languages has been based on the intuitive idea put forth by Taraldsen (1980) that the possibility of a language having a null subject is related to the existence of "rich", overtly marked subject agreement on the verb in that language. Spanish and Italian, which allow null subjects, have morphological subject marking on the verb, whereas languages like English or French, which do not have full, regular subject marking on the verb, do not allow null subjects. Spanish (5a–c), where verb conjugation has systematic phonological realization, compared with French equivalents (5a–c),
where the verb conjugation has no systematic phonological realization, illustrates this point.

(4) a. *e comu mucho
eat-3s a lot
'(She/he) eats a lot'

b. e comen mucho
eat-3p a lot
'(They) eat a lot'

c. e como mucho
eat-1s a lot
'(I) eat a lot'

(5) a. Il/*e mange beaucoup

b. Ils/*e mangent beaucoup

The link between the null subject property and the presence of rich agreement is made in varying ways and in varying degrees of directness in the above-cited analyses. Jaeggi posits a rather indirect relation between the two phenomena. Supporting this position are the facts of languages like Russian and German, which have verbal inflection comparable to that found in Italian and Spanish and yet are not "pro-drop". German (6) illustrates this point.

(6) *(ich) frage 'I asked'; *(du) fragst 'You(s) asked'; *(sie)
fragen 'You(p) asked'; etc...

On the other hand, Borer (1981) presents strong evidence from Hebrew for the null subject/"rich" agreement link at least within a given language. Hebrew allows null subjects (in matrix sentences) only in those tenses and persons for which the morphological person-marker on the verb is fully specified. The present tense AGR is "defective" in that it contains markers only for number and gender, and the third person AGR acts like an unmarked person form. Null subjects are possible thus only in the first and second person of the past and
future tense. (7)-(9), where *(X) indicates that presence of the
pronoun is obligatory, illustrate these facts.

(7) a. *(ani) 'axalti 'et ha-banana
   I    ate  ACC the-banana

   b. *(ani) 'oxelet 'et ha-banana
      I    eat  ACC the-banana

   c. *(ani) 'oxal 'et ha-banana
      I    will-eat ACC the-banana

(8) a. *(atem) 'axaltem 'et ha-banana
     you-p  ate  ACC the-banana

   b. *(atem) 'oxlum 'et ha-banana
      you-p  eat  ACC the-banana

   c. *(atem) toxlu 'et ha-banana
      you-p  will-eat ACC the-banana

(9) a. *(hu) 'axal 'et ha-banana
     he    ate  ACC the-banana

   b. *(hu) 'oxel 'et ha-banana
      he    eats ACC the-banana

   c. *(hu) yoxal 'et ha-banana
      he    will-eat ACC the-banana

Similar facts are found in other languages; see for, example, the
discussion of Pashto in Huang (1984) and of Bani-Hassan Arabic in

When null arguments in positions besides [NP,S] are considered,
the picture becomes even more complex. While there are languages such
as Basque which allow null objects and also have object person-marking
on the verb, these two do not necessarily correspond. In Tuller
(1982b), I argued that Hausa has null direct objects, despite the fact
that there is no object person agreement on the verb whatsoever.
Reposo (1984) reports the same for Portuguese. Chinese, which has no person agreement of any kind, but null arguments of all kinds, is discussed in Huang (1984).

Thus, on the one hand, languages allowing null arguments may be either with or without rich agreement (e.g. Basque and Chinese, respectively) and, on the other hand, rich agreement languages may either disallow null arguments (e.g. German) or allow them (e.g. Basque, again, and Spanish, Italian, etc.). However, it seems wrong to conclude that the correlation is totally haphazard. Language internal facts such as those mentioned above from Hebrew and other languages plus the known histories of various languages such as French and English, which were pro-drop in the past and which also had richer agreement marking (cf. the discussion of French in Morin and Wehrli (n.d.), for example), indicate that the rich agreement/null argument correlation does have some validity.

Another property which was believed to be correlated with the null subject property is the S-structure position of INFL. It was argued that INFL may appear attached to the verb at S-structure in some languages and that this entails both the possibility of null subjects and the possibility of postverbal subjects (so-called "free subject inversion"). The null subject/postverbal subject correlation, proposed by Rizzi and developed in various ways by Jaeggli and by Chomsky, has since been shown to be inadequate (cf. Safir 1982). As was seen in chapter two, null subject languages do not necessarily allow free subject inversion. Hausa, where tensed INFL never appears attached to the verb, is nevertheless a null subject language. Interesting work by
Hyams (1983) on the null subject parameter in language acquisition also concludes that the two phenomena are unrelated. Another problem with the S-structure position of INFL as an explanation for the occurrence versus nonoccurrence of null subjects is that it has nothing to say about nonsubject null arguments.

In this chapter, I will try to provide an analysis of null arguments which satisfies the descriptive requirements mentioned here and which deals with the bijection "deformations" constituted by null arguments. Section 2, which was presented in preliminary form as Tuller (1984b), develops an analysis of null direct objects which is a modification of Huang's (op. cit.) zero topic analysis of null arguments in Chinese. This modification entails that null objects in Hausa, but not in Chinese, may be pro, correctly allowing null objects to occur inside "subadjacency islands" and wherever else overt object pronouns may occur.

In section 3, null complements to certain nouns are considered. To accommodate these facts, the analysis of section 2 is amended slightly, following certain insights of Rizzi (1986). Hausa null complement nouns are then compared to "Orphan prepositions" in French (Bouchard 1984, Zribi-Hertz 1984).

The Hausa null subject facts are examined in section 4. Though the distribution of null subjects in Hausa is generally parallel to that in other rich agreement languages like Italian, etc., there are constructions which are of particular interest in that this general pattern is not observed. Copular constructions, which allow only third person null subjects, will be seen to provide further support for the
pro identification analysis developed in the preceding sections. The phenomenon of "AGR-drop", whereby the subject marking of INFL may be null in certain aspects, is also considered. It is argued that the two registers which emerge from these facts stem from whether there is a null AGR, which must be identified, or no AGR, a left-over pan-Chadic feature in Hausa. Finally, the non-occurrence of pro as subject a small clause will be taken as further support for the parameters developed to account for the distribution of pro.

2. Null [NP,VP]

2.1 Introduction

Hausa regularly allows sentences like those in (1) above which contain a transitive verb having no phonologically realized object, as we have seen already in previous chapters. Null direct objects are permissible in Hausa in contexts where there is a nonhuman referent which is in TOPIC (left dislocated), in the preceding discourse, or pragmatically "present". Examples of null objects having syntactic, discourse, or pragmatic topics are given in (10).

(10) a. Kai, [top littehan nan] naa sha wahala da na karanta a hey book-the this is drink trouble when is read 'Hey, as for this book, I really suffered when I read (it)'

b. A: In naa baci "maelle" sai na dauki wannan 'If I drop a stitch, I use this' [picks up crochet hook]
   B: Da wannan zaa ki kaamaa e?
      with this FUT2sf catch 'With that, you'll catch (it)'
   A: Ii, haka nee
      'Yes, that's right'

c. [A: walks into a cold room with window open and says to B:]
   A: Kai, a rufa e!
      hey indef close
      'Hey, close (it)'
Examples of null objects whose referent is human can be found in texts (e.g. (11)), though they are much less frequent than cases where the referent is nonhuman (cf. Jaggar 1985).

(11) Sai dan Sarkin nan ya geya wa waziri yana son su neman masa ‘yar. Sarkin Waila Fadama da aure. Waziri ya geya wa sarkii. Aka neman masa g. aka ba shi g. Aka yi biki aka Rare. [Ism 1980:121]

‘Then the emir’s son told his vizier that he wanted them to try to arrange a marriage for him with the daughter of the emir of Waila Fadama. The vizier told the emir. They got (her) for him, they gave (her) to him. They had a celebration and that was that.

As has already been noted in this study, the speakers I have worked with neither produce nor accept as grammatical constructions with human null object (and, incidentally, are quite explicit about why).


‘Did you see Abdu Mamman’s book? Ali said that Aisha likes (it)’

b. ‘Kaa san Muussaa? Ali yaa cee wai Aisha tanaa soox e

‘Do you know Musa? Ali said that Aisha likes (him)’

I will show here that Hausa null objects cannot be identified with superficially similar “indefinite object deletion” or “null complement anaphora” constructions in English, which under many analyses do not contain a syntactic empty category in object position. Null objects in Hausa are true null objects, it will be argued, and have all of the properties of empty pronouns, facts which will be suggested to follow from settings of a locality parameter on pro identification and the zero topic parameter of Huang (1984) which interact with the deeper principle, discussed in chapter 2, that identification of arguments...
must be unique.

2.2 Hausa Null Objects ≠ English "Indefinite Object Deletion" or "Null Complement Anaphora"

Hausa null object constructions can be contrasted with both "indefinite/nonspecific object deletion" and "null complement anaphora" in English, both of which are the subject of considerable discussion in the literature.\(^1\)

As has been frequently noted in work on Hausa syntax (e.g. Parsons n.d.a:23 and Bagari (1971:203)), null objects may not have the generic interpretation that is possible with missing objects in English. The following passage from Parsons makes this point quite clearly:

Now, if we examine Hausa texts, we find that such verbs (=transitive verbs) are only used where there is an expressed object word either associated with them grammatically, or somewhere else in the immediate context. Now this marks a sharp distinction between the category of Transitive Verb in Hausa and the so-named category in a language like English. For in the latter many transitive verbs are used 'absolutely', i.e. without any expressed object word in the context, but with what may be termed a 'generic object' implied, e.g. 'Have you eaten?' [...] But in all these cases it is quite impossible to use a FV [finite verb] form in Hausa, unless the implied object is actually expressed, e.g. Kae ci 'abinci? 'Have you eaten (food)/'?

The generic interpretation is usually expressed in Hausa, as Parsons notes, by use of a secondary verbal noun complement, as his examples in (13) illustrate. Note the English translations which contain finite verbs with no complement.

(13) a. Baa za a yi saatsa ba
    NEG FUT-2sm do stealing NEG
    'Thou shalt not steal'
b. Ba ta yi aurre ba
   NEG 3sf do marriage NEG
   'She has never married'

The paradigm in (14) and (15) shows exactly how English and Hausa
differ in their interpretations of missing direct objects. Whereas in
English, I read can never mean 'I read it', Hausa Naa karanta can only
mean this and never mean 'I read'.

(14) a. A: What did you do yesterday?
    B: I read.

b. A: Did you read this book?
    B: *Yes, I read.

(15) a. A: Naa ka yi jiyaa?
    B: *Naa karanta. [cf. v Naa yi karaatu 'I did reading']

b. A: Kaa karanta wanna littaafii?
    B: Il, naa karanta.

It is clear that missing direct objects in Hausa cannot be analyzed as
"indefinite object deletion".

It might be suggested, however, that null objects in Hausa are
analogous to "null complement anaphora" in English. And that like it
(and like "indefinite object deletion"), they perhaps do not present a
genuine violation of the one-to-one relation between lexical feature-
assigners and feature-bearers, under at least one analysis of these
phenomena in English, for the simple reason that there is no assignment
relation at all in such structures. The verb in such a construction
has no 0- or Case features to assign and there is no empty category
object, as a result of an operation on the lexical entry of the verb--
it only optionally subcategorizes for an NP complement, for example.
This would pose no problem for lexical bijection since this condition
(or its derivatives, such as the Projection Principle) does not apply to the lexicon. The Projection Principle, for example, requires only that representations at each syntactic level (LF, D- and S-structures) retain their lexical properties. There are quite obviously lexical rules which may change the lexical features of words. Rules may, for example, manipulate the argument structure of verbs, as for instance in the Grade V (transitivizer) and Grade VII (de-transitivizer) forms of the verb in Hausa, illustrated in (13) and (17), respectively.

(16) a. Naa fita
     'I went out.'  [Grade II]

        b. Naa fitar da riigaa
           'I took off the gown.'  [Grade V]

(17) a. Naa sayi naamaa
     'I bought meat'  [Grade III]

        b. Naamaa yaa sayu
           'The meat sold well'  [Grade VII]

Lexical solutions of this type have been proposed by various authors (e.g. Grimshaw 1979, Pesetsky 1982, Rizzi 1986) for null complement anaphora in English. Under this view, sentences like that in (18) would have a representation like (19).

(18) Did you notice the mess in there? Yes, I noticed.

(19)

```
S
   ...
  /  \  
VP  V
   /  |
noticed
```
This lexical marking solution is appealing since it correctly predicts that null complement anaphora in English is an idiosyncratic property of verbs, as the following examples illustrate.

(20) a. Did you notice the way he was talking? Yes, I noticed.
    b. Did you observe the way he was talking? "Yes, I observed.
(21) a. So, what will happen now? Guess.
    b. So, what will happen now? "Predict.

Whatever the merits of this particular approach for the English cases may be, this type of proposal cannot be maintained for Hausa. In Hausa, the possibility of having a null object is not an idiosyncratic property of individual verbs. In general, all verbs may take a null direct object. This might suggest that a general lexical detransitivization rule or a rule marking direct objects in general as being optional would still allow for adoption of the lexical solution for Hausa null objects.

There is evidence, I believe, which argues that this solution is not viable for Hausa either--i.e., that there is an empty category at 5-structure. I turn to this in the following subsection.

2.3 Null Object = eo

Arguments for the existence of empty categories are necessarily theory-dependent. However, there are arguments which are more or less theory internal than others. In this section, I will present one of each--one argument which is clearly embedded within a particular syntactic analysis and another which is more peripheral.

The first argument has in fact already been implicitly given in
this thesis. In our analysis of locality constraints on movement rules, we appealed to the presence of empty subject and direct object pronouns as an explanation for the fact that there are apparent violations of the typical island constraints associated with subadjacency just in case the position could independently be null and the extraction rule in question could independently use an overt resumptive strategy. Relative clauses may be formed by a gap strategy or a resumptive pronoun strategy in Hausa, though other types of extraction generally may use only the first. Extraction out of indirect questions or relative clauses is generally excluded in Hausa. However, relativization out of an island is permissible, if the resumptive relativization strategy is used. The only exception to this generalization is that a gap may occur in the place of an overt resumptive pronoun in subject position, in direct object position (where the referent is nonhuman), and in the complement position to certain nouns. These are exactly the places where pronouns are independently optional. It makes sense therefore to consider that these are not exceptions, but part of the general resumptive pronoun strategy. If null arguments are indeed empty pronouns, then their use as resumptive pronouns comes as no surprise.

This tidy explanation of the subadjacency facts of Hausa requires, however, that null objects (like other null arguments) be syntactically represented as empty categories. If missing direct object constructions contained instead no complement position at all, it is difficult to see how the relativization out of subadjacency island facts could be explained. The relativization facts show that null objects
may exercise the same syntactic effect as object pronouns and thus constitute a strong argument that they be visible syntactically—i.e. that they occupy a structural position for the A'-antecedent to be related to. Notice that null objects are not "felt" in this way in English, which also has a resumptive relativization strategy. It is possible therefore to contrast minimally examples like English (22a) where an overt resumptive pronoun is required with Hausa (22b), the equivalent of (22a), where the resumptive pronoun may be null. In both cases, a resumptive pronoun strategy avoids a violation of subjacency, but only in Hausa may a null object play the role of a resumptive pronoun.

(22) a. Here's the book that we all know the people who didn't notice *\(\text{it}\)

b. Gaa littaaafin da muu duka mun san mutaanen da ba su ganii g ba

A more weakly theory-bound argument that has been discussed in the literature for some time now involves the interaction of S-structure with the phonological component. It is argued that there are processes of PF which are sensitive to lexical categories which are empty at S-structure. Some phenomena that have been discussed in this context are: English to-contraction, the Italian double infinitive filter, soft mutations in Welsh, English auxiliary reduction, and indefinite article elision/liaison in Italian/French. In Tuller (1982b), I described an (optional) elision process in Hausa and suggested that it argued for the presence of an empty object pronoun. I will briefly review this argument here.
The elision rule in question results in the contraction of the verb yi 'do, make' with the Inflection node. This can be seen in (23), where taa yi becomes tai and ya yi becomes yai.

(23) a. Allura (taa yi) muruushii
    A \{ INFL do | smile
    \{ tai
    'Allura smiled.'

b. Allah (ya yi) maka albankaa
    A \{ INFL do | to-you blessing
    \{ yai
    'May God bless you.'

What is interesting about this process is that it is blocked (at least for some speakers) just in case yi is followed by an empty category, as in (24):

(24) ... faɗin da (na yi) ti a zaaɓen nan.
    fall REL \{ INFL do | in choice this
    \{ 'nai
    'the fall I took in this election'

As one would expect if null complement anaphora in Hausa involves an empty category rather than lexical detransitivization, the elision process is also blocked when there is a following null object. This can be seen in the example in (25), where the verb yi 'do' has a null object, and it may not be elided and contracted with the preceding INFL yaa.
(25) Inda wani yai rawaa aka baa shi kudii, wani in
     INFL-do dance indef give him money one if

     \{yai y\}e [sai ya sha kaashiil]
     INFL do\} then 3sm drink excrement

     yai

     'If one person dances, he is rewarded and if another dances, he is punished.'

That it is not merely because of a major sentence break (i.e., a boundary between major constituents) that elision is blocked can be seen by comparing (25) to (26), where *y* is the resumptive pro-verb spell-out for the trace of the focussed verb 'want' (cf. section 2.2.5 of chapter 4 for analysis of predicate focus). In this case, there is no following object gap and thus elision is possible (in contrast with (25)), regardless of the following major sentence break.

(26) Soo \{kika yi\} [g' in kwaana can]
     want \{kikai\}

     'Wanting you did that I spend the night there?'

The *y*-Elision facts can be taken as additional evidence against a generalized optional subcategorization analysis of null complement anaphora in Hausa, and, in favor of their syntactic presence.

Having established that null objects are empty categories, and thus that they are relevant to the concerns of this study, we can return to the question of what it is that sanctions these empty categories. We can immediately eliminate both Control and A-binding as possible means to legitimize the null direct object. Since the direct object position is governed by the verb, the element in this position cannot be PRO, which can only occur in ungoverned positions,
by the PRO theorem. Likewise since there is no A-sanctioner within the null object's governing category which can serve as an antecedent without provoking a 8-Criterion violation, the null object cannot be an NP-trace, as is shown by (27).

(27) *Alij yaa karanta tì
     A. INFL read

This leaves two remaining types of empty categories which could possibly characterize null objects: a variable or an empty pronoun (pro).

2.4 Null Object ≠ vbl.

If a null object is a variable, the claim would be that the null direct object is OK because there is an A'-antecedent. The difference between Hausa and English would be that while Hausa allows the A'-antecedent itself to be null, English does not. This is in fact just what has been proposed by Huang (1982, 1984) for Chinese. In this section, I will present the basic outlines of Huang's analysis for Chinese. Then, I will show why this analysis, while having a certain interest with respect to the Hausa facts, cannot fully account for them.

2.4.1 Huang (1984)

Huang suggests that er's in languages like Chinese, which allow null arguments freely, may be bound by a zero topic. The reason this is possible, he suggests, is because these languages have a rule of discourse grammar (LF'—see Williams 1977 for discussion) which
coindexes empty topics to an appropriate preceding topic, forming a topic chain. An example (from Huang op. cit.) of this situation is given in (28).

(28) [Zhongguo, difang hen da.] [g, renkou hen duo] [g, tudi hen China place very big population very big land very faiwo.] [g, qihou ye hen hai.] [g, women dou hen xihuan.] fertile climate too very good we all very like '(As for) China, (its) land area is very large. (Its) population is very big. (Its) land is very fertile. (Its) climate is also very good. We all like (it).'

Under Huang’s analysis, the missing argument in each sentence is locally bound by the zero topic and the zero topics are coindexed with China to form a topic chain at LF. Interesting support for the zero topic hypothesis is given in Huang (1984:1.5) on the basis of German "pronoun zap", following work by Ross (1982). Ross observes that either subject or object pronouns may be dropped (but not both in the same sentence) in informal spoken German, and only when they appear in topic position. This can be easily seen in German, which displays the well-known "verb-2nd" restriction: "zapped pronouns" are allowed only in structures where there is no other material in front of the verb (i.e., no other material in topic position).

Huang’s analysis makes use of the functional definition of eo’s, given in (29), and a rule identifying empty pronouns (that is, pro) which is part of a Generalized Control Rule requiring identification for all empty [+ pronominal] elements (i.e. both pro and PRU), given in (30).
(29)  a. An \( e_0 \) is pronominal iff it is free or locally bound by an element with an independent \( \theta \)-role, and a non-pronominal if not thematically bound

b. A non-pronominal \( e_0 \) is an anaphor iff it is locally A-bound, and a variable if locally A’-bound.

(30) Generalized Control Rule

Coindex an empty pronominal with the closest [minimal distance] c-commanding nominal element [= NP or AGR].

Consider the following basic examples which illustrate how Huang’s system works.

(31)  [in Chinese]  

\[ e, \text{Bill saw e} \]

\[ \text{*pro} \quad \text{vbl.} \]

(viol. (B))

(bound by 0 Top)

(32)  [in Chinese]  

\[ e, \text{e came.} \]

\[ \text{*pro} \quad \text{vbl.} \]

(viol. (30))

(bound by 0 Top)

Since there are zero topics in Chinese, there are in principle two possibilities for the null argument in (31) and in (32): it may be either a variable (bound by a zero topic) or an empty pronoun (coindexed to the closest c-commanding nominal element).

In (31), the null argument may not be an empty pronoun since an empty pronoun would have to be coindexed with Bill, the closest c-commanding nominal element (since Chinese has no AGR, according to Huang), resulting in a violation of Condition (B) of the Binding Theory which requires pronominals to be free in their governing category. The null argument in (31) may be a variable, however, since Chinese allows zero topics which are A’-binders.

In (32), where the null argument is the subject, the result is much the same. The empty argument may not be \textit{pro} because there is no
c-commanding nominal element (again, since Chinese has no AGR). It may be a variable since, as in (31), there may be a zero topic serving as an A’-binder.

This analysis has interesting predictions, which apparently are borne out in at least Chinese and Portuguese (Raposo 1984). (See also recent work by Campos (1986) for a similar analysis of indefinite null objects in Spanish). If the null argument in these structures may be identified as a variable, we ought to find that it behaves like a variable with respect to the Binding Theory and with respect to conditions on structures involving _wh_-movement. That is, we would expect that null objects display Condition C effects (strong crossover) and subadjacency effects. We look at these in turn.

Recall that Condition (C) of the Binding Theory ensures that variables may not be bound by an element in an argument position. (33a-b), for example, are excluded as Condition (C) violations.

(33) a. *Whoi did hei say ei saw Bill?
    b. *Whoi did hei say Bill saw ei?

As predicted, null objects in Chinese and Portuguese, may not be coreferential with a c-commanding A-position, as (34) illustrates, for Chinese.

(34) a. *Zhangsan, ta shuo [Lisi mei kanjian ei] Z. he say L. no see
    'Zhangsan, he said that Lisi didn’t see.'

    b. *[ei shuo Lisi mei kanjian ei] de nei ge reni]
    say L. no see DE that man
    'the man who said Lisi didn’t see’
In both (a) and (b), the null object cannot be pro since this would result in a violation of Condition B (the empty pronoun would be bound by Lisi, to which it must be coindexed because of the Generalized Control Rule). The null object can however be a variable bound by the topic. That it can only be a variable explains why coindexation with an argument ('he' or the subject of 'say') results in unacceptability: such coindexation is ruled out by Condition C.

Null subjects, on the other hand, do not display strong-crossover effects:

(35) a. Zhangsan, tai shuo [ei mei kanjian Lisi]  
     Z. he say no see L.  
     "Zhangsan, he said that didn’t see Lisi."

     b. [[ei shuo [ei mei kanjian Lisi]] de neige renj]  
        say no see L. DE that man  
        "the man who said didn’t see Lisi"

This is as expected since the null subject may be pro (because the matrix subject may serve as its local identifier in satisfaction of the GCR and the Binding Theory). Again, this possibility is not open for null objects since the closest c-commanding nominal element to an object is its (local) subject and coindexation between the subject and a pronominal object of the same clause incurs a violation of Condition B.

Consider now the subjacency effects that null arguments in Chinese display. The sentence in (36) shows that in Chinese null arguments are subject to subjacency. Since subjacency is a condition on the relation between a trace and its antecedent, the fact that null arguments obey subjacency argues strongly that null arguments may be identified with traces bound by an A’-positions-i.e. variables.
Extraction from a complex S in subject position may violate island conditions, however, as (37) illustrates. In Huang’s system, this contrast with the behavior of the empty argument in (36) follows from the fact that the empty argument in (37), unlike that in (36), may be identified as pro. In (37), Topic itself may serve as the local identifier (an option not open in (36) since its closest nominal element is the matrix subject). (Since e is coindexed with Topic and Topic is an A’-position, it is functionally defined as a variable in Huang’s system.) Notice that in order for Topic to serve as the local identifier, it must be the case that the head of the relative clause is not a possible identifier (in fact, e and the relative clause head may not be coreferential). Huang suggests that this is so because the head of the relative clause is already coindexed with something—i.e., it is the antecedent of the relativized direct object.

A major result of Huang’s analysis, then, is that, apart from languages having object agreement, whenever there is an object gap, there has been movement (either A-binding or A’-binding)—that is, direct object empty pronouns do not exist. This means that the distinction between left dislocation of a direct object and topicalization of a direct object amounts to no gap vs. gap—that is,
no movement implies no gap and vice-versa.

2.4.2 Null Object ≠ vbl.

The zero topic component of Huang's analysis is attractive for Hausa, I believe. Huang suggests, following work by Tsao (1977) and others, that it may be the pervasiveness and basicness of topic-comment sentences in a language which gives rise to the option of constructions containing a zero topic. Hausa certainly makes ample use of sentences of the topic-comment form, though it does not allow the discourse-bound anaphors which exist in "discourse-oriented" languages such as Korean or Chinese. Despite this difference, it does seem plausible to assume that in Hausa it is the grammaticality and frequent occurrence of left dislocation constructions in which an overt topic is recapitulated by a null pronoun, on the one hand, and discourse structures in which a single overt topic corresponds to several comment sentences each containing an overt resumptive pronoun, on the other hand, which clues the language learner to the fact that null pronouns may also have zero topics as antecedents.

While the zero topic idea does appear to be fruitful as the beginning of an explanation for the possibility of null objects in Hausa, the conclusion that null objects (in the absence of object agreement) can only be variables, which is at the base of Huang's proposal (and cf. also Borer 1986a), cannot be correct, given the facts of Hausa. Null objects in Hausa do not have the properties of variables in Hausa.

Recall from chapter 1 that structures involving trace-antecedent
in COMP relations in Hausa are morphologically marked in the perfective and the continuous aspects by a special "relative" form on the INFL local to the A'-binder of the variable. In particular, left dislocation structures are thereby distinguished from focus-fronting ("topicalization") structures: the latter appear with relative aspect marking, while the former do not. The problem for the null object = variable hypothesis is that even left dislocation structures in which the resumptive pronoun is null do not appear with relative aspect marking. In other words, null objects behave like pronouns, not variables. Compare (38a), a case of focus-fronting of the direct object, where the relative form is obligatory, with (38b), a case of left dislocation, where the relative form does not appear. (Notice that (38a) could not be a possible left dislocation structure since the pre-sentential NP is not specific--cf. discussion in chapter 1.)

(38) a. Wani littaaafi yaaraa suka a book children 3pREL PERF read
      sun 3pPERF

   'A book the children read.'

   b. Littaafin nan, yaaraa sun karantaa g / shi book this children PERF read it

   'This book, the children read (it).'

The subjacency facts of Hausa also argue that null objects in Hausa are not variables. Null objects in Hausa are minimally different from null objects in Chinese and Portuguese in that they may be found inside "subjacency islands". For details and illustration of these facts, which have been reviewed several times now in this study, see section 2.2 above and section 6.2.2 of chapter 1.
A third test for the variable status of null arguments which Hausa also fails is the Doubly Filled COMP test. Raposo (1984) points out that if null objects are bound by an A'-antecedent in COMP (a null operator linked to a zero topic, under his adaptation of Huang 1984), then they should not be able to occur in a clause whose COMP is filled by another wh-phrase since this would constitute a violation of the Doubly Filled COMP Filter. This is indeed the case for null objects in Portuguese and in Spanish (cf. Campos 1986). Portuguese (39), from Raposo (op. cit.) illustrates this.

(39) a. *Quandoj e’ que o Manel vai ofecer ao António e_i tj
   'When is Manel going to offer to Antonio e_i?'

   b. *[Para qual dos filhos]j é que a Maria comprou e_i tj?
   'For which of her children did Mary buy e_i?'

In Hausa, however, such structures are perfectly grammatical:

(40) a. Yaushej Alii ya rubuuta e_tj
   'When did Ali write (it),ID

   b. Waaj tj zai sayaa e?
   'Who’s going to buy (it)?'

Licensing of parasitic gaps provides another test for "variablehood". Parasitic gaps, recall (cf. section 6.3 of chapter 1), are gaps which are permitted to occur in positions from which extraction normally is disallowed, due to the the presence of a "real" gap which is a variable (at S-structure). We might therefore expect to find evidence that null objects cannot license parasitic gaps, if it is true that they are not variables, as I am claiming. This can’t be tested, unfortunately, because there is no way to prevent the potential
parasitic gap from being merely an occurrence of another null argument, as (41a-b) illustrate.

(41) a. Yaa s'ayaa @ kaafin ya karantaa @
   'He bought (it) before he read (it)'

b. Yaa tafi Kanoo kaafin ya karantaa @
   'He went to Kano before he read (it)'

The only way to be sure that a gap is a parasitic gap, and not a null object (or a null subject), is if the gap occurs in object position and has a human referent (cf. (42a)). (This is because null objects can only have nonhuman referents.) But, if the referent of a parasitic gap is human, then it could never be licensed by a null object, since (once again) null objects can only be nonhuman.

(42) a. Waa; Ali ya auraa ti don baabansa yanna soo @
   'Who did Ali marry because his father likes?'

b. 'Ali yaa auraa @ don baabansa yanna soo @
   'Ali married (her) because his father likes (her)'

2.5 Null Object = pro

The tests just reviewed, which show that null objects in Hausa do not behave like variables, show at the same time that null objects display the same behavior as pronouns. Pronouns do not provoke relative aspect marking. They are not subject to subjacency. They may co-occur with a wh-phrase in COMP.

Now, if null objects are pronouns without phonological content (i.e. pro), then we should expect that they should not display strong crossover effects. That is, in principle they ought to be able to refer to an argument, as long as that argument is outside the null
object's governing category (in order to avoid a violation of Condition (B) of the Binding Theory). Here, the facts are rather delicate. It is necessary to have a sentence containing a clause with a nonhuman object embedded in a clause with a nonhuman subject. Most speakers seem to prefer an overt object pronoun in these contexts, though this appears to be true no matter what the referent of the pronoun is.

(43)  a. Littaafin nan, yaa baa ni daaflii da na karantaa ?(shi) 'This book, it pleased me when I read (it)'

b. Kur'aanii, kuwa, yaa cee kar a juu?i ??(shi) 'The Koran, well, it said not to translate (it)'

c. Littaafin nan, kuwa, yaa saa Muusa ya sayee shi /??sayaa g 'This book, well, it made Musa buy (it)'

d. Kur'aanii yaa cee mu karantaa *(shi) koowace raana 'The Koran said for us to read it every day'

The facts of (43), while not supporting the null object = pro hypothesis, are not really inconsistent with it, however, given that the sentences in question are independently odd.

Weak crossover facts are as expected, though. A variable may not be coindexed with an overt pronoun to its left or with a null object to its left. In other words, this well-known restriction on coindexation between variables and pronouns (also referred to as the Leftness Condition) treats null objects in the same way as pronouns. What the status of this restriction is need not concern us here. What is relevant to our discussion is merely the fact that null objects behave like pronouns, as comparison of (44a) with (44b) reveals.

(44)  a. Meej yaarinyar da ta gan shij/wa i da farkoo [ ta sayaa ti ] what girl-the REL 3sf see it at first 3sf buy 'What did the girl who saw it first buy?'
b. Mee\textsubscript{i} yaarinyar da ta ganii da farkoo \textsubscript{g1/m1} [ ta sayaa t\textsubscript{i} ]
'What did the girl who saw (it) first buy?'

Moreover, if null objects were actually variables, we should expect (by
the Leftness Condition) that they should not be able to be coindexed to
a pronoun to the left, as is true for the variable t\textsubscript{i} in (44a). Null
objects can be so coindexed, as (45) exemplifies.

(45) Yaarinyar da ta gan shii da farkoo [ taa sayaa \textsubscript{g1/j} ]
girl-the REL 3sf see it at first 3sf buy
'The girl that saw it first bought (it)'

Leaving open then the explanation for (43), we can say that all
the available evidence points towards analyzing null objects in Hausa
as empty pronouns. In Huang’s system, a null object may be pro only if
there is rich object agreement to identify it. But, Hausa has no
object agreement at all.

I would like to suggest that object pro’s are possible in Hausa,
despite the fact that there is no object agreement, because the topic
may count as the closest c-commanding nominal element for a direct
object.

Why is this possible? It has been argued all along in this study
that identification of arguments must be unique. Specifically, this
has meant that the relation between identifiers (generally feature-
assigners) and arguments (feature-bearers) must be bijective. Now, if
identification is a bijective relation, then the identification of pro
must also be bijective. That is, the relation between pro and the
element which identifies it must be one-to-one in character. I have
further assumed, following closely work by Borer (1986a,b) that there is obligatory coindexation between INFL and some NP in its domain and that this relation, which is also bijective, constitutes an identification relation. It follows that in a language having AGR, neither AGR nor the NP coindexed with AGR (i.e. the subject) may serve as an identifier for an empty object pronoun without violating the one-to-one condition on identification. Assuming that pro must be identified by the closest possible identifier (vis-a-vis the bijective condition on identification), as is stated in (46), object pro may be identified by a left dislocated NP in topic position, as in the example in (47).

(46) Empty pronouns must be identified by the closest possible c-commanding identifier, where "identify" = give phi-features and "identifier" = any element bearing phi-features or the feature [+N].

(47) `Top Littaaafin nani [Aisha] [i taa] rubuutaa proi` 
'This book, she wrote (it).' 

This view of identification entails that null objects in Hausa are not excluded from syntactic islands. The pro object in a structure like (48) is identified by the topic (whether overt or zero). None of the other phi-feature-bearing elements in (48) is a possible identifier because of the bijective restriction on identification relations. AGR and [NP, S] are in an identification relation and thus neither can serve as the identifier for the object pro. Likewise, neither the wh-phrase in COMP or the NP relative head can be possible identifiers. I assume that this is because these two elements are also in an identification relation analogous to that between INFL and the subject. Both involve
identification of a predicate with a "subject".

(48) [TOP əi] [Ali əaə san [NP mutuən [g' [COMP wanda] ak əaə rubuuta əi]]]
    'Ali knows the man who wrote (it).'

Now, accepting Huang’s arguments that Chinese has no AGR node at all, Chinese null objects do not normally have the possibility of being identified by TOPIC. This is because the closest identifier is the subject, which is a possible identifier precisely because it is not already in an identification relation, there being no AGR. Coinlexation between the null object and the subject results in a violation of Condition (B) of the Binding Theory, however, and thus the null object can only be a variable.

There is, however, at least one context in which even Chinese has object pro’s, it seems to me. Consider (49). Multiple topic constructions are common in Chinese. As expected, where the topics correspond to empty categories, the lower topic may not be coindexed with the lower əa, as in (49a), since movement of the higher topic (or vice-versa) would violate subjacency. Huang notes (1982:446) that this sentence is acceptable with the indexing in (49b).

(49) a. [Zhangsan əi [neige ren j [t ə hən xihuan t j]]]
    Z  that man very like

b. [Zhangsan əi [neige ren j [tj ə hən xihuan tj]]]
    Z.  that man very like

(49b) poses somewhat of a problem for Huang since coindexation between Zhangsan and t ə should once again be ruled out by subjacency. Huang gets around the problem by suggesting that the lower topic neige ren is
interpreted as the subject, not a topic, and thus the sentences are
"felt" to be well-formed by speakers.

This explanation seems entirely plausible. However, it cannot
account for examples like (50), which also contain a null subject and a
null object, but which do not have overt topics. These are
acceptable, despite the fact that they contain nothing overt which
speakers might misinterpret as the subject.

(50) [e1 [e2 [3 t] kanjian ti le]]
    see LE
    '(He) saw (him)'  [Huang 1984:533]

The idea that identification relations of all kinds are bijective
yields the correct result for sentences like (49) and (50), with both
null arguments being pro's. This is seen in (51). The subject pro is
identified by the lower topic 'this man', which then is no longer a
possible identifier for the object pro (since it is in an identification
relation with the subject pro), allowing it to be identified by the
upper topic.

(51) [TOP John1] [TOP this man1] [e1 like e2]  (Chinese)
    pro   pro

This analysis also correctly predicts that (49) with the opposite
indexing (= (52)) is ungrammatical, as the reader can quite
mechanically verify: pro's are impossible because one or the other
would not satisfy (46) and variables are impossible because one or the
other would result in a subadjacency violation.

(52) *[John1] [this man1] [e1 like e2]  (Chinese)
(Where $e_i$ in (51) is replaced by an overt pronoun with the same index, ungrammaticality results since, assuming that identification proceeds cyclically, $e_j$ must coinindex with the overt pronoun (which has phi-features, in contrast with $e_i$), creating a violation of Condition (B) of the Binding Theory.)

Our analysis means that, contra Huang (op. cit.), object empty pronouns do exist, in limited environments in Chinese and quite generally in Hausa. The difference between Chinese, or at least the dialect described by Huang (cf. Xu and Langendoen (1985) and Xu (1986) for descriptions which make Chinese look a lot more like Hausa), and Hausa is that Chinese has no AGR and hence the subject is always free to identify a null pronoun, which results in a violation of Condition B. In Hausa, on the other hand, since there is AGR and thus coinindexation between AGR and the subject, a null object pronoun is free to go "all the way up" to the topic to be identified.

European Portuguese, as reported in Raposo (1984), is similar to Chinese. Evidence of the type reviewed above points to the null object's being a variable. There are island effects and strong crossover effects, etc. However, European Portuguese does have AGR; it is, in fact, a null subject language, just as Hausa is. So, why isn't Portuguese like Hausa?

I have proposed that object pro may get its identification from the topic in Hausa and, under some circumstances, in Chinese. Now, in typical null subject languages, identification of subject pro is always local—that is, within S. Suppose that the locality of pro identification is a parameter so that (46) is revised to include this
option:

(53) pro must be identified (within the minimal S that contains it) by the closest possible identifier.

A loose setting for (53) plus a positive setting for Huang's zero topic parameter (whether LF' has a rule of topic chain formation or not) would give rise to a "super" discourse language which allows not only zero topics to form topic chains, but also pro to be identified outside S. Examples of this would be Hausa, Chinese, and Chazorro (see Chung 1984). Portuguese, on the other hand, is more restrictive; while it allows zero topics to form topic chains (i.e., it allows sentences like "I saw g"), it requires pro to be identified in S. This means that there can be no object pro's in Portuguese because they have no possible identifier within the minimal S which contains them.

This system also correctly disallows null object pronouns even when there is an overt topic in non-zero topic languages like English and Arabic, which have AGR, but require local identification of pro, presumably the initial setting of this parameter. However, it must be developed further in order to properly account for the identification of PRO. Clearly, some empty pronominals in languages like English, Portuguese, etc. may be identified outside the minimal S containing them. Otherwise we would exclude entirely control structures, where the empty pronominal PRO must be able to be identified by NPs in the upper clause.

I believe that an analysis of control along the lines of Borer (1986a) may fit in with the rest of my analysis (though there are some
rather important difference which will become evident as we proceed. We might, for instance, adopt (and adapt) Borer’s proposal that PRO (which is no different from pro in her system) is identified by the AGR of its local (infinitival) INFL, which being itself inherently empty, is identified by a nominal element outside of the minimal S containing it.² Putting this together with our proposals above entails that there may be a dichotomy between the identification of empty pronouns and the identification of empty AGR. This seems to be exactly what the facts require. In a language like English or Portuguese, identification of empty pronouns can only be local, while identification of an empty AGR is not so restricted. Other languages, such as Hausa, Chinese, etc., have identical locality parameters on the identification of pro and empty AGR.

The conditions on the identification of empty AGR and identification of pro are not identical, however. Empty AGR is not required to be identified by the closest cc-commanding identifier; rather, the identification is in principle free, thereby allowing for object control as well as subject control (cf. Borer op. cit.). And, while pro is an argument and thus is subject to the one-to-one condition on identification, AGR is not an argument and thus does not need to be uniquely identified. The result is that a higher NP subject, even though it is in an identification relation with its own INFL, may identify a (different) empty AGR. Examples of how this might work are given in (54), where arrows indicate “identifies”.

352
In (54a), AGR1 identifies one NP only (John) and the argument John has one identifier only (AGR1). AGR2 identifies one argument only (pro) and pro has one identifier only (AGR2). AGR2 is identified by John, which is already in an identification relation, but AGR2 is not an argument and thus doesn’t require unique identification. In (54b) ('The book, Ali bought (it)'), yea (INFL) and Ali are in an identification relation and thus neither of them can identify pro, since pro is an argument and thus must be uniquely identified.

Summarizing, I have argued that null objects in Hausa are true empty pronouns (pro) which are identified by a left dislocated NP in topic position, which may be empty. These results follow from appropriate settings for the parameters listed in (55), which also account for the differences in the behavior and distribution of null objects found in Hausa, Chinese, Portuguese, English, etc.

(55) a. Zero Topic Parameter: LF’ has (not) a rule of topic chain formation

b. AGR Parameter: INFL has (not) AGR

c. Phi-feature Identification: pro must be (locally) identified by the closest, possible c-commanding identifier. Empty AGR must be (locally) identified by an identifier.
Reviewing how these languages are distinguished by the parameters in (55), Hausa has a positive setting for the Zero Topic Parameter and the AGR Parameter, and it allows nonlocal identification of pro. Chinese is the same, except that it has a negative AGR parameter setting. Portuguese is positive for (55a-b), but requires local identification of pro; English is the same, except that it has a negative Zero Topic Parameter setting.

In Hausa, and in other languages, there must be a further restriction to ensure that "long-distance" identification of pro, the loose setting for (55c), is possible only when the referent for pro is [-human]. I agree with Jagger (1985), who points out that this restriction is not at all uncommon in languages, that the explanation for this can be attributed to discourse factors. The proper formalization of this condition would, I assume, be part of the elaboration of a grammar of discourse (LF'). I will have little else to say about this here.

In the remaining sections of this chapter, we will investigate other environments where pro may (or may not) occur in Hausa, refining and finding support for (55).

3. Null [NP, NP]

3.1 Facts and Analysis

As is typical in African languages, various locative expressions in Hausa are formed on the basis of nouns referring to parts of the body. These include the items in (56):
(56) **Noun**

- baayaa 'back'
- ciiki 'stomach'
- gëbsa 'front of body'
- kàl 'head'
- RàRRashii 'underside'

**Locative**

- baayaa 'behind; after'
- ciiki 'in(side), among'
- gëbsa 'in front of, before; beyond'
- kàl 'on (top of); about; because of'
- RàRRashii 'under, beneath'

Though often referred to as "prepositions" because of their meaning, these locative words are both morphologically and syntactically nouns. Morphologically, they pattern with other adverbial nouns which derive (diachronically or synchronically) from time and place words by changes in tone pattern and shortening of the final vowel. (See Ha Newman (1984) for discussion and analysis.) These are exemplified in (57), where the primed sentences contain the adverbial form.

(57) a. *Raanaa taa yi yawaa*  
   sun 3sf do a-lot  
   'It's hot'

   a'. Mun gan shi da *raana*  
   1p see him with sun  
   'We saw him at noon'

b. Yaa ci *Raana*  
   3sm eat dirt  
   'He did humble obeisance'

   b'. Yaa zubaa shi a *Raana*  
   3sm pour it at ground  
   'He poured it on the ground'

c. *Idoo yaa yi baanaa*  
   eye 3sm do guest  
   'I've got something in my eye' (lit. (My) eye has a guest)

   c'. Hakkii yaa faaadaa mini a *ido*  
   grass 3sm fall to-me at eye  
   'A wisp of grass fell in my eye'

Syntactically, body-part "prepositions" behave like nouns as well. Whereas "true" prepositions may take direct NP complements, body-part words require insertion of the dummy preposition -n (na-Insertion). (Cf. English 'on top of', 'inside of', etc.) Compare (58), which shows that "true" prepositions do not allow na-Insertion, with (59), which shows that body-part locatives require na-Insertion.
(58) a. Mun gan shi a(*n) kaasuwa
  lp see him at market
  'We saw him at the market'

  b. Sun zoo da(*n) kaayansu
     3p come with stuff-their
     'They came with their things'

  c. Sun zoo daga(*n) kaasuwa
     3p come from market
     'They've come from the market'

(59) a. Mun gan shi baaya*(*n) kaasuwa
     lp see him back-of market
     'We saw him behind the market'

  b. Kaayaa sunaa ciki*(*n) daakii
     stuff 3p    inside-of hut
     'The things are in the hut'

  c. Yaaraa sunaa gaba*(*n) moottaa
     children 3p    front-of car
     'The children are in front of the car'

  d. Mun yi magansaa a ka(*n) littaaфин Ali
     lp do speech at top-of book-of A
     'We talked about Ali's book'

  e. Sun saa kuđii a Rarkashi*(*n) gadoo
     3p put money at under-of bed
     'They put the money under the bed'

Related to this fact is the fact that pronominal objects of body-part words are possessive pronouns, as is seen in (60a); pronoun complements to "true" prepositions generally appear in the independent form, as is seen in (60b).

(60) a. Sunaa baayaa/shi~sa/ta
     3p    back-of-us/him/her

  b. Sun zoo da muu/shii/ita...
     3p come with us/him/her

Finally, body-part words may be preceded by a preposition (cf. above
examples), whereas real prepositions normally may not (cf. chapter 2).

Body-part nouns, as I will call these locative nouns, have at least one property which is shared by neither other nouns or by prepositions: they may take null objects. As with null direct objects, null objects of body-part nouns may correspond to an overt left-dislocated NP or to an NP present in the discourse or pragmatic context. This is seen in the examples in (61), which can be compared to (62) and (63) which show that null objects to non-body-part nouns and to prepositions are not possible.

(61)  a. Kwandon nan, nna ga gujiya ciki e / cikinsa basket this I see peanuts inside inside-of-it
     'This basket, I saw the peanuts in (it)'

     b. A: Kaa karanta littaafin Haliima?
        2am read book-of H
        'Did you read Halima's book?'

        B: Ii, mun rigaa mun yi maganaa a kai e / kansa
        yes lp precede lp do speech a top top-of-it
        'Yes, we already talked about (it)'

(62)  a. Kaasuwar jumaa'aa, mun ga Ali a can / a *e
     market-of Friday 1p see Ali at there / at
     'The Friday market, we saw Ali at (there)'

     b. A: Kun tafi kaasuwa a yau?
        2p go market today
        'Did you go to the market today'

        B: Ii, yanzu-yanzu mun zoo daga can / daga *e
        yes now-now 1p come from there from
        'Yes, we've just come from (there)'

(63)  a. Ali, nna karanta littaafinshi / *littaafii e
     A 1s read book-of-his book
     'Ali, I read (his) book'
b. Agadez, garii mai kyau née. Anaa zuwaa daga nesa a
town with-beauty COP indef come from far indef
ga masallaacin / *masallaaci ai
see mosque-of-it mosque
'Agadez is a beautiful town. People come far away to
see (its) mosque'

Likewise, the nonhuman restriction on nonlocally identified null
arguments discovered in the case of null direct objects appears to be
operative with null complements to body-part nouns. Compare (64) with
(61b), and (65a-b).

(64) Kaa san yaaron alhajii Maman? Msalaamun makaranta zaa su
2sm know child-of alhaji M teachers-of school 3pFUT
yi maganaa a kansa / *kai o
do talk at top-of-him top
'You know Alhaji Maman's child? The teachers are going to talk
about him'

(65) a. Ra'ayin da ac cikin littashin-ga, akwai mutumin baaya e
opinion that COP in book-the-this there-are person back
'The point of view in this book, there are people behind (it)'
b. Sarkin Kanoo, akwai mutaasen da yawaa baayanshi / *baaya e
emir-of K there-are people a-lot back-of-him back
'The emir of Kano, there are a lot of people behind him'

Does the gap in these body-part noun constructions in fact
represent a phonologically null syntactic position? A negative answer
to this question would seem to have some support. Notice, first of
all, that body-part nouns may be used as adverbs:

(66) a. Sun kooma baaya
3p return back
'They went back'
b. Yaaraa sunaa gaba / ciki
children 3p front in
'The children are in front/inside'
This, plus the fact that left dislocation structures often require only a rather loose 'aboutness' relation to hold between the dislocated element and the comment sentence, means that the objectless body-part nouns don't necessarily have a syntactic null object. In other words, is the 'intransitive' use of body-part words in Hausa any different than the adverbial function of various words such as inside in English? The semantics of inside requires that it be construed in relation to something that can have an inside, but does this really mean that this must correspond to a missing argument? In a sentence such as (67a), for example, what would be the referent of a putative null object of outside? It seems reasonable to assume that this and the other examples given in (67) involve adverbs whose reference is restricted by pragmatic and/or discourse factors, perhaps analogous to how the exact meaning of an adverb like quickly might be said to depend on the capacity of the individual (person or thing) to effectuate quick actions. Both are relative in the same way.

(67) a. The neighborhood kids are always playing outside
b. See that tree house up there? All the neighborhood kids are playing inside
c. You know John's car? You can find his dog sitting in front
d. When we arrived at the summit, there were all kinds of people sitting on top

There is reason, however, to consider body-part noun constructions in Hausa to contain a phonologically null syntactic position. Hausa is different from English in this respect. Where Hausa differs from English is that the semantic object of a body-part noun may correspond to a clear syntactic antecedent. Thus, a variable linked to a wh-
operator may correspond to the object of a locative noun in Hausa, but not in English. This can be seen by comparing Hausa (68) with English (69).3

(68) a. Mee ka saa gujiya a ciki a?
   what 2am put peanuts at inside
   'What did you put the peanuts in?’

   b. Wane littasa’ii kuka yi magana a kai a?
      which book 2p do talk at top
      'Which book did you talk about?’

   c. Gaa gadon da muka saa kudii a karkashii a?
      here’s bed that 1p put money at under
      'Here’s the bed that we put the money under’

(69) a. *What are the children sitting inside?
   b. *What is John’s dog sitting in front?
   c. *What did you put the books on top?’

Notice that the contrast between (69) and (68) cannot be simply a matter of the wh-trace in English (69) not being Case-marked. While it is true that the examples in (69) become grammatical if of is added, since prepositions in certain contexts in English are (in effect) proper governors, this isn’t sufficient to distinguish English from Hausa because the Hausa examples in (68) are structurally identical— that is, an N is stranded (cf. note X).

And, as is true of null subjects and null direct objects, null complements of body-part nouns may participate on an equal footing with overt pronouns in the resumptive relative strategy, which results in surface violations of subadjacency.

360
(70) a. Gaa littaafin da Ali ya san maalaamin da ya yi here's book-the that a 3sm know teacher that 3sm do maganaa a kai e / kansa talk at top top-of-it 'Here's the book that Ali knows the teacher that talked about (it)'

b. Gaa gidan abincin da muka san waa yake aikii a here's house-of food-the that 1p know who 3sm work at ciki e / cikinsa inside inside-of-it 'Here's the restaurant that we know who works in (it)'

I conclude therefore that body-part nouns in Hausa may have a pro object. This pro, like all instances of pro, is subject to phi-feature identification (=(55c)). It appears to satisfy this identification requirement in the same way as null direct objects, by a topic, which may be either overt or null in Hausa (due to a positive setting for the zero topic parameter, (55a)). Thus, in (71), for example, pro must be identified by the closest, possible c-commanding nominal element, by (55c).

(71) [Top (littaafin nan)]) [§ Ali\_i yaaj [yp [\_/yi maganaa] [pp a book-the here A 3sm do speech at [np kai pro ]]]] head

The required identifier cannot be the direct object maganaa, since, assuming binary branching (cf. chapter 2), maganaa does not c-command pro. The identifier cannot be AGR (yaaj) or the subject Ali either, since, although each of these c-commands pro, neither is a possible identifier since they are already coindexed to each other and identification must be unique. This leaves the NP topic, which may
identify pro, as required.⁴

We are left with one important question: why may only these particular nouns take a pro complement? Subjects of any tensed INFL may be null, and all transitive verbs may take a null direct object. Why can't all nouns take a pro complement (cf. ((63)))? And, for that matter, why can't prepositions (cf. (62))? A recent study of null arguments by Rizzi attempts to deal with exactly this kind of question. We turn to this work in the following section, incorporating certain features of his analysis and noting problems with others.

3.2 Rizzi (1986)

Rizzi (1986) develops a licensing schema for pro to account for both the cross-linguistic and intra-language distribution of null pronouns. It is proposed that pro, like other empty categories, requires both a governor, which determines where it can occur, and recovery of content through binding by an element containing phi-features, which determines how it may be interpreted.

Languages may vary with respect to which X₀ (if any) may govern a pro.⁵ In Italian, which is a null subject language, and which also permits verbs to have (arbitrary) null objects, the licensing heads for pro include INFL and V, whereas in English, where no null pronouns are allowed, there are no licensing heads.

Languages also vary with respect to what types of null pronouns may be licensed (and in which contexts). Many languages which do not allow null referential subjects, for instance, do allow null expletives in this position. Rizzi cites Safir (1985) for German, Pollock (1986)
for French subjunctive clauses, and Platzack (1985) for insular
Scandinavian languages, as examples of such languages. Travis (1984)
argues that there is a third type: languages, such as Yiddish, which
allow both null expletives and null quasi-arguments (subject of weather
verbs), but not null arguments. Rizzi suggests that this typology can
be made to follow from the type of phi-features specified on the
licensing head for pro. A null argument requires full recovery and
thus its governing head must be fully specified, whereas a non-
arguments pro requires less specification and thus its head may contain
less phi-feature specification. A quasi-argument pro is in between.
Concretely, Rizzi proposes the principles in (72) to account for these
possible interpretations of pro.

(72) a. An NP is referential only if it has specification of person
and number. (= Rizzi's (95))

b. An NP is argumental only if it has the specification of
number. (= Rizzi's (96))

Heads have phi-features either morphologically, as is the case for
INFL in Italian, or through a rule of θ-role saturation, which, in
Italian, assigns arb ("arbitrary") to the θ-slot of a V giving it phi-
feature content and rendering it able to identify direct object pros
and give them an arbitrary interpretation. θ-role saturation may apply
in the syntax in Italian, whereas in English it is restricted to the
lexicon. This distinction derives the lexical idiosyncrasy and
syntactic inertness of missing arguments in English ('John is always
ready to please (people)'/'John is always ready to hit *(people)',
etc.) versus their productivity and syntactic activeness in Italian.
We return to this distinction below.

Rizzi’s system accounts for the range of interpretation of pro in the various constructions in which it may appear in Italian in an intuitively appealing way. Tensed clauses, whose INFL is fully specified for number and person, may have argument, quasi-argument, and non-argument pros. Pro subjects of small clauses to epistemic verbs can only be non-arguments (‘I believe pro likely that S’) since the governor of pro, ‘believe’ does not ə-mark pro (and thus pro can’t be arb) and does not have any phi-features either. In infinitival Aux-to-COMP structures pro may function as a non-argument or a quasi-argument since the (abstract) INFL here arguably has features for gender and number, which show up on past participles or predicate adjectives in these constructions, but not person, which never shows up.

Chinese is outside of this system, but predictably so, argues Rizzi. The reason Chinese does not fit is that pro in Chinese can function referentially, quasi-referentially, and non-referentially, even though there is no specification for phi-features at all. Exploiting Huang’s proposal that Chinese has no AGR, Rizzi suggests that lack of AGR is an indication that phi-features are not pertinent in a language. If phi-features are inoperative in a language, it is reasoned, then the feature specification principles of (72) are inoperative as well, and thus any licit pro is free to be argumental, non-argumental, or quasi-argumental.

Rizzi’s pro licensing schema offers an immediate and simple answer to one of our question of section 3.1 about pro in Hausa. The proposal that licensing heads are set category by category for each XΩ in a
language explains why prepositions can’t take a pro complement in Hausa. P is simply not in the set of licensing heads in Hausa. The arbitrariness of possible licensing heads from both a cross-linguistic and an intra-language point of view seems to warrant a parameter of this sort. I will assume therefore that such a parameter is to be included in some form in UG.

The second question posed in 3.1 is not so easily answered. At the end of 3.1, we were left wondering why only some nouns in Hausa allow pro complements. Rizzi’s analysis makes the prediction that, other things being equal, syntactic activeness of a missing argument will be tied to lexical generality, and syntactic inertness to lexical idiosyncrasy. This correlation is exactly what is found for pro direct objects in English and Italian. In Italian, all verbs may have a missing arbitrary object and these objects are syntactically active in that they may be controllers, they may be antecedents of anaphors, etc.

In English, verbs only idiosyncratically allow missing objects and these missing objects display none of the syntactic activity of their Italian counterparts. Rizzi accounts for this correlation by proposing that the object 9-role may be saturated by feature assignment to the 9-role slot of a verb in the lexicon only in English, but in the syntax as well in Italian. The result is that, because of the Projection Principle (cf. Borer, 1984), Italian direct objects, but not English direct objects, may be structurally represented as pro. The English rule, since it is restricted to the lexicon, applies idiosyncratically, whereas the Italian rule, since it may apply in the syntax and since syntactic rules do not normally have access to lexical material beyond
certain syntactic features such as [+N], [+V], applies generally.

We have seen that the correlation between lexical generality and syntactic activity of the missing argument holds for Hausa direct objects as well (though there are differences with Italian null objects which will be taken up below). The problem is that while missing arguments of nouns in Hausa are syntactically active (they participate in the resumptive pronoun strategy for relativization), they apparently are lexically idiosyncratic. Body-part nouns may take missing arguments; other nouns may not.

Noting a similar problem with respect to French prepositions, Rizzi (note 15) suggests that P is a licensor in French, but monosyllabic prepositions obligatorily cliticize to their complements in French. This excludes '[P pro]' where P is monosyllabic (à, chez, de, en, par, and vers; cf. Zribi-Hertz (1984:57)) since P has nothing phonetically realized to cliticize to. It also correctly allows all polysyllabic prepositions to take pro complements (avant, avec, contre, dedans, depuis, etc.; cf. Zribi-Hertz (op. cit.; note 6 for a complete list)). Pour and sans, which are monosyllabic and yet which allow pro complements, are exceptions (not mentioned by Rizzi). Given that the six monosyllabic prepositions listed above are the only prepositions which cannot take pro complements, it seems reasonable to suggest that these six are marked as clitics, regardless of their syllabic structure, whereas pour and sans are not. We might expect there to be independent support for the clitic versus non-clitic status of French prepositions.

There seems to be no obvious way to extend this analysis to Hausa
nouns, however. Non-body-part nouns clearly can stand alone (in other words, they are not clitics) and yet they cannot take pro complements. The same objection can be raised with regard to the French nouns which appear to be exactly analogous to Hausa body-part nouns. Here, I am thinking of "complex prepositions" such as à côté (de), à la fin (de), à l'intérieur, à l'extérieur, etc. (cf. Zribi-Hertz (ibid)), where the element governing pro is the noun côté, fin, intérieur, etc.

We are left, it seems, with the conclusion that only a subclass of Ns in Hausa (and in French) are part of the class of pro-licensing heads. While it may be true that only certain N heads may license pro, the class of N licensors is clearly not arbitrary. They are all nouns that are used "prepositionally", and their appearance with a pro complement is probably not unrelated to their use as adverbs.

In fact, if the pro-Identification system outlined in the preceding section is adopted, then these nouns must be peculiar in some way since they apparently are not themselves possible nominal identifiers for their pro complements. If they were, these structures would always be excluded since coindexation between the N head and its pro complement would constitute a Binding Theory violation. Pro would be bound within its governing category, in violation of Condition (B), which requires pronominals to be free in their governing category.

(73) * [NP Ni [NP pro; ] ]

The prediction is that generally nouns may not have pro complements (unless they have agreement) and thus should never be part of the set of pro-licensors, in any language.
What is special about body-part nouns in Hausa and the "prepositional" use of certain nouns in French? What seems to be different about these nouns is that they do not seem to have the same degree of potential independent reference that nouns normally have. As when they function as adverbs, their reference is inherently relational. Suppose that it is this adverbial-like property of these nouns which is directly responsible for their being able to be pro-licensers. We might assume, for example, that the inherently relational character of the meaning of these nouns excludes them from being possible identifiers of pro.

In French, certain nouns have this relational property when in juxtaposition with certain prepositions such as à—hence the term "complex preposition". The contrasts in (74) and (75) illustrate this. In the (a) examples, which contain a complex preposition, N can have a pro complement (whose syntactic activity is illustrated by its use here as a resumptive pronoun). In the (b) examples, the same N, which is this time not in a complex preposition, may not take a pro complement.

(74) a. C'est le genre de maison qu'on se sent bien à l'intérieur
     'It's the kind of house that you feel good inside of'

     b. *C'est le genre de maison qu'on aime bien l'intérieur
        'It's the kind of house that you really like the inside of'

(75) a. C'est le genre de réunion qu'on n'aime pas arriver à la fin
     'It's the kind of meeting that you don't like to arrive at
     the end of'

     b. *Voici le film que nous avons vu que la fin
        'Here's the film that we only saw the end of'

In Hausa, this class of nouns is phonologically distinct from
corresponding non-"prepositional" nouns: baayaa 'back' versus baaya 'behind; after', cikii 'stomach' versus ciki 'in(side), among', etc. (cf. (56) above).

If these remarks are on the right track, then we can say that N is a pro-licenser in French and in Hausa, but that only a certain class of Ns in fact allow pro-complements because of the requirements on pro-identification. The pro-licensing heads are INFL, V, and N in Hausa, and (at least) P and N in French.

The pro licensing head parameter, thus, does seem to allow for a coherent description of the positions in which pro may appear. This analysis is explanatory to the extent that it gives an account for the fact that pro appears only where it is governed by an identifiable class of words, in terms of syntactic features (as permitted by the Binding Theory).

The other half of Rizzi's analysis—that which attempts to account for how the content of pro is identified—meets with severe problems when confronted with Hausa. Hausa has AGR, and thus phi-features are exploited by Hausa, yet pro complements to verbs and body-part nouns are interpreted as referential arguments, despite the fact that the governing head is not specified for any phi-features. Rizzi himself (note 42) points out this problem, with particular reference to French prepositions.

In the following subsection, I would like to look explicitly at the similarities and differences between French "orphan prepositions" and Hausa body-part nouns and the suggestions Rizzi makes for incorporating the facts of the former into his analysis. I will argue

369
that modifications allowing for these facts and those of Hausa to be adequately described weakens considerably the explanatory force of the analysis, and that the modified zero-topic analysis proposed above in section 3.1 is preferable. The analysis retained here, then, incorporates Rizzi's pro licensing head parameter into the zero-topic/pro-Identification analysis, maintaining Chinese, etc., “inside” the system.

3.3 Similarities and Differences with French Orphan Prepositions

3.3.1 Some Similarities and Differences

All French prepositions, except the six mentioned above (à, de, etc.), and the nouns of "complex prepositions" such as à la fin de 'at the end of' may occur with a null complement. Zribi-Hertz (1984), who dubs these elements "orphan prepositions", gives a thorough presentation of their interpretation, distribution, and syntactic behavior, though she argues for no particular analysis of them. French orphan prepositions are strikingly similar to orphan body-part nouns in Hausa. The missing argument is interpreted as a definite pronoun, a [+human] factor is at play, and presence of a structural empty category is suggested by participation in a relative resumptive pronoun strategy. The antecedent of the missing argument may be an NP in topic position or in the discourse; the missing argument may also be identified with a non-linguistic (pragmatic) referent.

Let us consider first the [+human] factor involved with orphan prepositions and orphan body-part nouns. In Hausa, we have seen, both direct object pro and pro objects of body-part nouns are restricted to a nonhuman interpretation. This is in contrast with pro subjects,
which may be human. In section 2.5 of this chapter, I suggested that the nonhuman restriction on pro was to be attributed to a condition on long distance (= external to the minimal governing S) identification of pro. Since subject pros are identified locally, by INFL, they are not subject to this condition.

Standard French has a similar restriction on pro objects of prepositions and nouns. Zribi-Hertz suggests that this restriction in French is a result of the fact that overt, non-clitic pronouns in French can only refer to human NPs (cf. Ruwet (1969)). In other words, null pronouns in French occur where an overt pronoun is unavailable; French has no equivalent to English it. The examples in (76), from Zribi-Hertz (op. cit.), illustrate the nonhuman restriction.

(76) a. Ce puits semble avoir une profondeur vertigineuse, mais Pierre est déjà descendu jusqu'au fond ei / *de lui
‘This well seems to be incredibly deep, but Pierre has already gone down to the bottom (of it)’

(cf. Pierre cherche jusqu'au fond de lui les racines de son insatisfaction
‘Pierre is looking in the depths of himself for the roots of his unhappiness’)

b. Cette valise, j'étais venu avec ei / ?ellei
‘This suitcase, I came with (it)’

(cf. Mariej, j'étais venu avec ellei
Marie, I came with her’)

English and German, she notes, which do have special neuter pronouns, do not seem to have orphan preposition constructions either.

It is also pointed out, however, that in less formal styles or in "non-standard" dialects, there is no nonhuman restriction on orphan prepositions. That is, the status of a sentence like (77) varies
according to dialect:

(77) Marie, j'étais venu avec elle 'Marie, I came with (her)'

And, furthermore, the nonhuman restriction on null pronouns in Standard French is found even where the corresponding overt pronouns are clitics, which may be interpreted as human or nonhuman:

(78) a. As-tu lu les romans d'André Brink? 'Have you read André Brink's novels?'
    - Oui, je les aime beaucoup 'Yes, I like them a lot'
    - Oui, j'aime elle beaucoup 'Yes, I like (them) a lot'

b. As-tu rencontré les enfants d'André Brink? 'Have you met André Brink's children?'
    - Oui, je les aime beaucoup
    - Oui, j'aime elle beaucoup

Zribi-Hertz concludes from facts like (77) - (78) that the basic French use of empty pronouns to make-up for the absence of overt nonhuman strong pronoun forms has been extended to contexts where such a pronoun is available.

In Hausa, the picture is somewhat different. Clitic and non-clitic (independent) pronouns may be used for human or nonhumans.

(79) a. Wannan littasfiti/yaaroc, sun yi maganasa a kansa this book child lp do talk at head-3sm(Cl) 'This book/this child, we talked about him/it'

b. Maa/Waa kuka zoo da shii what/who 2p come with 3sm(Indep) 'What/who did you come with him/it'

372
c. Saabon fillim/maalamii, ban gan shi ba har yanzu
   new film/teacher NEG see 3sm(CL) NEG yet
   'The new film/teacher, I haven’t seen it/him yet’

Despite this fact, only where the referent is nonhuman (and the
governor is a verb or a body-part noun) may the pronoun be missing.
(Recall that in written texts, though, human object pros may be found.)

(80) a. Wannan littaafii, mun yi maganaa a kai e (cf. (79a))
   b. *Wannan yaaro, mun yi maganaa a kai e
   c. Saabon fillim, ban ganii e ba har yanzu (cf. (79c))
   d. *Saabon maalamii, ban ganii e ba har yanzu

Whatever merit the overt nonhuman pronoun gap theory may have for
explicating the development of object pros in French, clearly it cannot
constitute an adequate synchronic description of either Hausa or
French. I suspect that quite generally the nonhuman restriction, where
it exists, stems more from a requirement that pronouns with nonlocal
human antecedents must be overt, rather than a requirement that
nonhuman pronouns be null. This view, then, approaches that taken
by Jaggar (1985), who presents evidence (from Hausa) that human
arguments are more likely to be resumed across discourse by overt
morphological coding. Returning to diachrony once again, it might be
argued that the restriction of certain overt pronouns to a [+human]
interpretation, as in French, is a result of the obligatoriness of
human pronouns (and their consequent more frequent occurrence).
Likewise, [-human] pronouns, since they are not obligatory, over time
might tend to be considered as pleonasms. This seems to be true for
some Hausa speakers, for example, who tend to prefer object pros where
they are possible over overt pronouns.
Another area where French orphan prepositions and Hausa orphan body-part nouns differ is with respect to their occurrence in wh-constructions. While the gap of orphan body-part nouns may correspond to the variable of all sorts of wh-constructions (relatives, wh-questions, and focus), in French (and, more specifically, the non-standard varieties, which are the ones which permit a resumptive relative strategy at all) the gap of orphan prepositions appears only in relative clauses. Compare Hausa (64) with French (81) - (72).

(81) a. Voici la maison qu Marie est passée devant t1
   'Here's the house that Marie passed in front of'

   b. La fille que je connais bien le gars qui sort avec t1/elle
   'The girl that I know well the guy that goes out with (her)'

(82) a. *Qu'est-ce que Marie est partie sans t1
   'What did Marie leave without?

   b. *Qui est-ce que Jean va voter pour t1/lui
   'Who is John going to vote for (him)?'

The difference between colloquial French and Hausa here is that French has a single resumptive pronoun strategy, which applies at LF and is restricted to relativization (cf. Bouchard 1984 for discussion). Hausa has this same resumptive pronoun strategy, but, in addition, has an S-structure resumptive pronoun strategy which allows pronouns to be coindexed with operators (or traces to be spelled-out as pronouns), as a strategy to avoid ECP violations (cf. section 7 of chapter 1). Thus wherever, *pro, a pronoun, is possible, a variable is also in principle possible in Hausa. The effect is that Hausa allows general "stranding" of body-part nouns. Only the LF resumptive pronoun strategy allows for the effects of subadjacency to be skirted, however. Since subadjacency is
a condition on syntactic 'Move-\(\alpha\)' (or S-structure representations), pronouns not coindexed with an operator antecedent until LF, escape its effects. (81b), a case of relativization out of a relative clause, illustrates this possibility for French, and (83), for Hausa.

(83) Gaa littaa\(fi\)ñ da Ali ya san waa / \(s\)\(e\)aalaam\(i\)ñ da ya yi here's book-the that A 3s\(m\) know who teacher-the that 3s\(m\) do magan\(a\)a a kai e\(i\) / kansa talk at head head-of-it 'Here's the book that Ali knows who/the man who talked about (it)'

As predicted, the pro object to a body-part noun is subject to subyacency when used as an "ECP-type" resumptive pronoun. In other words, pro body-part noun complement resumptive pronouns behave just like pro subject resumptive pronouns in nonrelative wh-constructions:

(84) a. *Wane littaaf\(i\)ñ kuka san waa\(i\) t\(j\) ya yi magan\(a\)a a kai e\(i\) which book 2p know who 3s\(m\) do talk at head 'Which book do you know who talked about (it),'

(cf. Wane littaaf\(i\)ñ kuka yi magan\(a\)a a kai e\(i\) 'Which book did you talk about (it)'

b. *Waa\(i\) Ali ya san littaaf\(i\)ñ da e\(i\) ya rubuut\(a\)t\(j\) who A 3s\(m\) know book-the that 3s\(m\) write 'Who does Ali know the book that (he) wrote?'

(cf. Waa\(i\) Ali ya cee wai e\(i\) zai zoo goobe 'Who did Ali say that (he) will come tomorrow?')

We can summarize the differences and similarities between French orphan prepositions and Hausa body-part nouns as in (85), where the settings for parameters concerning pro-licensors, locality on pro-Identification, and coindexation between pronouns and operators are given.
(85)  a. pro-licensers: French: P, N
      Hausa: N

     b. pro-Identification:
      Non-standard French: may be nonlocal
      Standard French: may be nonlocal, with human restriction
      Hausa: may be nonlocal, with human restriction

     c. Resumptive Pronoun Strategies:
      Non-standard French: LF resumptive pronouns
      Standard French: no resumptive pronouns
      Hausa: LF and S-structure resumptive pronouns

     In the following subsection, we return to the identification of
     pro, comparing our analysis of pro-Identification (including
     incorporation of Rizzi’s proposal for a pro-licenser parameter) with
     that given in Rizzi (1986).

3.3.2 Accounting for the Facts

     Rizzi (1986) notes that orphan prepositions in French pose a
     problem for his account of the sanctioning of referential pro. The
     problem is that the pro in orphan preposition constructions is
     referential, yet the licensing head (P, and certain Ns) has no phi-
     features at all and, thus, should, by (72), only be nonargumental.
     This is because French does have AGR and thus phi-features must be
     operative in French and thus pro-licensing is governed by (72). Two
     possible answers for this problem are suggested. We will look at these
     in turn.

     One avenue that Rizzi suggests might be explored is to consider
     the pro of orphan prepositions as being referential by default. The
     idea is that since this pro is limited to [-human] referents, this also
means [+3 person] referents, and thus determination of the feature for person is in fact given. Besides the problem Rizzi himself notes about the determination of the feature for number, this solution would offer no reason for why pro is referential in Non-standard French where there is no [+human] restriction on orphan preposition pros.

The alternative answer Rizzi offers is to extend his analysis of Italian arbitrary object pro—i.e., the 0-slot corresponding to the object of the orphan preposition would be assigned phi-features, which would identify the pro. There is at least some evidence, he argues, which suggests that it is correct to view the sanctioning of pro in French as being dependent on 0-marking:

(86) a. On est parti avec [ma voiture] / [pro]
   'We left with (my car)'

   b. On est parti avec [ma voiture à réparer] / *[pro à réparer]
      'We left with *(my car) to repair'

Rizzi suggests that the contrast in (86) might be because pro in (86b) is not 0-marked by the preposition, but rather is the subject of the small clause.

Although perhaps plausible because of (86), this solution to the problem posed by orphan prepositions seems to me to weaken considerably the hypothesis of pro-identification by phi-features as the way of sanctioning the occurrence and interpretation of pro. Positing phonologically null phi-features as the source for the recoverability of the null phi-features of pro in the case of the arbitrary object pro in Italian is different in that referential object pro in Italian is restricted to this interpretation and thus, is in effect identified by
default. This is not true for referential object pro in French or in Hausa, as we have seen. If phonologically null phi-features have the general capacity to identify empty pronouns, why does there exist a certain correlation between phonologically overt phi-features on heads and the possibility of empty pronouns, as is evidenced by languages such as Hebrew and Paahato?

Is positing that null pronouns may be identified by the phi-features of a zero topic, the alternative I have argued for here, really any different? I think so. The difference is that constructions containing a null pronoun linked with a null topic alternate in the language with both constructions containing a null topic linked with an overt pronoun and constructions containing an overt topic linked with a null pronoun. The language learner thus has independent evidence to let her know that 1) topics may be zero, and that 2) object pronouns may be zero (and, when they are, they refer to a topic). The natural assumption for the learner to make therefore is that the two may co-occur—i.e., a zero pronoun may be identified by a zero topic.

To summarize, the range of interpretation of pro is certainly dependent on the phi-features of the identifier, perhaps in the way Rizzi has suggested (i.e. (72)). However, it also seems clear that the identifier is not necessarily the pro-licenser. In the system adopted here, the identifier of pro is other than the pro-licenser just in case either the pro-licenser is not a nominal element or is not a possible identifier (because its meaning is inherently relational or because it is already in an identification relation).
Before closing our discussion of body-part nouns and orphan prepositions, we shall take up briefly some of the implications of identification of pro by an element other than the pro-licenser, as they relate to these constructions.

First, recall the behavior of French orphan prepositions with small clause complements, mentioned above in connection with Rizzi's proposal that identification of orphan preposition pro be tied to 9-marking, and illustrated by (86). The crucial fact noted there was that a preposition may not sanction a pro that it governs if that pro is the subject of a small clause. Why is this so under the pro-Identification system being adopted here? We have assumed in this study, following Stowell (1981), that clauses have the features [+N,-V,+Tense], NPs the features [+N,-V,-Tense], and gerunds [+N,-V]. As was seen in chapter 1, section 5, this view of these categories allows for desirable restrictions to be placed on subcategorization frames and accounts for which types of categories may appear with a COMP node. Now, in the example in question ((85b)), this means that the closest c-commanding nominal element to the pro subject of the small clause is the clausal category S':

(87) On est parti [pp avec [s.c. proi S' i ]]

However, coindexation with S', obligatory by pro-Identification, does not result in identification of pro since S' has no phi-features. The structure is therefore ruled ungrammatical, as required by the facts.

Another set of facts where pro-Identification by an element other than the pro-licenser makes specific predictions concerns a rather
intriguing similarity between Hausa and French with respect to the binding of null objects, though the relevant judgements in both languages seem to be rather delicate. Recall from section 2.5 above, that a pro object in Hausa cannot be coreferential with the subject of the upstairs clause, though an overt pronoun can. Examples like (88) were given.

(88) Kur’aaniyi yaa ce [ mu karantaa *pro/āi/*shī/pro] koowace raanaa Koran 3s.pl say 1p.read it every day
‘The Koran says we should read it every day’

This fact is unexpected by the Binding Theory since both pro and overt pronominals are regulated by Condition (B), which requires only that pronominals be free within their governing category (which, for the object in question is the embedded S).

It appears that there are analogous facts in French, though judgements should be regarded with some caution. Zribi-Hertz (op. cit.) notes that while nonhuman gaps of orphan prepositions apparently may be coreferential to a subject, as in (89).

(89) a. La tableï avait des tabourets tout autour ei
   ‘The table had stools all around (it)’

b. La maisonï avait un potager derrière ei et une cour devant ei
   ‘The house had a garden in back and a courtyard in front’

c. Le cadavreï avait une épée au travers ei
   ‘The corpse had a sword through (it)’

d. Ce curieux télescope incite les passants à regarder dedans ei
   ‘This curious telescope incites passers-by to look inside’

e. Cette forme noireï, Pierre n’a tiré qu’à côté ei
   ‘This black shape, Pierre just shot next to (it)’

human gaps may not, though overt pronouns with a human referent may:6

380
(90) a. Pierre a mis la serviette devant/derrière lui / *si
   'Pierre put the napkin in front/behind him'

b. Pierre a ordonné à Marie de tirer sur lui / *dessus si
   'Pierre ordered Marie to shoot at him'

c. Pierre a bavé sur lui / *dessus si
   'Pierre drooled on himself'

d. Pierre n'a tiré qu'à côté de lui / *si
   'Pierre just shot next to himself'

The French facts appear, at first glance, to merely reinforce the above-mentioned nonhuman restriction on orphan prepositions, and this is the account that Zribi-Hertz gives. However, she notes that the ungrammaticality in (90) seems to be stronger than the marginality Standard French speakers usually assign to [+human] pro. Moreover, I have found that speakers of dialects of French which do not have the nonhuman restriction (e.g. québécois and colloquial continental French) share the grammaticality judgements in (90). This is very puzzling, to say the least, if this ungrammaticality is tied to the nonhuman restriction on object pros. And, it turns out that there are structures of this type in which even nonhuman gaps may not be coreferential with a higher subject.

(91) a. Ce livre ne te laisse pas sortir sans e]/*i
   'This book doesn't let you go out without (it)'

b. Le Coran dit qu'on devrait prier avec e]/*i
   'The Koran says we should pray with (it)'

It seems, in other words, that the "exceptional" facts are actually those in (89). Let us therefore tentatively assume that object pros cannot be coreferential with subject NPs, for reasons to
which we return. Why then in (89) possible? The orphan prepositions in (90) are words indicating location. Suppose that such orphan prepositions (and perhaps others) may also be "true" adverbs—that is, that they may occur without a structural object, much as d'abord in Zribi-Hertz' example in (92).

(92) La grammaire générative, mieux vaut apprendre l'anglais (d'abord) 'Generative grammar, better learn English first'

This would mean that French (90b), for example, is structurally identical to English (93).

(93) The house has a garden in back and a courtyard in front

Notice now that locative adverbs of this type do not seem to be able to be used to indicate a location with respect to mobile referents, such as humans:

(94) Peter put the napkin in front *(of him)

If the location referred to is not separate to the human, but part of him, then such structures become grammatical in both French and English:

(95) a. John prefers to carry the baby in front
    b. Jean préfère porter le bébé devant

The mobility factor of the referent can also be seen in the French contrast in (96) (and the English translations).
(96) a. Le cadavre avait des fleurs tout autour
   'The corpse had flowers all around'

   b. Le train avait des arbres tout autour
   'The train had trees all around' [OK if train is immobile]

   c. Le train avait des arbres tout autour de lui
   'The train had trees all around it' [train can be mobile]

Whatever the exact nature of this restriction on locative adverbs is, it does seem to account for why an adverb may occur in (89), but not in (90).

Now, as to why an orphan preposition is excluded in all of these cases, in fact, this follows from our analysis. In our discussion of phi-Identification of pro, we argued that pro in languages like English, Hausa, and French, which have AGR, cannot be identified by either AGR or the subject because the two are already in an identification relation with each other, and identificaton relations are strictly one-to-one. This hypothesis automatically provides an account for the unusual facts of Hausa and French just reviewed here.7

(97) a. [TOP g9] [Pierre1 AGR1 a bavé dessus proj]
   'Pierre1 drooled on itj'

   b. [TOP g9] Kur'aanii1 yaq1 cee mu karantaq proj]
   'The Koran1 says we should read itj'

Overt pronouns are free to refer to the subject since they are not coindexed to it by phi-Identification. That is, they are not referentially dependent on the subject, but merely are coreferent as a result of "accidental" reference (see Evans (1980) on this).

In conclusion, the study of the similarities and the differences
between orphan prepositions in French and Hausa body-part nouns has allowed us to refine our analysis of how pro is sanctioned. We have incorporated the notion of pro-licenser from Rizzi's work into the set of parameters (55) which account for the sanctioning of pro. We have also found in these facts further support for the zero topic parameter, as one method of sanctioning pro. In the remaining two sections of this chapter, we consider two other contexts where pro might be expected to occur.

4. Subject pro

The sanctioning of subject pro in most clauses in Hausa is very straightforward. As has already been mentioned at several points in this study, all clauses with tense in Hausa have an INFL word which shows person, number and gender agreement with the subject. Some paradigms are given in (98): (98a) shows the perfective INFL paradigm, (98b) the future INFL paradigm, and (98c) the subjunctive.

(98) a. nsa / mun / kaa / kin/ kun / yaa / taa / sun / an tafi
   1s  1p  2sm  2sf  2p  3sm  3sf  3p  indef go
   'I/we/you-m/you-f/you-p/he/she/they/one) went'

b. zan/zaa mu/zaa ka/zaa ki/zaa ku/zaa ta/zaa su/zaa a tafi
   1s  1p  2sm  2sf  2p  3sm  3sf  3p  indef go
   'I/we/you-m/you-f/you-p/he/she/they/one will go'

c. Sunaa soo in / mu / ka / ki / ku / ya /ta / su / a tafi
   3p  want 1s  1p  2sm  2sf  2p  3sm  3sf  3p  indef go
   'They want that (I/we/you-m/you-f/you-p/he/she/they/one) go'

The pro subject in clauses of this sort is fully identified by the phi-features in INFL (with which it is coindexed by subject-INFL agreement), in conformity with Phi-feature Identification, as developed in the preceding two sections.

384
There are, however, at least three constructions where the occurrence/nonoccurrence of a subject pro is more interesting. One is copular constructions, in which pro is restricted to a third person interpretation. The second is pro in "AGR-drop" constructions, where the phi-features of INFL may be "dropped", and the third is the subject position of small clauses, where pro is excluded altogether.

Copular constructions provide support for the link between complete identification and the possibility of a null pronoun. The AGR-drop phenomenon leads us to consider empty phi-features in AGR as being subject to Phi-feature Identification much the way pro is, and will give us an occasion to take a glimpse at the pan-Chadic subject pro situation. Finally, the ungrammaticality of pro subjects in small clauses follows automatically from the formulation of Phi-feature Identification developed in this chapter, and thus provides additional (independent) support for it.

4.1 Copular Constructions

4.1.1 Introductory Remarks

It was argued in section 9.3.2 of chapter 1 that copular sentences are headed by an INFL nee (m/p)/cee (f) which assigns a 0-role to a complement predicative NP, giving the structure in (99).

(99)

```
IP
  NP
   I'  NP
        
  nee/cee
```
INFL, we have just seen, is a pro-licenser in Hausa and therefore pro in either NP position in (99) is a potential pro position. The predicate NP is governed by I and the subject NP is coindexed with I by subject-INFL agreement. We might expect, then, that pro should, in principle, be possible in either position. In fact, pro may appear only in the subject position of equational sentences. All of (100), which contain a pro subject are acceptable, whereas the sentences without an overt pronoun in (101) are unacceptable.

(100) a. Ita/pro [I′ maalaamaa cee] she teacher-f COP-f ‘(She) is a teacher’
     b. pro [I′ shii nee] him COP-m ‘(It) is him’
     c. Suu/pro [I′ maalaamai nee] they teachers COP-p ‘(They) are teachers’

(101) a. Wannan [I′ shii nee] / *Wannan pro nee this it COP-m ‘This is it’
     b. pro [I′ shii nee] / *pro pro nee him COP-m ‘It’s him’

The explanation for the facts of (101) follows from our analysis of the copular INFL as a clitic on the predicate NP. Recall that it was argued on the basis of word order and tone polarity facts that nee/cee is attached to the right of [NP,I’]. Now, under the standard assumption that being affixal or clitic means that an element cannot stand alone and therefore requires an overt host to attach to, the ungrammaticality of pro as [NP,I’] follows. If [NP,I’] is pro, nee/cee
has nothing overt to attach to:

(102)

```
  NP          NP
   I          I'
     I

pro-NEE
```

Thus, regardless of Phi-feature Identification or Binding Theory conditions, (102) is out because I is a morphological clitic.

Turning now to the fact regarding pro subjects in copular constructions, pro may appear as the subject of an equational sentence just in case it has a third person referent (of any number or gender). First and second person subject pros are excluded even where there is a discourse or pragmatic topic or a potential argument controller. (103)-(105) illustrate this: the (a) examples contain non-third person subjects, while the (b) examples have third person subjects.

(103) a. A: Aikin mee kakee / kikse yii?
   work-of what 2am 2sf do
   'What kind of work do you do?'

   B: Nii / pro daalibii nee / daalibaa cee
      student-m COP-m student-f COP-f
      'I am a student'

b. A: Aikin mee sukee yii?
   'What kind of work do they do?'

   B: Suu / pro daalibai nee
      they students COP-p
      '(They) are students'

(104) a. Muu, kuwa, maalaamai sunaa tseammanii muu*/pro daalibai nee
   us PRT teachers 3p think us students COP
   'As for us, the teachers think we are students'
b. Ali, kuwa, maalaamai sunaa teemaaanii shii/pro d'aliibii nee
A PRT teachers 3p think him student COP
'As for Ali, the teachers think (he) is a student'

(105) a. Naa gayaa maka wai kai/*pro raggoo nee
      miki kee/*pro raggwaa cee
ls tell to-you(m/f) that you (m/f) lazy (m/f) COP (m/f)
'I told you that you are lazy'

b. Ali yii gayaa wa Aabu wai ita/pro raggwaa cee
A 3sm tell to A that she lazy COP
'Ali told Abu that (she) is lazy'

In the next subsection, an analysis of these facts will be offered
which is fully consistent with the theory of pro-sanctioning developed
in this study.

4.1.2 An Analysis

Let us begin by determining why pro third person subjects are
permitted in equational sentences; this will lead us to why non-third
person pros are excluded from this position. The closest identifier to
the subject position is INFL, but the copular INFL has defective AGR.
It appears as though only gender is overtly marked--nee is masculine
and cee is feminine, and even then only in the singular:

(106) a. pro mace cee   b. pro maataa nee/*cee
       woman COP    woman COP COP
       '(She) is a woman'      '(They) are women'

It must be pointed out, though, that grammatical gender is never
morphologically marked in the plural in Hausa, whether this be on INFL,
on adjectives, or on nouns (cf. Tuller 1982a for discussion and
analysis):
(107) a. A: Inaa måaa/saa/mazaa sukee
    where women men 3p
    'Where are the women/men?'

    B: pro suunaa garii
    3p town
    'They are in town'

b. Måaa/saa/mazaa måalaamai nee
    women men teachers COP
    'The women/men are teachers'

We may conclude that the copular INFL is no different from any other
INFL with respect to gender marking and therefore that this feature is
maximally specified in it. That is, it can be assumed that the copular
INFL is base-generated with a gender feature, which is then checked for
agreement.9

But, clearly gender is not sufficient to identify pro since gender
is also marked on the first and second person copular INFL (cf.
examples above) and yet its subject may not be null (and cf. also note
9).

Notice that we may also assume that the copula is marked for
number. Cee can only be singular (cf. (103)) and thus must carry the
features [-plural]. It is reasonable to conclude that nee is also
marked for number, either [+plural] or [-plural], since this is
manifested in the predicate nominal, which must agree in number marking
with the subject:

(108) Yaaroo daaliba nee / Yaaraa daaliba/*daalibii nee
    boy students COP children students student COP
    'The boy is a student'  'The children are students'

Assuming that subject-predicate agreement in equational sentences is
mediated by INFL, there is reason to believe that all forms of the
copular INFL have number marking, even though it manifests itself on INFL in the feminine only. However, once again, number is not sufficient to identify a pro subject: number is also marked in the first and second persons, but first and second person pros are not grammatical in copular constructions, as we have seen.

The distinguishing feature for pro-sanctioning in copular constructions seems to be person marking. Suppose that third person in Hausa, as in many languages (e.g. Arabic) is the unmarked person. Concretely, suppose that pro is automatically interpreted as third person in the absence of an identifier with person features. Third person, in other words, is a sort of default person feature in Hausa, a property which it undoubtedly has retained from Proto-(West)-Chadic (a point to which we return in the following section).

The result is that nee/cee, which has only gender and number marking, may take only a third person subject since pro can get no other person marking in this position. A pro cannot chose to be identified by a more complete phi-feature identifier because Phi-feature Identification requires pro to be identified by the closest identifier, which is INFL. The ungrammatical examples in (100) - (102) are thereby excluded. In the absence of a sufficiently "rich" AGR, non-third person pro is excluded.

4.2 AGR-drop

4.2.1 The Phenomenon

A property of Hausa that is most probably at least historically related to the third person pro of copular constructions is what we
will refer to as "AGR-drop". In the affirmative continuous and habitual aspects, third person AGR marking of INFL may be missing in certain contexts. That AGR-drop is limited to these aspects is doubtless due to the fact that in other aspects (and in the negative) the AGR portion of INFL cannot be regularly separated out from the Tense-marking portion (cf. Tuller 1982b). This can be seen by examining the third person INFL paradigms in (109), which may undergo AGR-drop (shown here by parenthesis around the AGR-marking) with those in (107), which do not permit AGR-drop:

(109) Continuous: (ya)ǹa / (ta)ǹa / (su)ǹa
    3sm  3sf  3p
Relative Continuous: (ya)kèe / (ta)kèe / (su)kèe
Habitual: (ya)kàn / (ta)kàn / (su)kàn

(110) Perfective: yaa / taa / sun
Relative Perfective: ya / ta / sukà
Subjunctive: yà / tà / sù
Future: zai / zaa tà / zaa sù
Potential: yàa / taa / saa

Negative Continuous: (bàa) yàa / (bàa) tàa / (bàa) sàa

The usual description of AGR-drop states that subject marking is optional when preceded by an overt subject of some kind (we return to this directly). R. Schuh (p.c.) points out that there is also a condition on what may follow an INFL form with missing AGR. The generalization he came to (and which my data confirms) is that AGR-drop is possible only where the head of the following predicate is overt. Examples are given in (111)-(113).
(111) a. Abdu (YA)NAA gidaa Yanzu
   3sm house now
   'Abdu is at home now'

b. Inaa Abdu YAKE/*KEE yanzu?10
   where 3sm now
   'Where is Abdu now?'

(112) a. Aikii Muussaa (YA)KEE yii
   work 3sm do
   'Work Musa is doing'

b. Aikii Muussaa YAKE/*KEE
   'Work Musa is (doing)'

(113) a. Mee yaaraa (SU)KEE yii cikin huuntuu?
   what children 3p do in rest
   'What do the children do during the vacation?'

b. Mee yaaraa SUKEE/*KEE cikin huuntuu?
   'What do the children (do) during the vacation?'

Notice in particular that it is not extraction from the predicate per se that blocks AGR-drop, as the (a) examples just given show, and the examples in (114) make clear.

(114) a. Mee Muussaa (YA)KEE karan saawaa a jaami‘aa?
   what 3sm study-VN at university
   'What is Musa studying at the university?'

b. Inaa Aisha (TA)KEE tafiyyaa haka?
   where 3sf go-VN thus
   'Where is Aisha going like that?'

Rather, it seems to be that, in order for AGR-drop to be licit, INFL must be adjacent to a category in the predicate phrase which has phonological content.

Suppose that INFL, when amputated of AGR, is no longer an independent word. In other words, suppose that Tense is an affix which must be attached to either AGR or to the following predicate phrase.
If both of these are empty, the structure is excluded on the same grounds as an unaffixed copula was excluded in the previous section: morphological dependents require a phonologically overt host. (115), therefore, is ungrammatical.

(115)

Recall that one of our principle arguments that (full) INFL is not a clitic was that a set of modal particles which cannot appear between clitics and their hosts may appear between INFL and VP. Now, if the bare Tense-marker is a clitic on the predicate phrase, we should expect that modal particles may not appear between it and the following predicate. The facts show exactly this. (116-116a) show that a particle may intervene between a full INFL and the following predicate and (116-116b) show that this is not possible when INFL consists only of Tense.11

(116)  a. Ali YANAA (*ma) tafiya Kanoo
       A 3s\(m\) PRT go-VN K
       ‘Ali is going to Kano’

       b. Ali NAA (*ma) tafiya Kanoo

(117)  a. Aisha TANAA (dai) son Muusaa
       A 3sf PRT like-VN-of M
       ‘Aisha likes Musa’

       b. Aisha NAA (*dai) son Muusaa
(118) a. Yaaraa SUNAA (dai) karanta Rur’aanii
   children 3p    PRT read-VN Koran
   ‘The children are reading the Koran’

   b. Yaaraa NAA (¬dai) karanta Rur’aanii

Concentrating now on the conditions on what precedes an AGR-drop
INFL, an accurate description of the facts would seem to be one which
refers to two sets of grammaticality judgements. The more restrictive
set of judgements can be summarized as follows: AGR-drop is possible
only when the subject position is filled by a lexical subject or by the
trace of a lexical subject which has moved to the local COMP. Examples
are given in (119).

(119) a. Abdu NAA tafiya Kanoo
       A go-VN K
       ‘Abdu is going to Kano’

   b. Naa ga yaaroo (wan)dai tis KEE aikii a gidan  sarkii
      ls see boy who-that work at house-of emir
      ‘I saw the boy who works at the emir's house’

   c. Waai tis KEE son          Abdu?
      who love-VN-of A
      ‘Who loves Abdu?’

   d. Abdui (nee) tis KEE aikii a gidan  sarkii
      FOC work at house-of emir
      ‘ABDUU works at the emir’s house’

AGR-drop is unacceptable with a pro subject, whether the antecedent is
left dislocated (120a), right dislocated (120b), in the preceding
discourse (120c), or an argument in the same sentence (120d).

(120) a. Yaaron nan, pro *(YA)NAA aikii a gidan  sarkii
       boy-the here 3sm work at house-of emir
       ‘As for this boy, he works at the emir’s house’
b. \( \text{pro} \quad \text{*(YA)} \text{NAA tafiyya Kanoo, Muusa} \quad 3\text{sm} \quad \text{go-VN} \quad K \quad M \quad \)  
\( \text{*(He) is coming, Musa} \)  

c. A: Inaa Aabu? B: \( \text{pro} \text{ NAA zuuaw} \)  
where A \( \text{come-VN} \)  
\( \text{Where’s Abu?} \)  
\( \text{*(She) is coming} \)  

d. \( \text{Maalamaai sunaa tsammaanii pro NAA da iikoo da yawaa teachers } 3\text{p} \text{ think} \quad \text{with power} \quad \text{a-lot} \)  
\( \text{The teacher thinks (they) have a lot of power} \)  

Finally, these speakers also reject AGR-drop when the subject has been moved to a non-local COMP:  

(121)  
a. \( \text{Su waaj Ali ya cee } g^s \quad t_i \quad g^s \quad t_i \quad \text{*(SU) NAA zuuaw} \)  
they-who A \( 3\text{sm} \text{ say} \quad 3\text{p} \text{ come-VN} \)  
\( \text{‘Who (and all) did Ali say was coming?’} \)  

b. \( \text{Yaarinyar daa suka cee } g^s \quad t_i \quad g^s \quad t_i \quad \text{*(TA) NAA zuuaw} \)  
girl-the that \( 3\text{p} \text{ say} \quad 3\text{sf} \text{ come-VN} \)  
\( \text{‘The girl that they said was coming’} \)  

c. \( \text{Salaamatuu suka cee } g^s \quad g^s \quad t_i \quad \text{*(TA) NAA zuuaw} \)  
\( 3\text{p} \text{ say} \quad 3\text{sf} \text{ come-VN} \)  
\( \text{‘Salamatu they said was coming’} \)  

However (and here we begin description of the second set of judgements), one can find examples in texts like some of those in (120). Abraham (1959:98) gives (122a), Jaggar (1985) cites (122b) from Isaa (1980). And, such examples have been collected from speakers of both Kano (=Standard) and other Hausa dialects—cf. Gouffé (1968/69:5), who reports (122c).  

(122)  
a. \( \text{Kiishiyya baa haushii: anaa ganiinki, KAN zaagi mijji co-wife give anger indef see-you HAB abuse husband} \)  
\( \text{‘Fellow-wife, you cause of annoyance! One looks at you and abuses one’s husband’} \)  

b. \( \text{Kalala NAA can NAA fana da washin wuRaa} \)  
\( K \text{ CONT there CONT struggle with sharpening knife} \)  
\( \text{‘Kalala was there, (he was) struggling to sharpen the knife’} \)
c. Yaaroo NAA nan NAA cin namese
   boy CONT there CONT eat-VN-of meat
   'The boy was there (he was) eating meat'

Likewise, examples of AGR-drop with a trace subject and a nonlocal wh-antecedent can be found in texts and are accepted by some speakers. (123) is an example from the collection of folk tales in Imam 1980 (p. 123).

(123) To jama’a waj kuka gani ti KEE da mata
   OK people who 2p see CONT with wife
   'So, ladies and gentlemen, who do you think is married?'

The facts of (119)-(123), although a bit messy, can be given a plausible account, I believe, if we split the judgements in the way I have presented them here, and thus talk about two dialects or registers. These sets of judgements, labeled "A" and "B", are summarized in (124) according to what the antecedent of the missing AGR is.

(124) Overt Lex. Overt Local Nonlocal Overt Zero
       Subject COMP COMP TOPIC TOPIC

   "A": ✓ ✓ * ✓ ✓
   "B": ✓ ✓ ✓ ✓ ✓

4.2.2 Elements of an Analysis

We begin by considering the grammar represented by the "A" judgements in (124). Although it is true that A-speakers disallow a null agreement when the subject is pro, the facts of AGR-drop cannot be just a consequence of the conditions on the identification of pro. The reason is that AGR-drop is also unacceptable when the subject is not
pro, but a trace (as in (121)), which we have every reason to believe is properly governed by its antecedent in COMP (cf. (119b-d)).

Since the distribution of AGR-drop cannot be predicted on the basis of the distribution of pro, it is logical to consider it to be due, rather, to conditions on the appearance of empty AGR itself. Suppose this is indeed the case. Assuming that INFL is in COMP at LF (cf. discussion in section 6.3 of chapter 1), and that Phi-feature Identification, which is ultimately a part of the ECP, applies (like the ECP) at LF, the condition operating on empty AGR identification in Hausa seems to be that empty AGR must be identified within the minimal clause that contains it—CP (−S′). That is, identification of ∅-AGR (at least in tensed clauses) is local in Hausa (cf. parameter (55c)). In (125), the relevant structure,

(125)

\[
\text{TOPIC} \quad \text{CP} \\
\quad \text{SPEC} \quad \text{C′} \\
\quad \quad \text{C} \quad \text{IP} \\
\quad \quad \quad \text{INFL} \quad \text{NP} \quad \text{I′} \\
\quad \quad \quad \quad \text{AGR} \quad \text{TENSE} \\
\quad \quad \quad \quad \quad \text{∅} \quad \text{NAA/KEE/KAN}
\]

a pro subject is excluded because ∅-AGR, the closest c-commanding nominal element for pro is not an adequate identifier. Furthermore, ∅-AGR has no local identifier, pro having no phi-features either. If the subject is overt or if there is an overt wh-element or focus element in \{SPEC,CP\}, then ∅-AGR is identified within CP. Neither a trace in

397
[SPEC,CP] nor a trace in subject position can identify O-AGR either since traces, we have assumed (cf. Bouchard 1984), do not have phi-features. This accounts for the "A" judgements. What about the "B" judgements?

In the grammar representing the "B" judgements, third person AGR-drop is seemingly unrestricted. This cannot be because identification of O-AGR is simply not local since this would not explain why non-third person AGR-drop is not possible. Suppose therefore that instead of an empty AGR, an INFL may simply have no AGR at all (in the third person, for reasons to be elaborated below)—in other words, the AGR node may be entirely absent. (This suggestion is in the spirit of proposals made in Borer 1986a.) That is, AGR-drop in the "A" grammar is (126a), but (126b) in the "B" grammar.

(126)  "A": [I [AGR a] TENSE ]
"B": [I TENSE ]

In the "B" grammar, AGR in the third person may be null; it is literally the unmarked form. Since there is no empty AGR, there is nothing to identify and thus AGR-drop may occur with a trace subject whether or not the wh-antecedent is in the local COMP.

Now, why is a pro subject permitted with an INFL which has no AGR node? It seems that the answer follows very simply: when INFL has no AGR node, it is not a nominal element and thus the subject pro is free to be identified by a topic, its closest c-commanding nominal element. This would seem to pose a major problem, however. We have argued all along here that nonlocal identification is restricted to nonhuman
referents, a condition that is not respected in these cases. This is in fact exactly what I suggest accounts for the marginality of AGR-drop with pro subjects and its higher frequency in written texts. Recall from our discussion of object pro that some speakers marginally accept human null objects and that examples can be found in written texts. In both cases, it appears to be more accurate to speak of two different registers—a more conservative/literary one (= "B") and a more ordinary one (= "A"), rather than two dialects, since there seems to be no regional factor at play here.

It is at this point that a look at the larger Chadic picture may be instructive. The typical Chadic situation with respect to subject agreement is for there to be obligatory, morphologically invariant first and second person subject markers. In the third person, an independent pronoun may optionally appear (but never with a lexical subject). This situation, exemplified by Ngizim, has been reconstructed for Hausa as well (cf. Newman and Schuh 1974) on the basis of the facts under discussion here, among other things. Third person pronouns have apparently been reanalyzed as AGR in modern Hausa, yet the older pattern has been retained as an option.

We now may make an attempt at answering the question of why INFL without an AGR node is limited to the third person in "Grammar B", by attempting to answer the same question for the pan-Chadic situation. I propose the following: Topic chain formation is restricted to third person topics, though these may be either human or nonhuman. In modern Hausa, topic chain formation has, for most speakers, been narrowed to third person human topics as INFL has come to consist of both TENSE
and AGR and thus as there is evidence to suppose that a pro subject is identified by AGR. Notice that there is no reason to assume that topic chains may consist of other than third person NPs since nonhuman pronominals (the only kind that can be empty for most speakers) are necessarily third person.

The optionality of third person subject marking is manifested by an empty AGR node in Grammar A, and thus is subject to the nonhuman topic chain formation restriction. Register A represents full integration of subjects clitics as AGR and AGR as an obligatory element in INFL. When phi-features do not appear in INFL, they must be identified just as any other empty nominal must. In Grammar B, which may be closer to an earlier stage of Hausa, the optionality of third person subject marking manifests itself as lack of an AGR node and hence there is unrestricted third person topic chain formation. Variation in judgements may thus be attributed to knowledge of the more conservative register (Grammar B), which is preserved in written texts, for example.

I believe that the hypothesis outlined here gives a reasonably adequate account of the facts. This account relies on the modular account of pro-sanctioning developed here in that variation is explained in terms of different settings for topic chain formation and for the locality of the identification of pro versus that of AGR. To the extent that this analysis succeeds in providing an coherent explication of the phenomenon of AGR-drop, the independence of the different parameters we have argued to be a part of the sanctioning of empty pronominals (whether pro or AGR) is reinforced.
4.3 Small Clauses

Consider finally pro in the subject position of a small clause. First of all, is there a pro-licenser for a pro in this position? It clearly can't be INFL since small clauses contain no INFL. However, the subject of a small clause is governed by V (cf. Stowell 1983 and discussion of government in chapter 2), which is a pro-licenser in Hausa, as we have already seen.

(127) V [a.c. [NP₁ pro] NP₂ ]

The closest c-commanding nominal element to pro in (127) is NP₂ and therefore, by Phi-feature Identification (55c), pro must be coindexed with NP₂. The result is that pro is bound in its governing category (whether this is the small clause or the S containing the small clause), in violation of Condition (B) of the Binding Theory. The prediction is that sentences having the configuration in (127) should be unacceptable. The facts, to my knowledge, bear out this prediction.

In dative small clauses (cf. chapter 2, section 4), a pronoun subject is "invariably a recapitulatory pronoun," as Parsons (n.d. b) puts it. This is true whether NP₁ is human or nonhuman.

(128) a. Litteafin nan, sai ka yi masa / *wa pro marufii
     book-the here only 2sm do-to-it / to cover
     'This book, you should make a cover for it'

b. Sarkii fa an yi masa / *wa pro saatas
     emir PRT indef do-to-him / to thief
     'As for the emir, he was robbed'

Similar facts appear to hold for causative (129) and predicative
small clauses, though results here should perhaps best be regarded as preliminary.

(129) a. Karen nan, masyuu sun maadaa shi/*pro kuuraa
dog-the here witches 3p change him hyena
'This dog, witches changed him into a hyena'

b. Gaa Ali a kwance. Soojoqii sun saa shi/*pro kuuka
here's A at lying-down soldiers 3p put him cry(N)
'There's Ali lying down. The soldiers made him cry'

(130) a. A: gaalibai sunaa karanta Kur’aanii
students 3p read Koran
'The students are reading the Koran'

B: Maalaamai sun zaabaa shi/*zaabaa pro littaafii na farkoo
teachers 3p choose it choose book of beginning
'The teachers chose it (to be) the first book'

b. Yaaroo, ana kiransa / *kiraa pro Haaruuna
boy indef call-of-him call H
'The boy, they call him Haruna'

These facts, which follow entirely from the pro-sanctioning conditions we have argued for here, may be taken as additional empirical support for these conditions.13

402
CHAPTER THREE NOTES

1 See, for example, Shopen 1972 and Grimshaw 1979, 1981, and references cited in these works.

2 Borer proposes in fact that the identification of AGR is always local so that identification of AGR is a consequence of the Binding Theory. AGR’s which need identification are taken to be [+anaphoric] and INFL is assumed to be the head of S’. This means that INFL (and hence AGR) is accessible to government from a higher clause and thus is bound in its governing category when coindexed by an element in the higher clause. It follows that control is limited to the subject position since only this position is coindexed with INFL, and only INFL (since it is the head of the clause) is accessible to government from the outside. This analysis allows for an account of the subject-object asymmetries seen in the Chinese empty pronoun facts by assuming that AGR may be anaphoric (rather than missing as Huang argues) in tensed sentences in Chinese (while in languages like English anaphoric AGR is limited to non-tensed sentences). Null objects can’t be identified by coindexation with INFL and thus null objects can only be variables bound by a zero topic. Object pro (in the absence of object agreement) are thus as impossible as object PROs, precisely because the two are collapsed and identification of pro is assumed to be the result of “control” or rich agreement.

Once again, this typology excludes object pro (in the absence of object agreement), yet this is exactly what occurs in Hausa. Borer’s analysis, without additional assumptions, is thus inadequate.

3 Some Hausa speakers consider these constructions to be colloquial (or less than standard), preferring instead pied-piping, as in (i)

(i) a. Cikin mëe ka saa gujiya a?
   inside-of what 2sm put peanuts
   ‘In what did you put the peanuts?’

b. A kan wane littääfii ka yi maganna?
   at top-of which book 2sm do speech
   ‘About which book did you talk?’

c. KarRashin mëe ka booye kudii a?
   under-of what 2sm hide money
   ‘Under what did you hide the money?’

4 The identifier cannot be the body-part noun kai itself for reasons that will be given below, in section 3.3.2.

403
5 The final form of the licensing principle for pro in Rizzi (1986) specifies that pro must be governed by a Case-assigning licensing head. This is to account for the fact that arbitrary null objects in Italian cannot occur in passive sentences (on the assumption that the passive verb does not assign Case, or at least not a Case compatible with the arb 8-role of the null object).

This assumption may be incompatible with the pro facts of Hausa. Pro may appear as complement to non-Case assigning gerunds and to nouns:

(i) Inaa soo pro
   Is like-VN
   I like (it)

   (cf. Inaa son litteefii)
   Is like-VN-of book
   I like the book

(ii) Mun yi maganaa a kai pro
    1p do talk at head
    We talked about (it)

    (cf. Mun yi maganaa a kansa)
    1p do talk at head-of-it
    We talked about it

It might be possible to assume that na, rather than being an inserted dummy preposition, is actually the realization of genitive Case assigned by nouns and certain gerunds, along the lines of Chomsky’s (1986b) analysis of of in English. If na is a genitive Case affix, though, it isn’t clear why it does not and cannot (cf. (iii) and (iv)) appear in (i) and (ii) if licensing requires a Case-marking governor. (Notice that na is a clitic on the preceding word, and not on the genitive NP, and thus (iii) and (iv) could not be excluded on the grounds that the clitic can’t attach to an empty category.)

(iii) *Inaa son pro

(iv) *Mun yi maganaa a kan pro

If na is treated as a preposition, on the other hand, and thus as a result of na-insertion, the ungrammaticality of (iii) and (iv) follows since prepositions may never govern pro in Hausa.

6 As Zribi-Hertz notes, some of the grammatical examples in (89) and (90) constitute long-standing problems for the Binding Theory. They are cases where a pronoun may be coreferential with the subject of the minimal clause containing the pronoun, in apparent violation of Condition (B). We will not go into the various proposals that have been made to accommodate these facts. What is at issue here is that we should expect empty pronominals to parallel overt pronominals in their Binding Theory effects—including exceptions to the latter; but, what is found is that this parallel seems to exist only where the pronominals are nonhuman.
7 The possibility of an embedded topic coreferential with the higher subject must be excluded for sentences like (ia), which might otherwise be allowed in this structure, as in (ib).

(i) a. *Le Coran dit qu'on devrait prier avec *e1
   'The Koran says that we should pray with (it)'

   b. Le Coran dit [qu'on devrait prier avec pro1]

Assuming that zero topics are possible only where overt ones are, this does not seem to be problematic, in light of (ii):

(ii) Le Coran dit que le Coran on devrait le respecter
   'The Koran says that the Koran, we should respect it'

   (cf. Le Coran dit qu'on devrait respecter le Coran
   'The Koran says that we should respect the Koran')

This is of course a possibility that has to be quite generally disallowed—for Hausa, Chinese, etc.. See Huang (1984:569) for a different answer.

8 Hagit Borer has pointed out to me that (102) may be ungrammatical for deeper reasons (as well) given the ungrammaticality of pro predicates in copular constructions in Hebrew and in Italian. It might be suggested, for example, that predicate nominals don’t bear a referential index and thus cannot enter into an identification relation.

9 Where the gender of the subject and predicate NPs is not the same, there appears to be some variation as to which gender actually surfaces on the copula. Schachter (1966) found the following generalization to be at work: the subject controls the gender marking when it is non-specific or generic (e.g. ShinRaasaa abinciiv mai deefii cee 'Rice(f) is(f) a good food(m)'/ Kaaee dabbaa mai hankali nee ‘A dog(m) is(m) a nice animal(f)’) and the predicate noun controls gender when the subject is specific (e.g. ‘Audu’s rice(f) is(m) good food(m)’ / Audu’s dog(m) is(f) a nice animal(f)’). I have found that at least some speakers simply choose the gender closest to the copula (i.e. that of the predicate) where there is a conflict. I am not sure how these facts should be interpreted.

10 See section 2.5.3 of chapter 4 on KE versus KEE, the alternate forms of the relative continuous.

11 Ross Schuh has brought to my attention an extremely interesting fact regarding AGR-drop. It is apparently acceptable when the predicate is head by an empty verb (cf. chapter 4) which has an
indirect object complement:

(i) 
\[ \text{tuhumaa [ 'yan sandaa (SU)KEE masa a cofois] } \]
suspicion policemen to-him at office 
'The police were accusing him at the office'

Assuming that indirect object clitics may be generated in V, as in (ii) 
(cf. section 4 of chapter 1 and section 4 of chapter 4), then this fact 
is expected under my analysis, since there is an overt category 
adjacent to INFL in the predicate—namely, V.

(ii) 
\[ \text{tuhumaa } [^{*}y^{*}an sanda [^{*}y^{*}KEE [\text{yp } \text{g-masa }] t_{1}] \text{ a coofis} } \]

Schuh also noted that the speaker whose judgement is reported found an initial sharp contrast between examples like (ii) and examples like (113b) where the verb is entirely without phonological content. 
(ii) was quite readily accepted, though it was found that examples like (113b) seemed to become better after repetition (though I have not found this to be true). Perhaps some speakers analyze CONT as a phono-
logical clitic only, allowing it to attach to whatever follows without regard to intervening empty categories.

12 The acceptability of a local overt topic with AGR-drop for some speakers who do not accept AGR-drop with a zero topic might be attri-
buted to the frequent semantic ambiguity between a left dislocated subject and an in situ subject, coupled with exposure to the looser 
"Grammar B" register.

13 What of NP₂ in small clauses? As the head of the small clause 
(Stowell 1981), NP₂ is governed by V, a pro-licenser in Hausa, but 
given our conclusion here, we should expect that it may never be pro 
(because of the same interaction of the Condition (B) of the Binding 
Theory with Phi-feature Identification that excludes subject pro in 
small clauses). In fact, it may. NP₂ of a dative small clause may be 
pro, as in (i), but assuming that in these structures the structural position 
contemporary to the incorporated dative preposition wa/ma is 
optional, and thus may appear, as in (ii), then NP₁ does not c-command 
NP₂ and thus could not be an identifier. Pro NP₂ is therefore free to 
take the topic as its identifier, as the interpretation requires:

(i) 
\[ \text{hootunan nan [g naa nuanaa wa [NP₁ Aisha] [NP₂ pro]]} \]
\text{photos here 1s show to A} 
'These pictures, I showed Aisha (them)'

(ii) 
\[ \text{hootunan nan [\text{yp nuanaa wa [s.c. [pp [pe] Aisha] [NP₂ pro]}] ]} \]

This analysis is of course not possible for predicative small 
clauses, which contain no preposition. Many examples of NP₂ pro 
in these types of small clauses are in fact unacceptable, as this would 
predict (though there may be other reasons for their unacceptability,
(iii) a. An dauki Abdul latiijoo
   indef take A gentleman
   'They took Abdul (to be) a gentleman'

   b. *Latiijoo, an dauki Abdul pro
      'The gentleman, they took Abdul (to be him)'

(iv) a. An maida Ali karee
   indef change A dog
   'They changed Ali (into) a dog'

   b. *Karee, an maida Ali pro
      'The dog, they changed Ali (into it)'

(v) a. An duubi Muusaa shaashaashaah
   indef look M fool
   'They look at Musa (as) a fool'

   b. Shaashaashaah, an duubi Muusaa pro
      'The fool, they looked at Musa (as him)'

It is striking that acceptable cases of NP2 pro tend to be sentences where NP1 is a pronoun, as in (vi), the only examples of NP2 zero anaphora of this type cited in Parsons (n.d. b):

(vi) a. Kome ya faru zan sannad da kai pro
   anything 3sm happen 1s inform you
   'Anything that happens I'll let you know'

   b. Wannan kaa fi ni pro
      this 2sm exceed me(Cl)
      'In this respect, you are superior to me'

Assuming with Sportiche (1982) that pronominal clitics govern a pro in their corresponding structural position, NP1 is not a possible identifier of NP2 because of the one-to-one condition on identification relations (i.e. NP1 pro and Cl are in an identification relation):

(vii) Wannan [ŋ kaa fi-ni [s.c. [NP1 pro] [NP2 pro]]]

   Alternatively, and to account for data where NP1 is not a clitic e.g. (viiia), we might take these structures to contain verbs with a single, rather than small clause, NP direct object. Most verbs which may take predicative small clause complements may also take simple non-small clause NP complements--cf. (viiib-c). Under this view, sentences like (viii), for example, would be 'circus...elephant' type left dislocation constructions--the topic not corresponding to any NP constituent in the comment sentence (cf. 'As for generative grammar, you'd better learn English first', etc.), and thus there would be no pro to be sanctioned at all.
(viii) a. Littaafii na farkoo, maalaamai sun zaaɓi Aur’aanii book of beginning teachers 3p choose Koran
‘As for the first book, the teachers selected the Koran’

b. Maalaamai sun zaaɓi Aur’aanii littaafii na farkoo
‘The teachers selected the Koran (as) the first book’

c. Aisha taɓ zaaɓi zanen da zaa ta sayaa
A 3sf choose cloth-the that 3sf buy
‘Aisha picked out the cloth that she’d going to buy’

These comments represent work still in progress; much more remains to be learned about these constructions.
CHAPTER FOUR: AUXILIARY VERB CONSTRUCTIONS IN HAUSA

1. Introduction

The bijective condition on lexical feature assignment relations requires there to be exactly one feature-assigner for each feature-bearer and exactly one feature-bearer for each feature-assigner. In the preceding chapter, certain configurations in Hausa containing a feature-assigner but lacking a (surface) feature-bearer were explored. It was suggested that in Hausa an empty category may function as a feature-bearer even in the absence of an A'-binder or local morphological agreement. These structures were argued to be analogous to left dislocation structures, the only difference being that the left dislocated element is null, a possibility in Hausa due to a positive setting of a Topic parameter. The one-to-one character of the lexical feature assignment is thus respected since there is a way of sanctioning null feature-bearers in these contexts. In other languages, such as English, the very same structure constitutes a genuine bijection violation.

Another way the bijection condition could be transgressed would be a situation where there is a feature-bearer, but either no corresponding feature-assigner or more than one feature-assigner. Various examples of this were discussed in chapter 2, where it was argued that the principle prohibiting these situations effectively subsumes the Case Filter, the 8-Criterion, and the Case Resistance Principle. As examples, consider the ungrammatical sentences in (1) and (2) below. (1a,b) are excluded as bijection violations since the
underlined feature-bearer in each sentence has no corresponding feature-assigner and thus lacks either a S-role or a Case-feature. (2a,b) also violate the one-to-one requirement on lexical feature assignment relations because the underlined feature-bearer in each sentence has more than one feature-assigner, with the result that, after feature assignment, the feature-bearer has more than one value for the same feature.

(1) a. *John seems that Mary left  (no S-role assigner)
    b. *John went France  (no Case-assigner)

(2) a. I want for John [ACC] INF left [NOM]  (>1 Case-assigner)
    b. They were talking about from the West [ACC] [ACC]  (>1 Case-assigner)

Certain bijection violations of this type, which are grammatical in Hausa, have received quite a lot of attention in the Chadic literature. I have used the term "auxiliary verb constructions" here to group them together since this designation is recurrent in the various existing descriptions and analyses. By auxiliary verb constructions, I am referring specifically, without intending to imply any particular analysis, to constructions containing a continuous INFL or one or more of various modal or aspectual verbs. The continuous INFL, or "person-aspect marker" to use the traditional name, in particular, has been the subject of considerable discussion due to the peculiarities of its syntactic distribution in comparison with other INFL forms. Modal and aspectual verbs share many of the properties of
the continuous INFL. Any treatment of the continuous aspect marker should extend naturally to modal and aspectual verb constructions. Both of them appear to violate lexical feature bijection in that they contain a feature-bearer with either no feature-assigner or more than one feature assigner. It will be shown in this chapter that these constructions are "well-behaved" with respect to the bijection condition on an analysis which uses only mechanisms already having independent motivation in the theory: empty categories, compositional 8-role assignment, and "dripping" and transfer of Case. This enquiry into "bijection deformation" leads to an exploration of the nature of non-nominal empty categories and, quite generally, provides a different angle on a much-discussed area of Hausa syntax.

2. The Continuous Aspect Marker

2.1 A Surface Bijective Relation Violation

As has been noted at various points in this study, the syntactic category INFL in Hausa corresponds to an independent word, rather than a bound morpheme. It consists of a tense-aspect marker and person, number, and gender marking. In most cases, these two markers are fused such that it is impossible to "split" the word into its pronominal and temporal parts. In chapter 3, we saw that the affirmative continuous and habitual INFLs do allow this splitting and that one of the consequences is that the Chadic-wide pattern of requiring a zero-pronominal marker with an overt lexical subject has been retained, as an option, in just these aspects.

Another particularity of the continuous INFL is that, unlike all other INFL forms, it is not restricted to occurring with a following
VP. It may also take an action noun, derived noun (=secondary verbal noun), locative, or stative NP complement, as in (3), or a PP complement indicating possession (of a thing or a quality), as in (4).

(3) a. Maalaamai sunaa aikii teachers 3pCONT work(N) 'The teachers are working'

e. Aishe bae taa nan A NEG3afCONT here 'Aishe isn't here'

b. Yaaraa sunaa waasaa children 3pCONT play(N) 'The children are playing'

f. Kunaa cikin daakii? 2pCONT inside-of room 'Are you in the room?'

c. Inaa keraatuu 1sCONT read-VN(sec) 'I'm reading/studying'

g. Munaa kwance 1pCONT lie down(stative) 'We're lying down'

d. Ali yanaa Kano A 3smCONT Kano 'Ali is in Kano'

(4) a. Maalaamai sunaa da kufii teachers 3pCONT with money 'The teacher have money'

b. Ali yanaa da Ribaa A 3smCONT with fatness 'Ali is fat'

c. Yaaraa baa su da hankallii children NEG3pCONT with sense 'The children have no sense'

(5) and (6) show that INFL forms other than the continuous may not occur with NP and PP complements, respectively.

(5) a. #Maalaamai sun aikii teachers 3pPERF work

b. #Yaaraa zaa su Kano children 3pFUT Kano

c. #Naa keraatuu 1sPERF read-VN(pr)
d. *Mukan kwance da raana
1pHAB lie down(stat) at noon

(6) a. *Maalaamai sun/zaa su da kudii
teachers 3pPERF/3pFUT with money

b. *Ali yaa da Ribaa
A 3amPERF with fatness

c. *Yaares ba suken da hankalii ba
children NEG3pHAB with sense NEG

It would appear from comparison of (3) and (4) with (5) and (6) that the continuous aspect INFL is a 8-role assigner, but other INFL forms are not. This hypothesis would explain why the continuous INFL may take NP and PP complements, but other INFL forms may not. With an NP complement, the 8-role would be assigned directly by the continuous INFL; with a PP complement, the 8-role would be assigned compositionally to [NP,PP].

Notice, however, that if the continuous INFL may take an NP-complement, then presumably it is a Case-assigner as well, since NPs must have Case. If the continuous INFL is a Case-assigner, though, then when it takes a PP complement, the prepositional objects will be in a position to receive two Case-features—one from the continuous INFL and one from the preposition da, by dripping and transfer—in violation of bijection. In other words, this would be a case of two feature-assigners for one feature-bearer.

The situation is further complicated by the fact that the continuous INFL may also take a VP complement, as in (7).

(7) a. Maalaamai sunaa [vp yin aikii]
teachers 3pCONT doing(Pr)—of work
'The teachers are working'
b. Yaaraa auna [yp yin waaaa]
   children 3pCONT doing(Pr) play
   'The children are playing'

c. Inaa [yp karanta littaafii]
   1aCONT reading(Pr) book
   'I'm reading a book'

d. Aisha baa taa [yp zuuu]
   A NEG3afCONT coming(Pr)

Recall that verbs appearing with a continuous aspect INFL must appear in their "verbal noun" form; this is marked in the glosses by "VN" or an English gerund form, plus the indication "(Pr)" or "(Sec)". It might therefore be argued that the VP complements of the continuous INFL are actually NP complements—that is, that verbal nouns are nouns. In chapter 1, section 5.3.3, where verbal nouns are discussed at some length, reasons were given for concluding that primary verbal nouns, which are like English gerunds, are verbs and not nouns, while secondary verbal nouns, which are analogous to English derived nominals, are nouns. I will summarize briefly these arguments here.¹

Secondary verbal nouns always require of-Insertion when followed by an NP complement, their form and meaning is idiosyncratic, their complement may be the logical subject or object, and they may appear in NP-only contexts (e.g. as complement to verbs like yi 'do/make' and saamu 'get'). The meaning of primary verbal nouns is entirely predictable: it is that of the root verb. Their form is generally predictable as well. They may not occur after yi or saamu. Their complements normally must be logical objects. While most primary verbal nouns are Case-assigners, some (non-waa primary verbal nouns) require of-Insertion with a complement, though these have all the other...
properties of primary verbal nouns. The facts just reviewed led us to conclude that primary verbal nouns are verbs and secondary verbal nouns are nouns, though it was noted that where there are gaps, a given verbal noun form may be used for both categories.

The primary verbal noun/secondary verbal noun distinction in Hausa is common in Chadic, and in languages in general. The arguments given for the categorial status of this distinction in Hausa are the same basic arguments that can be given for English "gerunds" versus "derived nominals" (cf. Chomsky 1970) or Bolanci (another West Chadic language) gerunds versus "deverbal nouns" (cf. Schuh 1983) or corresponding entities in any number of languages: the first are derived nouns, while the second are inflected verbs.

We may thus conclude that since the continuous INFL may take a primary verbal noun complement, it takes a VP (or gerund clause) complement. If the continuous INFL is a feature-assigner, then once again a situation arises in which a feature-bearer (here, the object of the primary verbal noun) has more than one feature-assigner (specifically, INFL and V). It might be suggested that a compositional θ-role is formed between continuous INFL and V. This would still leave open the proper analysis of an intransitive VP complement, as in (7d). What bears the θ-role assigned by the continuous INFL, if, as was argued in chapter 2, VPs cannot bear θ-roles? And, even if the θ-role one-to-one violation could be solved, the one-to-one requirement on the Case relation would still be violated.

To summarize, if the continuous INFL is not a feature-assigner,
then the one-to-one restriction on lexical feature assignment relations is violated in (3) because the NP feature-bearer has no corresponding feature-assigner. And, if the continuous INFL is a feature-assigner, the bijective correspondence is violated in (4) and (7) since there are two feature-assigners for one feature-bearer.

There has been much discussion in the Hausa literature about how to explain the fact that the continuous "person-aspect marker" may appear with nominal and prepositional complements. Many scholars have taken this fact to indicate that the continuous aspect marker is verbal in some way that other aspect markers are not (cf. Parsons (1960/61) and Kraft (1964) and references cited there). Parsons and Kraft propose on distributional grounds that nna, the continuous aspect marker, is a defective verb. Gregersen (1967) argues that the continuous aspect marker is like all other aspect markers—that is, it is not a verb of any type—and that surface bare NP complements are the result of deletion of an underlying verb.

Let us begin, then, our look into the continuous aspect marker by considering evidence for its structure position. Is nna located in VP or in INFL?

2.2 The Continuous Marker is in INFL, not VP

2.2.1 Introductory Remarks

One might suppose from the fact that the continuous aspect marker is most felicitously translated as 'be' in English and from the fact that it may take NP and PP complements that it is actually a main verb, the head of VP. An analysis along the lines of Esmonds' 1976
analysis of English progressive be, for example, could be imagined. 
Naa would be a main verb which could take a VP, NP, or PP complement.
The fact that a following VP must be in the verbal noun form could then 
be the consequence of a general rule requiring verbs not governed by 
INFL to appear in their nonfinite (verbal noun) form. In such a 
configuration, drawn in (8), naa, but not INFL governs the head of the 
complement VP:

(8)

\[
I' \\
\rightarrow \text{INFL} \\
\rightarrow \text{VP} \\
\rightarrow V \\
\rightarrow V \\
\rightarrow \ldots \text{naa karantaawaa} \ldots \\
\rightarrow \text{CONT read-VN(Pr)}
\]

Parsons' (1960/61) analysis of the "progressive construction", 
which is taken up in Kraft (1964), argues that naa is a verb, though 
this conclusion is arrived at solely by substitution analysis. The 
logic is as follows. A verb, Parsons suggests, is any word which 
occur immediately following a "subject pronoun" (="person-aspect 
marker"). Parsons further assumes that the element following naa in 
sentences such as those in (9) (which he gives with the pronominal 
element ya written separately from the continuous aspect marker naa) is 
not a verb. In other words, all verbal nouns are assumed to be nouns.

(9) a. Ya naa dafa naawaa b. Ya naa dafa shi 
3sm CONT cookVN(PR) meat 3sm CONT cookVN(Pr) it 
'He's cooking meat' 'He's cooking it'

Now, since pronominal forms such as ya are, by definition, confined to
use in front of a verb, and since verbal nouns, by assumption, are not
verbs, *naa* must be a verb.

Parsons concedes that *naa*, its relative equivalent *kee* (cf. chapter
1, section 6), and the negative form *baa*, are verbs "of a
special defective sort" (p. 5). Whereas verbs generally may appear
with the entire series of person-aspect forms, *naa* is confined to
appearing with a single set of such forms (which occurs only with *naa*).
And, the negative form of *naa* (*baa*) precedes instead of follows the
preverbal pronominal forms (e.g. 'Baa yaa dafa naasaa' 'He isn't
cooking meat').

Parsons suggests that these oddities are found with certain other
verbs: *jee* 'go' may take a following pronominal form (e.g. *jee-ka
'Go!'), *yaa* 'come' occurs only in this environment (e.g. *yaa-ka 'Come
here!''), and the future forms with *zaa* 'go' also appears to have a
following pronominal element (e.g. *Gidaa zaa ni 'I'm going home').
Newman and Schuh (1974) argue that these "postverbal pronominals" are
not evidence for postverbal subject agreement markers, but rather are
vestiges of a common Chadic pattern of a pronominal suffix on
intransitive verbs (the 'Intransitive Copy Pronoun') which agrees in
person, number, and gender with the subject and which co-occurs with
the pronominal element of AGR. The same explanation is given for the
TENSE + AGR order of the components of the future INFL (the opposite of
that found with the other INFL forms, to the extent that the TENSE and
AGR portions can be identified synchronically). We will return to the
future INFL below.

Notice also that Parsons' argumentation can be turned around.
Instead of starting by assuming that (primary) verbal nouns are not verbs, one could assume that they are verbs, an assumption that has been given motivation in this study. Now, using Parsons' definition, if preverbal pronominal forms occur only before verbs, then, since primary verbal nouns are verbs and \( va + nne \) precedes a primary verbal noun, \( va + nne \) must be a preverbal pronominal form \( vanaa \). Hence \( nna \) is not a verb, but part of the "person-aspect marker", like all other tense-aspect markers.

This line of argumentation would, however, entail that \( nna \) is a verb when it appears before a secondary verbal noun or an action noun, since these clearly are nouns. This reasoning would thus lead to the conclusion that \( nna \) is sometimes a verb and sometimes part of INFL. Strict reliance on syntagmatic comutation for syntactic analysis has well-known limitations and liabilities. Given the caveats noted by Parsons himself, the verbal status of \( nna \) seems rather unlikely. When other types of syntactic evidence are considered, it becomes clear that \( nna \) is under INFL, and not under VP. I turn now to these arguments.

2.2.2 Interpolation of Adverbial ("Modal") Particles

A constituent test we have used in other discussion in this thesis is that provided by the distribution of adverbial particles. These particles may be inserted most anywhere in a Hausa sentence and typically modify the word which immediately precedes them. Adverbial particles generally may not occur between a (syntactic) clitic and its host, however.

It was argued that INFL is not a clitic with respect to V because
modal particles may intervene between the two:

(10) a. Baa zai ma tafi ba
    NEG3amFUT PRT go NEG
    'He won't go'

b. Kun dei senii
    2pPERF PRT know
    'You know'

c. Naa koo goode
    1aPERF PRT thank
    'I thank you'

d. Baa naa kuma shan taabaa
    NEG1sCONT PRT drink tobacco
    'I don’t smoke either'

The clitic status of the indirect object marker wa/me 'to', illustrated in (11a-b), and the status of the tense and pronominal elements of INFL as a word, illustrated in (11c), can be shown by this same test:

(11) a. Bai faasaa (*maa) wa maatarsa ba
    NEG3am tell PRT to wife-his NEG
    'He didn’t tell his wife'

    a’. Bai faasaa wa (maa) maatarsa ba

    b. Bai nuunaa (*kuwa) wa Muuuaa hootunaa ba
    NEG3am show PRT to M photos NEG
    'He didn’t show M the pictures'

    b’. Bai nuunaa wa (kuwa) Muuuaa hootunaa ba

    c. Mu (*maa) ka tafi Kanoo
    1p REL PERF go K
    'We went to Kano'

    c’. Mu (maa) ka tafi Kanoo

Now, if the continuous aspect marker naa, or kee in the relative form, is in fact a verb, and thus appears under VP, we should expect that an adverbial particle may occur immediately before naa since adverbial particles may appear between INFL and VP, as was seen in (9). This prediction is not borne out, as Gregersen (1967) points out. Interpolation of an adverbial particle between the continuous marker naa and AGR is just as impossible as the "splitting" of INFL in (11), as (12) shows.
(12) a. Ta (*kuma/dai) naa zuwae
    3sf PRT PRT CONT coming(PR)
    'She's coming'

b. Kufii ta (*dai/maa) kee soo
    money 3sf PRT PRT REL CONT wanting
    'She wants MONEY'

c. Ya (*ma) naa tafiyyaa Kanoo³
    3aa PRT CONT going Kano
    'He's going to Kano'

Naa thus does not behave like a verb with respect to the interpolation of adverbial particles. Rather, it behaves as if it formed a syntactic word with AGR. These facts then argue against the continuous marker being generated under VP—either as a verb or as an auxiliary, and in favor of its being generated as the TENSE element of INFL.

2.2.3 Null Complement Anaphora

As was seen in chapter 3, Hausa makes quite general use of null complement anaphora—"general" in that in principle any transitive verb may have a null complement interpreted as anaphoric to a discourse or pragmatic (nonhuman) referent. Now, if the continuous aspect marker is a verb, the head of VP, we should expect it to be able to take a null complement, like any other verb. This, however, is impossible, whether the referent is a primary verbal noun, a secondary verbal noun, or an action noun, as the examples in (13) show.
(13) a. A: Kanaa son littaaʃiinaa?
   2a    like-VN(Pr) book-my
   'Do you like my book?'

   B: *Inaa ə soosai
      IsCONT really
      'I really do'

b. A: Yaaree sunaa karaatun  Rur‘aani? children 3pCONT read-VN(Sec) Koran
   'Are the children reading the Koran?'

   B: *Sunaa ə kaʃan-kaʃan
      3pCONT little-little
      'They are a little bit'

c. A: Aabu tanaa aiiii?
   A 3sfCONT work(N)
   'Is Abu working?'

   B: *Ii, tanaa ə
      yes 3sfCONT
      'Yes, she is'

d. A: Ali yanna waaʃaa?
   A 3amCONT song
   'Is Ali singing'

   B: *Aa’sae, baay ə yanzu
      no      NEG3amCONT now
      'No, he isn’t now'

Here again,  naa does not behave like a verb. It patterns instead like INFL. No INFL may take a zero complement. In other words, there is no Hausa equivalent to VP-deletion. This is seen in (14).

   A 3mPERF go K A  PRT 3sfPERF
   'Ali went to Kano. Abu did too'

   b. *Ali zai sayi dookii. Muusaa maay zai [yp e ]
   A 3mFUT buy horse M PRT 3mFUT
   'Ali is going to buy a horse. Musa is, too'
2.2.4 Left Dislocation of VP

Related to the ungrammaticality of nasi with a null complement is the fact that it cannot occur with the rest of the VP under TOPIC either. To see this, we consider first grammatical left dislocation of VP.

Like other maximal projections (NP, PP, S, etc.), VP may serve as the topic constituent in a left dislocation structure, as Jaggar (1978) points out. When it does, it must appear in its corresponding verbal noun form. Quite generally in Hausa, a verb may appear in its finite (= nonverbal noun) form only where governed by a non-continuous INFL at S-structure. A left dislocated VP must have either a copy of the topic verb or the pro-verb yi ‘do/make’ in the comment sentence. Examples, some of which are from Jaggar (op. cit.), are given in (15) - (17).

(15) a. *Fitaa, a, mukan fita wani lookacii go-out-VN PRT 1pHAB go-out some time
   'Going out, well, we go out sometimes'

b. Fitaa, a, mukan yi wani lookacii
do  
   'Going out, well, we do sometimes'

c. *Fitaa, a, mukan [yp e] wani lookacii
(16) a. [Rrubuutaa wa sarkii waasiiRaa] ai, zan rubuutaa goobe write-VN(Pr) to emir letter PRT is write tomorrow ‘Writing the emir a letter, I’ll write tomorrow’

b. [Rrubuutaa wa sarkii waasiiRaa] ai, zan yi goobe do ‘Writing the emir a letter, I’ll do tomorrow’

c. *[Rrubuutaa wa sarkii waasiiRaa] ai, zan [yp e] goobe

(17) a. Karanta waasiiRooRii sunaa karantaawaa yanzu read-VN(Pr) letters 3pCONT read-VN(Pr) now ‘Reading the letters, they’re reading now’

b. Karanta waasiiRooRii sunaa yii yanzu do-VN ‘Reading the letters they’re doing now’

c. *Karanta waasiiRooRii, sunaa [yp e] yanzu

The obligatoriness of the copy or pro-verb in the comment sentence, seen in the (c) examples just given, is another illustration of the fact that INFL may not govern a base-generated empty VP.

The copy V, if it is transitive, or the pro-verb yi of the "resumed VP" may also appear with a pronoun direct object, as in (18).

(18) a. Fitaa, ai, mukan [yp yii tu wani lookacii go-out-VN PRT 1pHAB do it some time ‘Going out, well, we do it sometimes’

b. Rubuutaa wa sarkii waasiiRaa, ai, zan [yi shi goobe write-VN(Pr) to emir letter(f) PRT 1sFUT do it(m) tomorrow ‘Writing a letter to the emir, well, I’ll do it tomorrow’

c. Rubuutaa wa sarkii waasiiRaa, ai, zan [yp rubuutaa ta goobe letter(f) write it(f) ‘Writing to the emir, well, I’ll write it tomorrow’

d. Karanta waasiiRooRii, sunaa [yp yinshi yanzu read-VN(Pr) letters 3pCONT do-VN-of-it now ‘Reading the letters, they’re doing it now’

e. Karanta waasiiRooRii, sunaa [yp karantaas su yanzu letters read them ‘Reading the letters, they’re reading them now’
Although the pronoun object of resumptive \(vi\) is always optional, the pronoun object of a copied \(V\) is optional only where the direct object of the \(VP\) topic is nonhuman, as in the examples given so far. When the direct object in the topic predicate is human, as in (19) and (20), the resumptive \(VP\) must contain a direct object pronoun referring to it just in case the resumptive verb is a copy of the verb in topic. To see this, compare the (a) and (b) examples, where the resumptive verb is a copy of the topic verb with (c), where the resumptive verb is \(vi\).

(19) a. Radar Aabu, ai, kullum yanaa radarta whisper-about-VN(Pr) A PRT always 3am whisper-about-her 'Whispering about Abu, he's always whispering about her'

b. *Radar Aabu, ai, kullum yanaa radaa e 'Whispering about Abu, he's always whispering'

c. Radar Aabu, ai, kullum yanaa yinshi / yii e 'Whispering about Abu, well, he's always doing (it)'

(20) a. Ganin sarkin, ai, mun gan shi da saahe see-VN emir PRT 1p see him at morning 'Seeing the emir, well, we saw him in the morning'

b. *Ganin sarkin, ai, mun ganii e da saahe 'Seeing the emir, well, we saw in the morning'

c. Ganin sarkin, ai, mun yii (shi) da saahe 'Seeing the emir, well, we did (it) in the morning'

This contrast in Hausa between human and nonhuman direct object gaps, by now familiar, is expected here. The direct object of the copied verb in the resumed VPs in (18), (19), and (20) may refer only to the direct object of the transitive verb in topic, as is shown by the number agreement between these. Since only nonhuman pronouns may be null (pro), the overt pronoun is obligatory when the referent in topic is human.

425
This is not true when the resummed verb is the pro-verb yi. The object pronoun of yi refers to the entire topic constituent, as is shown once again by the number marking of the pronoun: it may be singular even when the direct object of the topic is plural or where there is no direct object at all. The examples already given illustrate this. It might seem odd that a pronoun should have a VP as a referent. Recall however, that dislocated verbal nouns and any complements are structurally ambiguous between VPs and gerund clauses, which we have taken to be instances of the category S with a null INFL (and, as a consequence, a PRO subject). Pronouns, even though they may be NPs categorically, as is the case with the direct object of yi, are not restricted to referring to NPs. They may refer to clauses as well, a fact that the use of English it amply testifies to. I assume therefore that the predicate topic in Hausa sentences with resumptive yi is actually a (gerund-) clause. It follows then that resumptive yi may appear with a pro object since clauses are certainly nonhuman. The difference in behavior between the resumptive yi and the resumptive copy verb in predicate left dislocation is that while the object of yi may refer to a gerund clause, just as it may refer to an S' in a question such as 'What did you do?', this is not possible for verbs such as 'whisper about' or 'see'. A predicate topic with a resumptive VP containing a copied verb, thus, can only be a VP.

Let us return now to the question of the status of the continuous aspect marker. I have shown that VPs (which may be contained in a gerund clause) may be left dislocated. Now, if the continuous marker is part of VP, we should expect it to be able to occur with the rest of
the VP under the topic node of a left dislocation structure. This is impossible, as (21) shows, and we see once again that nna behaves as if it were under INFL and not under VP.

(21) a. *Naa karanta waaasiiRooRii, ai, su nna (su) yanzu CONT read-VN(Pr) letters PRT 3p CONT them now 'Reading letters, well, they are (them) now'

b. *Naa karanta waaasiiRooRii, ai, su yi (shi) yanzu 3p do it 'Reading letters, well, they do (it) now'

As expected, tense elements and other INFL elements may not be left dislocated with VP. Thus, just as (21) is out, so is (22).

(22) a. *Ken fitaa, ai mu (kan) fitaa/yi (ta) wani lookacii HAB go-out-VN PRT ip HAB go-out/do it some time

b. *Sukan fitaa, ai, yaarac sukan yi (ta) wani lookacii 3pHAB go-out-VN PRT children 3pHAB do it some time

2.2.5 Focus-fronting of VP

While left dislocation of VP tends to be rather marginal stylistically speaking, focalization of VP is quite common and natural in Hausa. Like VP left dislocation, VP-focus shows that the continuous aspect marker is not part of VP. Before illustrating this final argument for the INFL status of the continuous marker, I will present the facts of VP focus-fronting together with an analysis which accounts for differences between it and similar constructions in other languages.

I have argued in previous chapters that focus-fronting is an instance of wh-movement of a maximal projection to a pre-sentential position--COMP, or perhaps [SPEC,CP] as in Chomsky (1986a). VP focus
is parallel to focus-fronting of other constituents. Morphologically, continuous and perfective INFLs of the clause which is local to the focussed VP must occur in the relative form (cf. section 6.3 of chapter 1) and focussed VP constructions may display apparent unbounded dependencies between the fronted VP and its logical position in S, in which case "intermediate" INFLs optionally occur in the relative form.

(23) a. Gyaara mootaatsa SUKA yi repair-VN(Vr) car-my 3pREL PERF do 'Repairing my car they did'

b. Cin abincii da saurii AKA cee SUN / SUKA yi eat-VN food with speed indef say 3pPERF/3pREL do REL PERF Shii ya saa sukee rashin laafiya. it 3sa make 3p lack-of health 'Eating food in a hurry one said they did. This is why they are sick'

c. Karanta Rur’aanii YA cee maalaaamii SUNAA /SUKEE soo mu yi read-VN Koran 3sa say imam 3pCONT 3pREL want 1p do REL SUB 'Reading the Koran he said the imam want us to do'

In the examples in (23) both the verb and its direct object (and adverbial adjuncts) are focussed—'repairing my car', 'eating food in a hurry', and 'reading the Koran'. It is not possible to focus a verb without its direct object:

(24) a. Karanta littaafii suka yi read-VN(Vr) book 3pREL do 'Reading the book they did'

b. *Karanta suka yi littaafii read-VN(Vr) 3pREL do book 'Reading they did the book'

(25) a. Aaraa mana littaafii na yi lend-VN(Vr) to-him book 1sREL do 'Lending him a book I did'
b. *Arawaa na yi maa (ga/də) littaafii
   lend-VN(Pr) 2sREL do to-him (at/with) book
   'Lending I did him with a book'

Quite generally, only maximal projections may be fronted to COMP in 
Hausa. It seems to be accurate to say that the category V is no 
different. Only elements for which it is plausible to argue that they 
are subject to extrapolation out of VP may be left behind when V is 
fronted. S' and PP complements are examples:

(26) a. Ceewaa na yi [g' su daai na daaunaa ]
   say-VN ls do 3p stop bother-VN-of-me
   'I did say they should stop bothering me'

b. Soo akkee yiii [g' a saami dalilin da ya sāa ...]
   want-VN indef do indef get reason-the that 3am make
   'Wanting one does to find out why..'

c. Kai kaayaa sukeee yi wa Muusa
   take-VN loads 3p do to Musa
   'Taking the loads they are doing to Musa'

d. Aron littaafii na yi maa
   lend-VN book ls do to-him
   'Lending a book I did to him'

As the examples given thus far illustrate, the focussed VP is 
resumed in S by the pro-verb yi, as in left dislocation of VP. 
However, VP focus-fronting does not have the option found with left 
dislocation of repeating the pre-sentential V in S. Another 
significant difference between the two is that the "resumptive verb" yi 
in focus constructions may not take a pronominal direct object, as it 
may with VP left dislocation. These two differences are illustrated by 
the sentences in (27), which can be compared with the VP left 
dislocation examples of the preceding subsection.

429
(27) a. Karanta Rur’aanii auka yi/*karanta (*shi) da saane
read-VN Koran 3p do read it at morning
‘Reading the Koran they did/read (it) in the morning’

b. Aaraa maa liitaali na yi/*araa (*shi)
lend-VN to-him book 1s do/ lend it
‘Lending him a book I did/lent (it)’

c. Tafiyya Kanoo muka yi/*tafi (*shi)
go-VN K 1p do go it
‘Going to Kano we did/went (it)’

d. Cin abinci da saurii auka yi/*ci (*shi)
eat-VN food with haste 3p do/ eat it
‘Eating food in a hurry they did/ate (it)’

These facts can be readily accommodated under a movement analysis of
VP-focus, as I have suggested elsewhere (see Tuller, 1982). In this
view, yi is taken to be the spell-out of the trace of VP, just as
resumptive pronoun objects of prepositions are the spell-outs of the
trace of NP. Both are required by the ECP. I follow here Koopman
(1984) in assuming the verbal traces are subject to the ECP just as
nominal traces are. Now, if yi is the spell-out of the trace of VP,
and not V, then the impossibility of a resumptive direct object in the
VP of S in VP focus constructions follows. After movement of the VP to
COMP, all that remains of VP in S is a trace— an empty VP. Assuming
that traces may not have internal structure (i.e., that they are not
“layered”), then the only element that may be resumed, by spell-out, is
VP, and not any of its subparts. A sample derivation, of (27b), is
given in (28).
(28) VP Focus-Fronting

D-structure: [g' COMP [g Naa [yp araา masa littaααfii]]]

After 'Move-α': [g' [COMP [yp araа masa litt.]] [g na [yp t ]]]

After Spell-out: [g' [COMP [yp araа masa litt.]] [g na [yp yi]]]

I am suggesting that spell-out of the trace of VP is obligatory because of the ECP, on analogy with other obligatory resumptive elements in Hausa. Resumptive pronouns are required in Hausa in two places: where a gap would result in an ECP violation and where a gap would result in a subjacency violation. Since resumptive yi is obligatory even with "short" movement (i.e., where the local COMP contains either the moved element itself or its trace, in the case of successive cyclic movement, and, thus, in constructions which obey subjacency), it seems logical to conclude that yi is required because of the ECP. If this is correct, then we should expect that VP-fronting must obey subjacency, if subjacency is a condition on movement, as suggested in our discussion of 'Move-α' in chapter 1, based on the behavior of S-structure (= ECP-required) resumptive pronouns. That is, ECP-required resumptive VPs should behave like ECP-required resumptive NPs with respect to bounding theory. They do, as comparison of (29) with (30) reveals. Both (29b) and (30b) are ungrammatical, showing that both NP focus-fronting and VP focus-fronting obey the wh-island constraint, despite the presence of a resumptive pronoun. (29c) and (30c) show that left dislocation of VP parallels left dislocation of other constituents in being oblivious to subjacency, as expected, since left dislocation is not a result of movement.

431
   ‘Reading the Koran Ali said the children do in the morning’

   b. *Keranta Rur‘eemii Ali YA cee waa yakee yii
      ‘Reading the Koran Ali said who does’

   c. Keranta Rur‘eemii, ai, Ali YAA san waa yakee yii
      ‘Reading the Koran, well, Ali knows who does’

(30) a. Dan sarki Ali YA cee Aaub ta rubuuta littaafii tare da shii
   ‘The emir’s son Ali said that Abu wrote a book with him’

   b. *Dan sarki Ali YA san waa ya rubuuta littaafii tare da shii
      ‘The emir’s son Ali knows who wrote a book with him’

   c. Dan sarki, ai, Ali YAA san waa ya rubuuta littaafii tare da
      shii
      ‘The emir’s son, well, Ali knows who wrote a book with him’

I have shown that resumptive VPs parallel in all respects ECP resumptive pronouns and that the VP-movement hypothesis accounts for both this property of VP focus-fronting and the absence of a resumptive direct object within the VP of S in these constructions (versus its presence in left dislocation structures). The question remains as to why the resumptive verb in focus-fronting is exclusively vi and never a copy of the focused verb. We might again seek an explanation in the hypothesis that VP-focus is wh-movement, whereas left dislocated VPs, which may have a copy resumptive V, are base-generated in topic. A possible account might be formulated along the following lines: the VP-trace spell-out rule spells out the minimal verb features—+[V],-N—which correspond to vi, the verb ‘do’, in Hausa. In a left dislocation construction, on the other hand, the resumptive verb is not the spell-out of a trace, but, rather, a base-generated verb. The only restriction on it is that it must be able to resume the verb in the dislocated VP—either a copy of that V or the “dummy” verb vi
satisfies this requirement. Whereas the left dislocation structures have a resumptive verb--either *vi or a copy of V, focus constructions contain a resumptive verb phrase, which can only be *vi.

This account of the difference between resumptive verbs in left dislocation and focus constructions in Hausa seems to fit in nicely with the facts of the predicate cleft construction in Vata and the analysis given to it by Koopman (1984). Vata also has focus-fronting of the predicate, but, in contrast with Hausa, it is only the verb which may front. Koopman suggests that this restriction may follow from the manner in which the projection level of $\alpha$ in the rule 'Move-$\alpha$' is set. If the projection level of movement rules is assumed to be set category by category, Koopman argues, then it follows that wh-movement moves V, rather than VP, since Vata has NP-type movement of V (V-Preposing) as well. Hausa has no V-Preposing rule and thus the child learning Hausa has no evidence for restricting the projection level for movement of the category [+V,-N] to V. Returning now to the difference between Vata and Hausa with respect to resumptive verbs in predicate focus constructions, it seems reasonable to suggest that this difference is linked to the other difference. That is, suppose that pro-verbs, like pronouns, can only be maximal projections. This would entail that the spell-out of the trace of V may only be a copy of V, whereas the spell-out of a VP trace is 'do', a pro-verb. The difference between Vata and Hausa is accounted for.

Koopman (1984:172) in her discussion of resumptive verbs, expresses scepticism about the possibility of 'do' ever functioning as a pro-verb, locally bound by a preposed verb. If there are no pro-
verba, she reasons, than Vata uses a copy of the focussed verb simply because this is the only available alternative. Koopman argues that Dutch examples such as those given below, which might appear to contain a pro-verb ‘do’, in fact are formed by base-generation of an infinitival complement in topic which is related to the object of a main verb ‘do’ (both of which have moved to a pre-sentential position):

\[(31)\]

a. \( \text{[TOP [s' veal eten]] [s' dat}_K \text{ doet}_K \text{ [hij t}_K \text{ niet meer t}_I]] \) 
   a lot eat that does he no longer 
   ‘Eat a lot, he doesn’t any longer’

b. \( \text{[TOP[\text{s'ee naa lekker uitrusten]] [s' doet}_K \text{ [hij e}_K \text{ niet t}_I]} \) 
   once nice rest that does he not 
   ‘Take a nice rest, he doesn’t’

I have argued that Hausa does have a pro-verb ‘do’, namely yi. Is Hausa VP-focus really any different than Dutch (31), in the relevant respects? Yes. One crucial difference between Dutch (31) and corresponding structures in Hausa, exemplified again in (32), is that there is no \text{dat} and can be none, either, in Hausa.

\[(32)\]

a. Cim abincii da yawa yakee yii / *yinshi yanzu 
   eat-VN food a lot 3sm do-VN do-VN-of-it now 
   ‘Eating a lot, he’ s doing now’

b. Huutaawaa goosai yakee yii / *yinshi 
   rest-VN really 3sm do do-VN-of-it 
   ‘Really resting, he’s doing’

The motivation, then, for a base-generated topic in Dutch does not exist for Hausa VP focus constructions. And, as we have already seen, there is evidence against both base-generation of focussed elements in topic position and ‘do’ as a main verb in these constructions.

Notice, however, that our analysis is not really incompatible with
Koopman's conclusions. Her suggestion is that 'do' cannot be bound by a fronted verb. This is not contradicted by any Hausa facts (since verbs are never fronted in Hausa) or by my analysis of spelling out of verbal traces (since I have proposed that 'do' can only be the spell-out of VP). My analysis of 'do' as a true pro-verb, representing VP just as pronouns represent NPs, thus not only accounts for the distinction in resumptive verbs within Hausa, between VP left dislocation and VP focus-fronting, it also accounts for the difference between predicate focus resumptive verbs in Hausa and Vata in a way that is fully compatible with the conclusions reached by Koopman about predicate focus in Vata and resumptive verbs in general.

I have argued that VP-fronting requires a resumptive pro-verb because of the ECP, on the basis of the parallelism with fronting of NPs from non-properly governed positions. Both obey subjacency even though the extraction site contains a pro-element rather than a trace. If these pro-elements are spell-outs of traces, required in order to satisfy the ECP, and subjacency is a condition on 'Move-\(\alpha\)', then the existing array of facts is accounted for. It has not been made clear, however, why a VP-trace is not properly governed.

As was seen in chapter 1, section 7, under the classical formulation of proper government (cf. Chomsky, 1981), an empty category must be either lexically governed or antecedent governed in order to satisfy the ECP. That is, an ec must have either a lexical (\(X^0\)) governor or a coindexed antecedent. Subsequent work by a number of scholars (see references cited in chapter 1, section 7.5), suggests that in fact both requirements must be met in order for an empty
category to be sanctioned. The VP-fronting facts of Hausa give further support to this view.

Koopman (op. cit.) argues that a resumptive pro-verb is required in Vata predicate cleft constructions because empty verbal categories are subject to the ECP and those left by predicate clefting are neither lexically governed nor antecedent governed. Lexical government does not obtain since the empty V is governed only by INFL, which is not a lexical category. Antecedent government does not obtain either, it is argued, because proposed wh-phrases are never antecedent governors in Vata. This is suggested to be a consequence of the fact that fronted elements are not in COMP, which is clause final in Vata. Since only COMP is the head of S' and only heads can govern, it follows that a fronted wh-phrase may not antecedent govern its trace in S. (See Koopman (op. cit.) for details and Koopman and Sportiche, 1986, for more recent discussion.)

In Hausa, though, complementizers and wh-phrases both occur in clause-initial position. There is therefore every reason to believe COMP is clause-initial and therefore that fronted wh-phrases may antecedent govern their traces. Assuming this to be correct, the trace of VP is antecedent governed by the fronted VP in COMP, just as the trace of an NP subject is antecedent governed by its antecedent in COMP. Despite this, the trace of VP must be spelled-out as a pro-element, exactly as the trace of extraction from non-properly governed positions such as object of a preposition or object of a noun. Apparently, VP is not a properly governed position either. Since the trace of VP is antecedent governed, it must be the lack of a lexical
governor that is responsible for the ECP violation, lending support to the hypothesis that empty categories must be both antecedent governed and lexically governed in order for the ECP to be satisfied. In Vata, the trace of V has neither a lexical governor nor an antecedent governor and thus must be a resumptive verb. In Hausa, the trace of VP requires a resumptive pro-verb because, although it is antecedent governed, it has no lexical governor.

The pro-verb yi is normally obligatory when VP is focussed. There is one context, however, where the yi corresponding to a focussed VP is optional: when the sentence is in the continuous.

(33) a. [Karanta Fur’aani] yaaras suke (yi)
   read-VN Koran children 3pCONT do-VN
   ‘Reading the Koran, the children are doing’

b. [Cin abincii da sauri] suke (yi)
   eat-VN food in haste 3pCONT do-VN
   ‘Eating food in a hurry, they are doing’

c. [Kai wa Muusa asayya] suke (yi)
   take-VN to M loads 3p do-VN
   ‘Taking Musa the loads, they are doing’

Given the discussion above, it would appear as though the continuous aspect marker "counta" as a lexical governor for the ECP. This seems like it should be an argument in favor of the verbal status of the continuous aspect marker since verbs are proper governors, but INFL generally is not. On the other hand, VP-focussing also provides further evidence against this conclusion. We turn to this evidence here and return to the proper governor status of the continuous aspect marker in due time.

Predicate cleft in Hausa, we have seen, consists of fronting of VP
to COMP. If the continuous aspect marker is a verb, generated in VP, then we expect it to be able to move to COMP with the rest of VP. This is not possible. To see this, compare the ungrammatical (34), where the continuous marker naa is fronted, with the grammatical (33) above, where the continuous marker (in its relative form, kee, because of the wh-movement of VP) is "left behind".

(34)  a. *[Naa karanta Rur’aani] yaaraa su (yii)
    b. *[Naa cin abincii da asurii] su (yii)
    c. *[Naa kai wa Muusa kaayaa] su (yii)

Before summarizing the evidence bearing on the structural position of the continuous aspect marker, I would like to reconsider briefly the status of focus-fronting and left dislocation of VP in Hausa--this time with respect to a similar construction in Breton.

2.2.6 Hausa VP Focus-Fronting and Left Dislocation versus Breton Predicate Topicalization

Arguments about the structure of the continuous clause have been given which are based on a particular analysis of predicate cleft and predicate left dislocation constructions. The properties of these constructions will also be used in establishing the status of auxiliary verbs in section 3 of this chapter. It is important, therefore, that the reasons for adopting this specific analysis be made clear, particularly in light of the existence of very different analyses in the literature for what appear to be rather similar constructions in other languages. In section 2.2.5, differences between VP focus-fronting in Hausa and similar processes in Vata and in Dutch were

438
discussed and analyzed. Here, I would like to consider aspects of topicalization in Breton, as described and analyzed in Anderson (1981).

Anderson explicitly argues against a movement analysis for topicalization in Breton—whether this be wh-movement of a constituent directly to COMP or base-generation of a constituent in a topic position, which is to be construed with a null operator moved to COMP from a clausal position. Since predicates may also be topicalized in Breton, and, when they are, they also must occur in a "verbal noun" form, it is worth considering why the corresponding structure in Hausa would not be subject to the same arguments Anderson presents.

Anderson describes "topicalization" in Breton as being a conflation of semantic topicalization and semantic focus; the topic may correspond either to "old information" or to "comment" material. A verbal topic, he argues, is actually an NP. Both the form of the preverbal particle (a with a preceding NP and e elsewhere) and the form of the verb 'be' (always zo when preceded by a topic NP) indicate this. Moreover, a verb in topic must be in the verbal noun form, unless it is a participle. Verbal nouns, it is shown, have the internal structure of NPs and may appear everywhere other NPs may.

Having established that verbal topics are NPs, Anderson then presents arguments that topicalization is not the result of movement. Among these, are arguments that a verbal topic would have no possible clausal source if movement were assumed.5

In Breton, a verb and its complement may serve as topic, as in Hausa. A verb may also be topicalized without its complement. (35a) shows a topicalized V plus NP complement and (35b) the same sentence
with a topicalized verb only. This and other Breton examples are taken
from Anderson (op. cit.).

(35) a. [Debrin krampouezh] a raio Yannig e Kemper hiziv
eat crepes prv will-do Johnny in Quimper today
'Johnny will eat crepes in Quimper today'

b. [Debrin] a raio Yannig krampouezh e Kemper hiziv
'Johnny will eat crepes in Quimper today'

If the topicalized verbal nouns in (35) were moved from the
position of object of 'do' in S, several problems would result,
Anderson argues. In order to move the verbal noun alone, as in (35b),
one would have to assume either that 'do' has two direct objects
('eating' and 'crépes'), a structure never found elsewhere in Breton,
or that 'do' has a single verbal noun direct object and that the head
may be moved without its complement structure, a type of movement which
is argued in the literature not to be legitimate.

A problem with a movement analysis of even the entire verbal noun
phrase, as in (35a), is that this phrase may not have a corresponding
resumptive pronoun as object of 'do', though topicalized direct objects
may. (Direct object pronouns in Breton always appear as "conjugated
prepositions".) Compare (36a) with (36b).

(36) a. *Lenn cul levr brezhoneg a ra Yannig anezhañ bemdez
reada a book Breton prv does Johnny of-it everyday
'Johnny reads a Breton book everyday'

b. Ma levr en-eus kavet Yann (anezhañ)'
my book he-has found John of-it
'John has found my book'

Finally, if topics arise by movement and thus verbal noun topics
appear as direct objects of 'do' in D-structure, an interpretive
problem arises. The problem is that other 'do' plus verbal noun constructions exist, but with another (causative) meaning.

(37) a. Me a raio sevel eun ti
    I prt I-will-do building a house
    'I'm going to have a house built'

   b. Sevel eun ti a rin
      building a house prt I-will
      'I'm going to build a house'

How are these two different interpretations of 'do' plus verbal noun, which involve distinct thematic structures, to be distinguished if one is derived from the other?

On the basis of these arguments, Anderson concludes that Breton topicalization is not a result of movement (and does not therefore constitute an argument for a VP constituent in Breton, a surface VSO language). He supposes instead that topics are base-generated in COMP from where they bind an empty category in S. A verbal noun in topic position binds an empty verb which is filled in the phonology by application of do-Insertion, analogous to it or there-Insertion.

Let us consider now again the constructions in Hausa in which verbal elements appear sentence initially in light of the above analysis of Breton. First of all, verbal nouns in Hausa do not seem to be entirely parallel to verbal nouns in Breton. In Hausa, recall, there are two types of verbal nouns: secondary verbal nouns, which clearly are nouns and seem to correspond exactly to verbal nouns in Breton, and primary verbal nouns, which I have argued are verbs on the basis of their distributional difference with nouns and secondary verbal nouns (among things), and which thus do not correspond to Breton
verbal nouns. There is therefore no reason to assume that topicalized or focussed primary verbal noun phrases correspond to the direct object of the verb 'do'—this is in fact the context where primary verbal nouns may not occur. Compare Breton (37) with Hausa (38).

(38) a. *Zan yi giina gidaa
    1sFUT do building(Pr) house

    b. Giina gidaa zan yi
    building(Pr) house 1sFUT do
    'Building a house I will do'

Moreover, Breton topicalization does not seem to have a real counterpart in Hausa. Hausa has two distinct constructions in which constituents appear sentence initially: the construction I am referring to as left dislocation and that referred to as focalization, focus-fronting, or topicalization. Left dislocated constituents are always true topics—old information; focussed constituents have either presentational or emphatic focus. While focus-fronting displays all the properties of movement (relative aspect marking on INFL, wh-island effects, ungrammaticality of resumptive pronouns in properly governed positions, etc.), left dislocation displays none of these. It was further argued, on the basis of intonation facts, that focussed constituents occur in the same position as questioned constituents—in COMP. That is, focussed constituents are moved to COMP, like wh-phrases, rather than base-generated in topic position and related to a null operator that has been moved to COMP.

Given the above, it can be easily seen that the arguments given by Anderson against a movement analysis of Breton topicalization do not
hold for Hausa topicalization (=focus-fronting), the construction I have argued to be derived by wh-movement. The problem of the ungrammaticality of a resumptive pronoun object of 'do' in S corresponding to the topicalized verbal constituent and the other problems associated with generating the verbal constituent as the D-structure object of 'do' do not arise in Hausa since the verbal constituent is a VP and thus can be generated as the underlying VP, with vi being the spell-out of its trace, as in (28) above. Anderson's other argument against movement is the fact the X0, as well as Xmax, may move. Since only VP, and never V alone, may be focussed in Hausa, this argument cannot be applied to Hausa either.

In conclusion, whatever the proper analysis of Breton topicalization may be, the evidence against topicalization as 'Move-\alpha' in Breton does not apply to Hausa. Thus, given all the evidence in favor of Hausa focus-fronting as wh-movement presented in 2.2.5, we will adopt the analysis given there.

2.2.7 Summary

I have argued in this section that the continuous marker nwa (keen when in the relative form) is in INFL (at least at S-structure) and not in VP. The facts of null complement anaphora, predicate left dislocation, and predicate focus-fronting constitute evidence that the continuous marker is not V, the head of VP, and thus imply that it is instead in INFL. The distribution of adverbial particles indicates that the continuous marker must at the very least be a clitic to the AGR element of INFL.

A third logical possibility can also be ruled out. It might be
suggested that the evidence presented so far would still allow for an analysis in which the continuous marker is some sort of auxiliary verb generated in VP, but appearing in INFL at S-structure, as in (39c).

(39) a. Naa = V  
    b. Naa = TENSE  
    c. Naa moves from V to I

    I'  
     /   \    /   \    /   \  
    I    VP  I    VP  I-naa_i  VP
    \  /    \  /    \  /    \  
   V  AGR  TNS  V  ti  ...
   ... naa ...  ... naa ...

On version of hypothesis (39c) would be to consider naa to be a clitic form. This hypothesis encounters a problem when confronted with "AGR-drop". As was seen in chapter 3, the agreement part of INFL may be null under certain circumstances with a continuous or habitual aspect marker. The problem for a movement-to-INFL analysis of the continuous marker is that where AGR is null, this would mean cliticization to an empty category. There is reason to believe that this is not possible any more than affix-hopping onto a null verb is. Bound morphemes such as affixes or clitics, by definition, must occur attached to some other constituent at surface structure. That is, in order to be bound, there must be something with phonological realization for them to be bound to; they cannot stand alone. Presumably, these elements must be marked in some way as being "affixal" and there must be some principle ensuring that they appear bound at surface structure. Lasnik (1981:162) proposes (40) as a morphological principle.
A morphologically realized affix must be realized as a syntactic
dependent at surface structure.

I will assume here that "syntactic dependent" means "attached to a
phonologically realized constituent". (40), then, would exclude
cliticization of the continuous marker from its VP D-structure position
to INFL when AGR is null. Yet, the continuous marker would have to be
marked as being affix-like in order to derive the facts involving
interpolation of adverbial particles, VP focus-fronting, etc. In
other words, (40) would be violated whether or not cliticization
applies, and there would thus be no way of generating sentences in the
continuous with null agreement.

This problem can be gotten around, however, by simply assuming
that it is AGR which is a clitic on nna, rather than the other way
around. That is, we might take movement of nna to INFL to be parallel
to proposed account of have/be in English (cf. Akmajian et al (1979)
and references cited there). I do not believe that a verb raising
account of nna is adequate for several reasons. The analysis of be and
have in English as being generated in VP and raised to INFL (when INFL
contains no auxiliary element) is designed to account for both the
verbal and auxiliary properties of these words. But, the verbal
properties of nna are much more restricted than those of be. Akmajian
et al note that auxiliary be may occur in imperatives, an arguments for
its being generated in VP (at some level):

(41) a. Be studying your Spanish when I get home!
b. Be gone from this room by the time I get back!

Hausa also has what appears to be an INFL-less imperative form (the
verb has a special tone pattern for the imperative):

(42) Kàràn tà lìttàsàfìn nàñ!
read book—the here
‘Read this book’

(cf. Yàa kàràn tà lìttàsàfìn nàñ ‘He read this book’)

Aspectual auxiliary verbs in Hausa may appear in the imperative form:

(43) a. Fàrè kàràn tà lìttàsàfìn nàñ
‘Begin reading this book’

b. Ràgè rubòútà mìni wàssìiRòòkíi
‘Don’t write me letters so much’

We might therefore expect nàa to occur in imperatives if it originates in VP as English be. But, it cannot:

(44) a. *Nàa kàràn tà sùr’aanìi!
‘Be reading the Koran’

b. *Nàa dafa tuwòo!
‘Be fixing the food’

There is another crucial difference between English be (and have) and Hausa nàa. Be and have in their auxiliary use exhibit the same full inflectional paradigm as when used as a main verb. In Hausa, nàa is entirely lacking the full distributional possibilities of verbs. As we have already mentioned, it may occur in a single tense-aspect only—the continuous. No examples like (45) are grammatical.

(45) a. *Nàa soo in nàa Kànòò
 is want isSUB K
‘I want to be in Kano’
If *naa* were like *be* in being generated in the VP and moved to INFL when INFL does not already contain an auxiliary, then the ungrammaticality of (45) is unaccounted for. If, as I have argued here, *naa* is generated in INFL under TENSE, as the continuous aspect marker parallel to other aspect markers, its non-occurrence with other tenses follows automatically.

I conclude that although the continuous marker seems to share certain verbal properties with *be*, (namely, it seems to be a proper governor, it may apparently take NP and PP complements, it may not take a finite verb complement), it differs significantly in that it does not occur with the full range of tense/aspect, it never appears in contexts which single out verbs (imperatives, VP dislocation, VP focalization, etc.), and it does not have any verbal morphology (no primary or secondary verbal noun--cf. English 'being', 'has-been', etc.). There is thus not only no evidence in favor of *naa* being generated as a verb or an auxiliary verb under VP, there is strong evidence against it and in favor of its being generated as the tense element, under INFL.6

Having established INFL as the structural position of the continuous aspect marker, we return now to its verbal properties, which were the impetus for including it in our study. I begin by considering the status of surface NP complements to the continuous INFL, and, in particular, their alternation with [vin 'do' + NP] complements.
2.3 CONT + (yin) + NP

2.3.1 NP Complement?

As noted at the outset of this chapter, the continuous INFL may be followed by an NP complement. Additional examples are given here in (46), and consider also the examples in (47), taken from Magana Jarr Ge (Ismail, 1980), the Hausa "1001 Nights".

(46) a. Ali yanaa aikii
   A 3smCONT work-N
   'Ali is working'

b. Aabu tanaa karaatu
   A 3smCONT read-VN(Sec)
   'Abu is reading/studying'

c. Yaaraa sunaa fuushii
   children 3pCONT anger
   'The children are angry'

(47) a. Da me a ke miya a nan Raarku
   with what indefCONT sauce at here country-your
   'What do you make sauce with in your land?' (Ismail:117)

b. Ko kuwa kun ga bai iaa a yi shawara da shi
   or PRT 2p see NEG3sm be-adequate indef do advice with his
   ba, don yana tasntsu
   NEG because 3smCONT bird
   'Or, do you think it ill-advised to consult him since he's a
   bird?'

It would seem as though the relevant portions of these sentences contain the structure in (48), given our conclusion that the continuous aspect marker is part of INFL:

(48)

```
    I'  
   /   
 I   NP  
 ...naa aikii/karaatuu/fuushii/miyya/tauntsuu
```
I think this conclusion is wrong, for a couple of reasons. Adoption of the structure in (48) would mean that the continuous INFL is the only [+Tense] INFL which may occur with an NP complement. This objection could be surmounted by assuming that the continuous INFL (alone, among [+Tense] INFLs) assigns Case and S-Role, an assumption we will be led to in any case (cf. below). However, there are other reasons for rejecting the structure in (48).

If the continuous INFL may take an NP complement, then we should expect this NP complement to be able to be pro, identified by a [-human] topic, since other NP complements have this possibility, as was seen in chapter 3. INFL does govern a subject pro; why not an object pro?

(49) [TOP XP] [ NP [I ... nna [NP pro ] ]]

However, as we have already seen, this is impossible. (See 2.2.3.)

Another problem for the NP-complement analysis of examples like those in (46) and (47) is that although the continuous INFL may have a following lexical NP, it may not have a following pronoun—whether in the independent or the clitic form. Adverbial pro-form complements to CONT are fine though.

(50) a. *Ali yanaa shi /shii /ta /ita
   A 3smCONT it(Cl-m) it(m) it(Cl-f) it(f)
   'Ali is (doing) it'

b. Ali yanaa can /nan
   A 3smCONT there here
   'Ali is there/here'

449
If the continuous INFL may take an NP complement, why can’t it appear with a pronoun complement? Pronouns are NPs.

Though these last two objections to an NP-complement analysis are, to my knowledge, not specifically addressed in the literature, the objection concerning distributional parallelism with other INFL forms has been a focal point of discussion of the continuous marker. Parsons’ answer was to regard the continuous marker as a verb. This hypothesis was rejected above. An alternative to this which attempts to account for some of the same facts has been to regard ‘CONT + NP’ sequences as being derived from underlying ‘CONT + VP’ structures, where \( V = \text{vi} \) ‘do/make’, though deletion of \( \text{vi} \). I turn now to discussion of this hypothesis, as proposed in Gregersen (1967), and my reasons for rejecting it.

2.3.2 \( \text{vi} \)-Deletion

Gregersen (1967) suggests that the continuous INFL is followed by VP, just like any other INFL, and that surface NP complements are the result of deletion of the verb \( \text{vi} \) in the continuous. Supporting this proposal is the fact that 1) there are corresponding \( \text{vi} + \) NP complements for ‘CONT + NP’ strings and 2) \( \text{vi} \) is obligatory with these same NP complements in all other aspects:

\[
\begin{align*}
\text{(51)} & a. \text{ Ali yanea (yin) } \text{ aikii} \\
& \quad \text{A 3amCONT do-VN(pr)-of work} \\
& b. \text{ Aabu tanaa (yin) karsatuu} \\
& \quad \text{A 3afCONT do-VN reading} \\
& c. \text{ Yaaraa sunaa (yin) fuushii} \\
& \quad \text{children 3pCONT do-VN anger}
\end{align*}
\]
(52) a. Ali yaa/yakan/zai *(yi) aikii
   A 3amPERF/HAB/FUT do work
   'Ali worked/works/will work'

   b. Aabu taa/takan/zaa ta *(yi) karaatu
   A 3sfPERF/HAB/FUT do reading
   'Abu read/reads/will read'

   c. Yaaraa sun/suken/zaa su *(yi) fuushii
   children 3pPERF/HAB/FUT do anger
   'The children were/were/will be angry'

Where there is a surface VP, yi is not allowed in either the continuous
or other aspects:

(53) a. Inaa (*yin) karanta littsaafii
   1aCONT do-VN read book
   'I'm reading a book'

   b. Naa/nakan/zan (*yi) karanta littsaafii
   1aPERF/HAB/FUT do read book
   'I read/read/will read the book'

Gregersen proposes the deletion rule in (54) to account for the above
facts:8

(54) X, yin, Y ---> 1 - 3, where X is not null and Y ≠ Pt [= C1]
   1  2  3

There are two reasons why I believe this analysis is not
acceptable, besides the fact that (54) does little more than describe
the facts. The problem with deriving 'CONT + NP' from an underlying
'CONT + yin + NP' by yi-Deletion is that 1) the "source" sentence and
the "derived" sentence do not always have identical meanings, and 2)
some putative "source" sentences are not grammatical surface structures
in Hausa.

Although rules such as (54) were common in syntactic analyses at
the time of Gregersen’s article, since then, linguists have tried to reduce the power of the grammar by eliminating individual rules such as (54) due to their enormous descriptive potential and the consequent learnability problems they pose. The over-all trend in syntax (and other domains) has been to replace individual rules in the model with general principles; variation between languages is accounted for by postulation of parameters. The move from individual movement transformations to ‘Move-α’, subject to subjacency, the ECP, etc., is one example of this shift. Similar restrictions have been placed on deletion transformations. It is argued that deletion, in order to be recoverable, may apply only to semantically empty words. See Lasnik and Saito, 1984, and Napoli, 1985, for some recent discussion.

In this more restrictive framework, vi-Deletion would be excluded because vi is not semantically empty. The presence of vi restricts the meaning of a continuous sentence to a single interpretation, whereas ‘CONT + NP’ structures without vi have two available readings. While ‘CONT + NP’ may have either the ordinary progressive action interpretation or a habitual action (e.g. occupation) interpretation, ‘CONT + yin + NP’ strings may have only the progressive interpretation.:

(55) a. Sunaa aikii  ‘They work, they are workers’
   ‘They are working (right now)’

   b. Sunaa yin aikii  ‘They are working’
   ‘They are workers’
(56)  a. Yanaa cinikii  'He's a trader'
     'He's trading, bargaining'
     b. Yanaa yin cinikii  'He's trading, bargaining'
          '*'He's a trader'

(57)  a. Mee aukee?  'What do they generally do?'
     b. Mee aukee yii?  'What are they doing right now?'

This distinction parallels a distinction noted in Abraham (1959),
Parsons (n.d. a), and Bagari (1971) between the use of primary verbal
nouns and secondary verbal nouns. As Bagari expresses it, 'CONT +
VN(Pr)' denotes "just a fact", while 'CONT + VN(Sec)' denotes either
this or an occupation or habit. Examples, from Parsons, follow:

(58)  a. Yanaa dinkii  'He's a tailor'/ 'He's sewing'
     3smCONT sew-VN(Sec)
     b. Yanaa dinkaawa  'He's sewing (it)'
     3smCONT sew-VN(Pr)

(59)  a. Yanaa roveroo  'He's a (professional) beggar'
     3smCONT beg-VN(Sec)
     b. Yanaa roverooa Allah  'He's begging/beseeching God'
     3smCONT beg-VN(Pr)-of A  '*'He's a beggar of God'

In other words, 'CONT + vin + NP' yields the interpretation of any
other verb in the continuous, as one might expect. The presence of vin
does have an effect on the meaning.

Furthermore, as Abraham (1959:64) implies (and, cf. also Parsons
(n.d. a)), vin appears only with difficulty before many secondary verbal
nouns in the continuous--e.g. ??'Yanaa yin dinkii' (cf. (58a)). And,
there are 'CONT + NP' strings where, for most speakers, vin is not
possible at all:

453
(60)  a. Tanaa (*yin) maalamaa
    3sfCONT do-VN teacher
    'She's (exercising the profession of) a teacher'

b. Yanaa (*yin) tsantsuu
    3smCONT do-VN bird
    'He's a bird'

c. Muhammadu yanaa (*yin) sarkii a lookacin
    N 3smCONT do-VN emir at time-the
    'Muhammadu was emir at the time'

If yi-Deletion is the only way 'CONT + NP' strings are to be derived, then it has to be rendered obligatory in certain circumstances. Obligatory deletion rules are precisely the type of stipulatory, overly powerful mechanism that linguists have sought to purge from the model of grammar.

In summary, I reject yi-Deletion as an analysis of surface 'CONT + NP' strings since this rule is of a type not allowed in a restrictive theory of grammar due to the fact that 1) it has stipulatory conditions placed on it, 2) yi is a meaningful word, and 3) the presence of yi in 'CONT + NP' strings is not always optional.

In the following subsection, I propose an "up-dating" of the yi-Deletion analysis into a more current framework. This transposition, it will be argued, reflects progress in syntactic theory in that an essentially descriptive account is replaced by an account which comes far closer to achieving explanatory adequacy.

2.3.3 V_e

I have argued that 'CONT + NP' sequences cannot be structural '{I, I NP}'s. That is, the continuous INFL may not take an NP complement. And, we have seen that deletion of an underlying verb yi is not a
satisfactory analysis of these constructions either. Let us consider now a logical alternative in which verb-deletion is replaced by base-generation of an empty verb ($V_e$), as in (61):

(61)

```
  I'  
    /\   
   I    VP
     \   /
      ...naa V NP
          ^  
          e    aikii
```

Since lexical insertion is optional, any category may in principle not be given content. There is thus no a priori reason why a verb cannot be generated empty. Before considering what would sanction such an empty category, and related questions, let us see how this hypothesis gives an immediate account for the lack of null complement anaphora and pronoun complements, which were the reasons for rejecting a '[$I'$, I NP]' structure.

Assuming a structure like that in (61) above, cases of null complement anaphora like the ungrammatical (62) would have to consist of either base-generation of an empty VP, as in (63a), or a VP containing an empty verb and a pro complement NP, as in (63b).

(62) A: Sunaa aikii a gidan wayaa?
    3pCONT work at house-of wire
    'Do they work at the post office?'

    B: *Il, sunaa.
       yes 3pCONT
       'Yes, they do'
(63a) is excluded for the same reason that null VPs are in general excluded in Hausa, no matter what aspect the INFL contains. There is no VP-Deletion in Hausa and no phenomena such as "tag-formation". Presumably, this is because Hausa lacks a LF' rule giving interpretation to null VPs.

(63b) is also an impossible structure. The reason is that unindexed layered empty categories cannot be subanalyzed. \textit{Pro} in (63b) would have to be able to be picked out in order to be assigned a referential index. That "structural emptiness" of this type is impossible was independently shown by the facts of resumptive VP in focus-fronting constructions, discussed in section 2.2.5, and illustrated again here in (64). A moved VP is resumed by a pro-VP (\textit{yi}), which cannot itself have a resumptive pronoun object because the residue of focus-fronting is an indexed VP only. The empty VP cannot have internal empty structure.\footnote{9}

(64) Karanta Rur'aanii suka [vp yi (*shi)] da saahe read-VN(Pr) Koran 3p do it at morning 'Reading the Koran they did in the morning'

Consider now how the structure in (61) allows for an explanation of the ungrammaticality of 'CONT + pronoun' sequences, while permitting 'CONT + lexical NP' and 'CONT + Adverbial pro-form' sequences. Surface 'CONT + lexical NP' sequences have the structure in (61), with the NP

456
receiving Case and 8-role in a way to be made precise below. Why, then, can’t the ungrammatical (65a) be produced in this same way from the corresponding structure, (65b)?

(65) a. *Sunaa shii /shi
  3pCONT it(m) it(Cl-m)

\[ \begin{array}{c}
\text{I'
} \\
\text{I} \\
\text{VP} \\
\text{sunaa} \\
\text{e} \\
\text{shii/shi}
\end{array} \]

Recall that pronouns adjacent to V are Clitics. Clitic pronouns differ from independent pronouns in that have a reduced form and their tone is polar to that of the final syllable of the word to which they are attached. The (a) examples below illustrate clitic objects to verbs. Independent pronouns are ungrammatical in this environment, as the (b) examples show.

(66) a. Sun kaaamaa shii
  3p catch him/it (Cl)

'Vey caught him/it'

b. *Sun kaaamaa shii
   him/it (indep)

(67) a. Sun karântaa shii
  3p read it(Cl)

'They read it'

b. *Sun karântaa shii
   it (indep)

(68) a. Mun tambéye tâ
  1p ask her (Cl)

'We asked her'

b. *Mun tambéye ita
   her (indep)

The reason for the ungrammaticality of (65a) becomes clear in light of (66) - (68), if the Ve analysis of ‘CONT + NP’ (i.e. the structure in (65b) is adopted. An independent pronoun is not allowed in (65b) because pronouns adjacent to V must be cliticized. That is, ‘*Sunaa shii’ is starred for the same reason as ‘*Sun kaaamaa shii’,
"Sun karanta ahii", and "*Mun tambayaa ita" are. The clitic version of (60b) is not permitted either because V is empty and clitics must be realized as syntactic dependents, a requirement we have taken to mean "must be attached to a phonologically realized word". The ungrammaticality of 'CONT + pronoun' string is thus entirely parallel to the exclusion of pro from the position of predicate NP, discussed in chapter 3. We saw there that it is because the copula nee is a clitic on the predicate NP that the predicate NP cannot be empty:

(69) *Abdu pro nee
   A    COP
   'Abdu is (it)'

'CONT + Adverbial pro-form' sequences are acceptable since adverbial nan 'here' and can 'there' are not clitics.

Summarizing our discussion thus far, it has been proposed that surface 'CONT + NP' strings have the structure 'I [vp Ve NP]'. It was shown that this hypothesis successfully and naturally accounts for the fact that the NP "complement" of the continuous aspect marker may be neither a pronoun nor a base-generated empty category (pro), facts which are unexplained under both a 'I NP' analysis and a VP-Deletion analysis.10

2.4 VP Complements: θ-role and Case Assignment

2.4.1 θ-Roles Assignment

In the structure 'I [vp Ve NP]', how does NP receive a θ-role? I have assumed in this study that empty categories are generated entirely empty. That is, they have neither phonological features nor
lexical features such as Case or θ-role. (I follow in this respect Kayne's (1984:195) assumptions with respect to empty prepositions.) Therefore, the source of the θ-role for NP in 'I [vp V_e NP]' cannot be V_e. This leaves I. Suppose that the continuous INFL assigns a θ-role, and that this is what is "verbal" about the continuous INFL, distinguishing it from other INFLs, which cannot take a surface NP complement. Setting aside for the moment the adverbial-type NPs which may occur after the continuous INFL, the NPs which may appear as complements to CONT are NPs which may be interpreted as activities of some kind. These include so-called "action-nouns" (such as aikii 'work', barcll 'sleep', weesa 'play', maqanaa 'speech', tsemmaanii 'thinking', and kuukaa 'crying'); secondary verbal nouns (e.g. karaatu 'study/reading', rubuutuu 'writing', and dinkii 'sewing'); and various other nouns which may be construed as activities or actions (such as sarkii 'emir', maalaamii 'teacher', fuushii 'anger', ruwaa 'water', and zufoo 'hot weather'). Suppose, then, that the continuous marker assigns a θ-role "ACTIVITY". In 'I [vp V_e NP]' structures, this θ-role is assigned to VP. Since the head of VP is empty, it is the NP complement which actually bears the θ-role, for the purposes of the θ-Criterion. Suppose, therefore, that NP satisfies the θ-Criterion in a configuration such as that in (70).

(70)

```
(70)  
   I'  
  /    
 I    VP [ACT-θ]  
     /    
    ...naa V  NP  
       e       aikii/cinikii/sarkii
```
It seems reasonable to assume that when V has content, the continuous marker assigns the same "ACTIVITY/ACTION" θ-role, which is borne by VP this time, since V is not empty. [NP,VP] bears the θ-role assigned to it by the verb, as in any other VP.

(71)

\[
\begin{array}{c}
\text{I'} \\
\text{I} \\
\text{VP [ACT-θ]} \\
\text{...næa V} \\
\text{yin ai:kii/cinikii [THEME-θ]} \\
\end{array}
\]

It now seems possible to account for why there is an extra semantic interpretation available to sentences having the structure in (70), but not to those having the structure in (71). Recall that 'CONT + NP' strings allow for an interpretation of NP as an occupation or regular activity, but 'CONT + V + NP' strings do not. Suppose that the "occupational" interpretation is available in principle to any NP bearing the ACTIVITY θ-role. In (70), since [ACT-θ] is borne by [NP,VP], [NP,VP] may be interpreted as an occupation. In (71), on the other hand, it is only VP which bears the θ-role "ACTIVITY" and hence the occupational interpretation is unavailable. [NP,VP] in (71) bears the θ-role assigned by V, and not the [ACT-θ] assigned by CONT.

Postulation of (71) raises a question about the hypothesis developed in chapter 2 that only categories bearing the features [+N,-V] (i.e., NPs, gerund clauses, and S's) may bear θ-roles. In (71), VP, which is [+V,-N], bears a θ-role, in apparent violation of the hypothesis in question. Yet, it does not at all seem odd that VP, as well as NP, may bear the semantic role of activity/action. It seems
that the restriction of \( \theta \)-bearers to \([+N,-V]\) is not valid for all types of semantic roles. If it is only argument \( \theta \)-roles that must be borne by \([+N,-V]\) categories, as was suggested in chapter 2, then there would seem to be no problem here if we assume that "ACTIVITY" is not an argument \( \theta \)-role, as seems reasonable. Other non-argument semantic roles may be borne by non-NPs: various adverbial \( \theta \)-roles, for example, may be filled by AdvPs (as well as NPs and clauses).\(^{11}\)

Further support for the analysis of the continuous TENSE as a \( \theta \) role assigner comes from the facts of VP focus-fronting, discussed above in 2.2.5. Recall that a focussed VP must in general be resumed by \( v_i \), serving as a pro-verb. It was shown that the appearance of \( v_i \) is required by the ECP, following Koopman (1984), \( v_i \) having all the properties of an ECP-required resumptive pronoun. The trace of VP is not properly governed since it lacks a lexical \( X^0 \) governor. INFL, which does govern VP, is not a lexical category. (Lexical categories are those based on the features \([+N, +V]\).) However, when INFL is continuous, a pro-verb in the place of the trace of VP focus-fronting is not required. Continuous INFL, thus, does seem to be a proper governor, even though it is as much a nonlexical category as INFL in any other aspect. We seem to be faced with a contradiction.

The contradiction is only apparent though, since CONT, although an \( I \), is a \( \theta \)-marker, which qualifies it as a proper governor. Though direct \( \theta \)-markers are typically lexical categories, this is not necessarily so. And, that the crucial notion for proper government involves \( \theta \)-marking, rather than government by a lexical category, is independently argued for by a number of researchers (cf. discussion in

461
Chomsky 1986, Stowell 1981, among others). Thus, positing that the CONT INFL assigns a θ-role to VP entails, if these analyses prove correct, that the CONT INFL is a proper governor, which is precisely what the facts require.12

The θ-role assigning property of the continuous INFL might also be said to be the reason for the obligatory nonfinite verb form (the primary verbal noun) in the continuous aspect only. The verb stem in Hausa, we have seen, appears in two forms, as far as tense is concerned: a finite form and a nonfinite form (the primary verbal noun), which is also the citation form of the verb for native speakers. Descriptively, the distribution of these is as in (72).

(72) V is finite where governed at S-structure by INFL with TENSE, where TENSE ≠ CONT. Otherwise, V is nonfinite.

Recall that it has been suggested that the subjunctive INFL has TENSE (without features), whereas the INFL in gerund clauses does not have features at all (i.e. no TENSE and no AGR). Among INFLs with TENSE, then, only the CONT requires the verbal noun form rather than the finite form.

We might say, in light of our conclusions here, that the reason for this is that CONT is alone among tensed INFL forms in being a θ-marker. That is, V of a VP which bears a θ-role must appear in the non-finite form. V governed by a tensed INFL appears in the verbal noun form only where INFL is continuous, at least in Standard Hausa, since only the CONT INFL assigns a θ-role.

In Western (Niger) Hausa, the future INFL13 may also take verbal noun and "action noun" complements, as the examples in (73) illustrate.
(73)  a. Zan koomcowaa
    1sFUT return-VN(Pr)
    'I will return'

    b. Zai tambayasshi
    3amFUT ask-VN(Pr)-of-him
    'He will ask him'

    c. Zaa mu cin naamaa
    1pFUT eat-VN (Pr)-of meat
    'We will eat meat'

    d. Zaa ka aikii
    2amFUT work(N)
    'You will work'

    e. Zaa ta rawaa
    3sfFUT dance(N)
    'She will dance'

I assume that the analysis of the CONT given here can be extended to the FUT INFL in modern Western Hausa.

It should be mentioned, though, in this connection, that Chadic languages commonly require the primary verbal noun form of the verb stem whenever the governing INFL is nonperfective. Thus, Western Hausa, Bole, Ga'anda, and Gude, and many others, use the verbal noun form in both the continuous and the future. And Kanakuru (Newman, 1974), which has in addition to these two, a third imperfective tense, the past continuous, requires the verbal noun form in all three nonperfective tenses.

Proto-Chadic is commonly reconstructed with three tense/aspect forms: perfective, imperfective, and subjunctive (Schuh, 1977). Morphologically these were, and typically still are, marked by both preverbal prefixes and changes in the verb stem itself (Newman and Schuh, 1974). The imperfective form of the verb stem (Jungraithmayr's
reconstructed "Habitativstäm" *awa) corresponds, then, to the primary verbal noun form (cf. Hausa koomo-waa above, etc.). The obligatory verbal noun form of verbs in the continuous in Standard Hausa may thus not necessarily be historically related to the θ-role assigning property of the CONT INFL. I leave this matter is this rather speculative state.

2.4.2 Case Assignment

In the structure 'CONT [yp V NP], where V is overt, NP receives Case from V, in the regular way. When V is empty (i.e. in 'CONT [yp Ve NP]') though, the source of Case for NP cannot be the empty category since base-generated empty categories have no features, including Case. We are thus led once again to regard the continuous INFL as the source of the required feature. Following now exactly Kayne's (1984) analysis of empty prepositions in English double object constructions, which was extended to overt heads in chapter 2, I propose that NP in a structure like (74) receives Case from INFL, via the empty verb. That is, INFL assigns Case to VP from where it "drips", by general convention, to the head, Ve. It is then transferred ("reassigned") by Ve, since [+V, -N] is a Case-assigner, to NP, landing ultimately on N, the head of NP:

\[(74) \text{Sunaa [yp Ve [np aikii ] [OBJ]]}\]

Now, what about 'CONT [yp V NP]', where V is not empty and thus has a lexical Case-feature to assign? If CONT assigns Case in this structure, a violation of Case uniqueness would result since NP would receive both a Case-feature from CONT (via V) and one directly from V.

464
Borer (1986:section 3) suggests that Case facts in certain ergative constructions in colloquial Modern Hebrew and agreement facts in "substandard" English existential sentences can be given an account if certain verbs are taken to be optional assigners of accusative Case in these dialects. Borer assumes that normally be in (75) is not a Case-assigner, and that the postverbal NP receives nominative Case by virtue of coindexation with AGR (and there). This coindexation explains the observed number agreement between the postverbal NP and the inflection on be.

(75) There are at least seven people in the garden

If coindexation, which is assumed to apply freely, does not take place, the postverbal NP cannot receive nominative Case, and it is free to receive accusative Case from be. In this case, there is no number agreement between the postverbal NP and be since NP is not coindexed with AGR.

(76) There's at least seven people in the garden

Similar facts, but with overt Case, obtain in Modern Hebrew.

Returning now to Hausa, suppose that the continuous aspect marker (i.e. TENSE of a CONT INFL) only optionally assigns objective Case. The possibility of both V and Ve VP complements follows. When Ve is the head of VP, it is the Case of CONT which is assigned and transferred to [NP,VP]. When V is the head of VP, it is the Case of V only which is assigned to [NP,VP].
2.5 PP Complements

2.5.1 Pe

Not all surface NP complements of the continuous marker are "activities" or "actions". They may also be NPs expressing a location, as in (77),

(77) a. Sunaa kaasuwa
   3pCONT market
   'They are at the market'

b. Yanaa nan
   3mCONT here
   'He is here'

c. Tanaa cikin daakii
   3sfCONT inside-of hut
   'She is in the room'

or a state/condition, as in (78).

(78) a. Sunaa kwance
   3pCONT lie-down(STAT)
   'They are lying down'

b. Munaa laafiyaa
   1pCONT health
   'We are well'

c. Tanaa rashaar laafiyaa
   3sfCONT lack-of health
   'She’s sick'

There is reason to believe, however, that, as in the case of Activity NP complements, locative and stative NP complements do not constitute structural NP complements to the continuous INFL.

Surface adverbial NP complements of CONT generally alternate with PPs headed by the preposition a 'at'. This can be seen when the adverbial NP is fronted for focus:

466
(79) a. (A) kaaasuwa suke
    at market 3p REL CONT
    'At the market they are'

b. (A) nan yake
    at here 3sm REL CONT
    'Here he is'

c. (A) cikin daakii take
    at inside-of room 3sfREL CONT
    'In the room she is'

d. (A) kwance suke
    at lying-down 3pREL CONT
    'Lying down they are'

And, as with activity NP complements, adverbial NP complements may not be null:

(80) a. A: Ali yaa naa nna?
    A 3smCONT here
    'Is Ali here?'

    B: *Ii, yaa

b. A: Kuna laafiyyaa?
    2pCONT health
    'Are you well?'

    B: *Ii, mnaa

Suppose, therefore, that surface NP complements to CONT are actually ´[pp Pa NP]´ complements, as in (81).

(81)

```
  I'
  /   \
 I   PP
  /    /
...naa P   NP
     a   kaasuwa/nan/cikin daakii/kwance/ etc.
```

The ungrammaticality of (80) now follows. CONT cannot have a [pp pro]
complement simply because CONT is not so lexically marked. That
obligatoriness of subcategorized PPs is a lexical property in Hauae can
be seen by the following example:

(82)  a. Naa gayaa *(wa Ali) ya zoo goobe
     ls tell to A 3am come tomorrow
     'I told Ali to come tomorrow'

     b. Naa cee *(wa Ali) ya zoo goobe
     ls say to A 3am come tomorrow
     'I said (to Ali) that he come tomorrow'

Nor can the CONT have a [pp Pe [np pro]] complement, for the same
reason a [vp Ve [np pro]] is impossible: base-generated empty
categories cannot have internal structure (cf. discussion in section
2.3.3).

Adopting, then, the structure in (81), I assume that CONT may
assign either a LOCATIVE θ-role or a STATIVE θ-role, or an ACTIVITY θ-
role.

(83)  naa
      (LOC-θ)
      (ISTAT-θ)
      (ACT-θ)

Assignment of the "PP" θ-roles proceeds as described above for θ-role
assignment to VP, with [NP, PP] ultimately bearing the θ-role in [pp Pe
NP] structures.14

Before turning to [pp P NP] complements where P is overt, we must
address a lacuna in the 'a + NP/' NP alternation upon which our [Pe NP]
analysis rests, in part. When a locative or stative complement to CONT
is fronted, it may appear as either NP or a + NP, as was just seen in
(79). However, when not moved, and thus when appearing immediately
following the CONT INFL, a may not appear:

(84)  a. Sunaa (*a) kaasuwa

       b. Yanaa (*a) nan

       c. Tanaa (*a) cikin d'asii

       d. Sunaa (*a) kwance

How are we to account for (84) versus (79)?

2.5.2 On the Distribution of a

In order to answer the question just posed, let us consider the total distribution and meaning of the preposition a.

a, generally labeled a "locative preposition", is normally translated into English as 'at' or 'in, on'. It occurs with locative NPs, with state or manner NPs, and with various temporal NPs. Except when occurring as the complement to CONT, a is generally optional with these NPs.

(85)  a. Sun sabka (a) tashaa

       3p  arrive at station

       'They arrived at the station'

       b. Sunaa yin aikinsu a hankalii

       3p  do work-their at sense

       'They do their work carefully'

       c. Sun zoo (a) Rarfee biyu/ (a) sheekaraa ta 1984

       3p  came at hour two at year of

       'They came at two o'clock/in 1984'

       d. An  saa shi (a) d'asii

       indef put it at hut

       'It was put in the hut'

       e. Yaa kwantes (a) Rasa

       3am lie-down at ground

       'He lied down on the ground'

469
It seems reasonable to assume, then, that g assigns the 0-role "LOCATION", and perhaps also "STATE" and "TIME", though these latter might be thought of as extensions of the locative role (a location in time, etc.) Since g is optional, the NPs in question must satisfy both the 0-Criterion and the Case Filter on their own. It can be supposed that, following our discussion in chapter 2 (section 3), there is a general rule of default Case assignment to adverbial NPs in Hausa. This is true not only for locative NPs, but also for adverbials bearing other semantic roles (goal, etc.):

(86) a. Sun tafi (wajen /zuwa) kaasuwaal
   3p go towards to market
   'They went towards/to the market'

b. Sun shiga (cikin) daakii
   3p enter inside hut
   'They entered the hut'

c. Sun taashi (daga) gidanmu wajen ['arfee biyu
   3p leave from house-about hour two
   'They left our house around two o'clock'

d. Sun kai (ga/wajen) Kano
   3p reach near/towards K
   'They reached Kano'

Adjunct positions are also subject to structural 0-role assignment, as was proposed in chapter 2. Prepositions thus are required neither for Case nor for 0-role here and thus adverbial NPs may appear "bare" in Hausa.

When a locative or stative NP appears as complement to the continuous marker, g is not obligatory either, because 1) nna assigns [LOC-8]/[STAT-8] and 2) adverbial NPs have default Case. We should
expect that a may be possible, however, as it is with the locative complement of verbs like saa ‘put’. The locative 8-role from saa may be combined with that assigned by a:

(87) a. Sun saa a daakii
    3p put it at hut
    ‘They put it in the hut’

b. *Suna saa a daakii
    3pCONT at hut
    ‘They are in the hut’

Why is (87b) ungrammatical? It cannot be because of a Case uniqueness violation, since we concluded above that naa is only an optional Case-assigner.

That the ungrammaticality of (87b) is not exclusively a particularity of a can be seen by examples like (88), where the CONT marker appears with a PP complement headed by daga ‘from’. The same pattern is observed. An overt preposition is not possible when PP is in situ, but fine when the PP is fronted:

(88) a. *Suna daga Kanoo
    3pCONT from K
    ‘They are from Kano’

b. Daga Kanoo suka
    from K  3pREL CONT
    ‘They are from Kano’

Concentrating for the moment on the ungrammaticality of (87b) and (88a), suppose we say that the continuous marker naa may not take a following a (or daga) because naa here does not participate in compositional 8-role assignment and thus the LOC or STAT 8-role it assigns remains on PP—if P is overt, in violation of the condition on
possible θ-bearers of argument θ-roles. That is, since PP is not [+N,-V] it is not a proper bearer of the feature [LOC-θ] or [STAT-θ]. Compare thus (89a,b,c).

(89) a. *I′
   I  PP [LOC-θ]
   P NP
   Sunaa a/daga Kanoo

b. I′
   I  PP [LOC-θ]
   P NP
   Sunaa a Kanoo

c. VP [= (87a)]
   V′
   V NP PP
   P NP [LOC-θ]
   ssa shi a daakii

The assumption here, a natural one I think, is that the child must have positive evidence in order to posit compositional θ-role assignment. Until such structures are "seen", the children assumes regular, direct θ-role assignment. Thus since 'nsa + [pp a/daga/ga...]’ is never heard, the child assumes that nsa does not allow compositional θ-role assignment.

This brings us back to (88b) and equivalent structures where an overt a may occur. Why is an overt preposition possible in the continuous when PP is fronted? In fact, the accurate generalization about the overt occurrence of a, daga, etc. is not really "fronted PP" versus "in situ PP", as examples where PP is not fronted, such as those in (90), show.
(90) a. lookacen da yaaraa SUKE (a) Kanoo
time-the that children 3pREL CONT at K
'when the children were in Kano'

b. mutaanen da SUKE daga Kanoo
people-the that 3pREL CONT from K
'the people who are from Kano'

Rather, it seems to be a question of what the form of the continuous
marker is: SUNAA (nonrelative), KEE (relative), or SUKE (relative).
The (3p) relative form of a continuous INFL having a PP complement is
SUKE, if agreement if overt, as in (90), or KEE, with AGR-drop, as in
(91):

(91) a. lookacen da yaaraa KEE (a) Kanoo

b. *mutaanen da KEE daga Kano

As comparison of (91) with (83) reveals, locative-assigning KEE, like
SUNAA, apparently may not participate in θ-role composition, while SUKE
may. After discussing other cases of 'CONT + PP', but where P is
overt, we return to the distribution of the two forms of the relative
continuous marker KE and KEE.

2.5.3 [P NP]
The continuous INFL regularly occurs with a PP headed by the
preposition da 'with'. 'CONT + [pp da NP]' constructions express
possession of a quality or a thing:

(92) a. Sunaa *(da) ku'dii
3pCONT with money
'They have money'

b. Sunaa *(da) kyau
3pCONT with beauty
'They are nice'
As indicated, the preposition is obligatory here. Suppose therefore that an "ATTRIBUTIVE" θ-role is assigned in Hausa by combination of the STAT-θ-role feature of CONT with the θ-role assigned by da.

\[(93)\]

```
I'  
   PP  
      P NP [ATTRIB-θ]
     Sunaa da  kyau
```

It might in fact be more accurate to consider 'CONT + da' as a case of reanalysis since da may be "stranded", at least in some dialects, when adjacent to CONT. Recall that preposition-stranding is in general impossible in Hausa. Thus, compare (94) with (95):

\[(94)\] a. *Waa suka yi maganaa da?  
who 3p do speech with  
'Who did they talk to?'

b. A: Kaa zoo da kaayanka?  
2am come with things-your  
'Did you bring your things with you?'

B: *Ii, naa zoo da  
yes 1s come with  
'Yes, I did'

\[(95)\] a. Nee suke da?  
what 2pREL CONT with  
'What do they have?'

b. A: Kanaa da kudii?  
2amCONT with money  
'Do you have any money?'

B: Ii, inaa da 16  
yes 1sCONT with  
'Yes, I do'
Another construction in which the continuous INFL has a following preposition is with activity complements preceded by the preposition *ga*. These constructions, common in the speech of my Western Hausa speakers (cf. also Gouffé 1968/69:5), are used to place emphasis on the imperfectivity of the action and are commonly translated as French "être en train de":

(96) a. Sunaa ga aikii
   3pCONT at work
   'They are working'

b. Sunaa ga karanta littaaflii
   3pCONT at read-VN(Pr) book
   'They are reading a book'

c. Ali shinaa ga sarkii aa'ad da anka yi yaakii
   A 3mCONT at emir time-the that indef do war
   'Ali was the emir at the time of the war'

We might take *ga* to be a clitic on CONT itself, as in (97a), or as head of a PP taking NP or gerund clause complements which bear a compositional 0-role from *nna* and *ga*, as in (92b).17

(97) a. 
   I
   |    VP
   |    |  NP
   |    |  a
   |    |  karanta
   |    |  aikii
   |    |  littaaflii
   |    a  sarkii
   ...nna + ga

b. 
   I
   |    PP
   |    |  NP
   |    |  a
   |    |  PRO karanta litt.
   |    a
   |    aikii
   |    sarkii
   ...nna

(97a), or (97b) assuming no reanalysis, would be sufficient to disallow a *pro* or trace complement to 'CONT + ga'.

(98) a. Nee suke ga *(yii)?
   what 3pCONT at do
   'What are they doing'
b. A: Haalaamai sunaa ga aikii yanzu?
    teachers 3pCONT at work now
    'Are the teachers working now?'

    B: Ii, sunaa ga *(yii)
    yes 3pCONT at do
    'Yes, they are'

Summarizing our discussion so far, we have seen that Case and θ-role assignment with a [pp P NP] complement to CONT is basically parallel to these in 'CONT + [yp V NP]' constructions. A [STAT-θ] CONT may form a compositional θ-role with da ([ATTRIB-θ]) and [ACT-θ]. CONT may form a compositional θ-role with ga (something like "PROGRESSIVE ACTIVITY"). The NAA and KEE forms of CONT [LOC-θ] may not participate in compositional θ-role assignment, though KE [LOC-θ] may.

(99) a. CONT + da ---> [ATTRIB-θ]
    [STAT-θ] [θ]

    b. CONT + ga ---> [PROG ACT θ]
    [ACT-θ] [θ]

    c. KE + P ---> [LOC-θ]
    [LOC-θ] [LOC-θ]

2.5.4 KE versus KEE

An account of 'CONT + PP' and 'CONT + Adverbial NP' constructions has just been given in which the ungrammaticality of overt locative prepositions is the result of a LOC-θ assigning CONT not participating in compositional θ-role assignment. The LOC-θ can thus only be assigned to the PP complement, violating the condition on possible θ-bearers. It was argued that ability to participate in θ-role composition is a "marked" property of a θ-marker. Unless such structures are encountered, the child assumes they are impossible.
Cases of CONT + P 8-role composition were given in which CONT was not [LOC-8]. It was suggested that CONT [LOC-8] may participate in 8-role composition only where CONT has the form KE.

I have no explanation to offer at this time for the difference in behavior between KE, on the one hand, and NAA/KEE on the other. For the sake of completeness, I will present briefly here the descriptive facts of the KE/KEE distinction which might help elucidate this question. My description is based on that in Ma Newman (1976) for Standard Hausa and Gouffè (1964, 1966/67) for Western Hausa, though I present the facts in terms of the analysis of copular and CONT INFAs developed in this thesis.

Using '3p' forms for illustration, the forms of the copular INF and the continuous INF are basically as in (100) and (101), respectively, where E = Eastern Hausa (i.e. Standard Hausa) and W = (Western Hausa) and AC = a + a consonant identical to the following word.

(100) The Copular INF

<table>
<thead>
<tr>
<th>Environ.</th>
<th>Form</th>
<th>Example (E only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonrel.:</td>
<td>___ [+N]</td>
<td>(w/AGR) MEE (E) NAA (W)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suu [I', daalibai nee] they students COP 'They are students'</td>
</tr>
<tr>
<td>Rel.:</td>
<td></td>
<td>(w/ AGR) SUKE (E,W)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yaaran da (SUKE daalibai) the kids who are students'</td>
</tr>
<tr>
<td></td>
<td>(AGR-drop) KEE (E)</td>
<td>aC (W)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yaaran da KEE daalibai</td>
</tr>
</tbody>
</table>

477
\[(101)\] The Continuous INFL

<table>
<thead>
<tr>
<th>Environ.</th>
<th>Form</th>
<th>Example (E only)</th>
</tr>
</thead>
</table>
| **Nonrel.** | ___ [-N] | (w/AGR) SUNAA (E,W) | SUNAA [yp Ve aikii]  
'They are working'  
SUNAA [pp Pe Kanoo]  
'They are in Kano' |
|           | (AGR-drop) NAA (E,W) | Daalibai NAA aikii/Kanoo  
'The students are working/  
in Kano' |
| **Rel.** | ___ VP | (w/AGR) SUKEE (E)  
SUKA (W) | Inaa SUKEE [yp Ve aikii]  
'Where do they work?'  
Inaa SUKEE [yp tafiya]  
'Where are they going' |
|           | (AGR-drop) KEE (E)  
KA (W) | Inaa daalibai KEE aikii  
'Where are the students  
working?' |
| ___PP | (P) | (w/AGR) SUKE (E,W) | Lookacin da SUKE a Kanoo/  
da kudii  
'When they are in Kano/  
have money' |
| ___PP | (w/AGR) SUKE ~ SUKEE (E)  
SUKE (W) | Lookacin da SUKE(E) Kanoo  
'when they are in Kano' |
| ___PP | (AGR-drop) KEE (E)  
(P or Pe) aC (W) | Lookacin da daalibai KEE  
da kudii / Kanoo  
'When the kids have money/  
are in Kano' |

Some variation (both among speakers and for given speakers)  
between KE and KEE reported in Ma Newman is glossed over here. I think  
some of this may have to do with how speakers analyze bare-NP  
complements--as [yp Ve NP] or as [pp Pe NP]. This is true of stative  
NP complements, for example. Assuming stative nouns to be [+N] (since  
they do not assign Case, but seem to require it), then 'CONT + stative  
NP' could be either 'CONT [pp Pe NP]' or 'CONT [yp Ve NP]' and hence  
the KEE ~ KE variation.
What seems to be clear for all speakers is that KEE (= W KA) is used with verbal nouns and action nouns, and KE in front of predicate NPs of copular constructions and PPs with overt prepositions. Na Newman's conclusion that KEE is a "verbal" relative marker and KE is a "nonverbal" one appears to be an accurate one. This distinction can be characterized in syntactic terms under my analysis of the continuous marker: KEE appears with VP and KE appears with NP and PP (i.e. [-V]).

2.6 Summary

Summarizing briefly, in this section an analysis of the continuous aspect marker *naa* has been proposed which takes *naa* to be an INFL element which assigns a predicate 9-role, and (optional) Case. The one-to-one nature of lexical feature assignment is respected in these constructions because of (independently required) compositional 9-role formation, which was argued to be triggered by positive evidence. An adequate account of the constructions in which *naa* occurs also led us to posit base-generated empty feature-assigners—[ye] and [pe], analogues to *pro* of chapter 3—a point which will be addressed explicitly below, in section 4.

In order to better understand the syntax of the continuous aspect marker, it is useful to compare it with other auxiliary-like elements in Hausa. We will consider therefore in the next section the syntax of modal and aspectual verbs in Hausa.

3. Modals and Aspectuals

3.1 The Pattern

"Auxiliary verbs" in Hausa share properties with the continuous...
aspect marker. What are typically termed auxiliary verbs in Hausa are
verbs which may take a verbal (noun) complement (Pilaszcikowa 1960:102,
Jagger 1977:60 and references cited there). These consist of modal
verbs such as ghara ‘be unable’, kasa‘be unable’, iya ‘be able,
worthy’, and iyha ‘be able’ and numerous aspectual verbs (e.g. bari‘
leave off’, cikha ‘do too much’, dada‘repeat’ danna ‘stop’, dina
faaraa ‘repeat’, Rara ‘to complete’, rage ‘to do less’, kusa ‘to
almost do’, raga ‘to already have done’, etc.). Like the continuous
aspect marker, modals and aspectuals may take both verbal complements
headed by a primary verbal noun and nominal complements consisting of
secondary verbal nouns, “action-nouns”, and various other nouns
constrained as some sort of action or activity:

(102) a. Ali yaa iya karaa Rur’ananii
   A 3sm can read-VN(Pr) Koran
   ‘Ali can read the Koran’

b. Ali yaa iya karaatun Rur’ananii
   A 3sm can read-VN(Sec) Koran
   ‘Ali can read the Koran’

c. Ali bai iya aikii ba
   A NEG3sm can work(N) NEG
   ‘Ali can’t work’

d. Ali yaa iya ruwaas / Hausa / dookii
   A 3sm can water Hausa horse
   ‘Ali can swim/ speak Hausa/ ride a horse’

(103) a. Ali yaa faara karaa Rur’ananii
   ‘Ali began reading the Koran’

b. Ali yaa faara karaatun Rur’ananii
   ‘Ali began reading the Koran’

c. Ali yaa faara maganaa
   speech
   ‘Ali began speaking’
d. Ba a faara aanyii acoosi ba
   NEG indef begin cold really NEG
   'It hasn’t starting getting real cold'

As is common in many languages, the meaning of some auxiliary verbs is a figurative extension of the meaning of a "regular" verb. Examples are the verbs cika 'fill/do too much', shaa 'drink/do often', and tabaa 'touch/ever do':

(104) a. Ali yaa cika tukunyaa
   A 3sm fill pot
   'Ali filled the pot'

a'. Ali yaa cika shaa giyaa
   A 3sm fill drink-VN beer
   'Ali drank too much beer'

b. Ali yaa shaa giyaa
   A 3sm drink beer
   'Ali drank beer'

b'. Ali yaa shaa zuwaa gerii
   A 3sm drink come-VN town
   'Ali goes to town a lot'

c. Kar ku tabaa wutaa
   NEG 2p touch fire
   'Don’t touch the fire'

c'. Haliima ba ta taba cin aladee ba
   H NEG3sf touch eat-VN pork NEG
   'Haliima has never eaten pork'

Though aspectual and modal verbs are like the continuous marker in that they may take surface NP as well as VP complements, they differ from it in that they generally may take a pro/pronoun complement, and quite generally display the properties of verbs. After presenting these properties, I will propose that modals and aspectuals are like CONT because they too assign an ACT 8-role, and different from CONT
because they are verbs and head a VP.

3.2 Modals and Aspectuals are in VP, not INFL

It is clear that modals and aspectuals are not base-generated elements of INFL since (unlike the continuous marker) they take regular verb morphology, such as the verbal noun form, and may be "stacked". These can be seen in (105).

(105) a. Sun faara iyaawaa
    3p begin can-VN(Pr)
    'They started being able (to do it)'

b. Bai iya daina cika shan giyaa ba
    NEG3am can stop-VN fill-VN drink-VN beer NEG
    'He can't stop drinking too much beer'

There is also evidence which shows that modals and aspectuals are not moved to INFL from a position in VP. Quite generally, these verbs have all the properties of main verbs. Modal particles may appear either directly before or directly after auxiliary verbs. Auxiliary verbs normally permit a pro complement. Auxiliary verbs may be fronted (with the rest of VP) for focus. These properties, which are the opposite of those found with the continuous INFL, but identical to those found with ordinary verbs, are illustrated in (106), (107), and (108), respectively.

(106) a. Ali yaa dai ta'a aikii
      A 3am PRT touch work
      'Ali has worked before'

b. Ali yaa ta'a dai aikii
(107) a. A: Kin taɓa zuwaa Kanoo?
    2af touch come-VN K
    'Have you ever been to Kano?'

    B: Ii, naa taɓaa
    yes la touch
    'Yes, I have'

b. A: Yaaraa sun faara karanta litaɓaa?
    children 3p begin read-VN book
    'Did the children begin reading the book?'

    B: Ii, mana, sun faaraa
    yes indeed 3p begin
    'Yes, they have'

c. A: Yaaraa sun iya karanta Rur’aani?
    children 3p can read-VN Koran
    'Can the children read the Koran?'

    B: Kai, ba su iyaa ba
    NEG3p can NEG
    'Of course they can’t'

(108) a. Barin karanta Rur’aani suka yi
    leave-VN read-VN Koran 3p do
    'Leaving off reading the Koran they did'

    b. Faara karanta litaɓaa sukeed soo su yi
    begin-VN read-VN book 3p want 3p do
    'Beginning to read the book they want to do'

    c. Saakee dinka riigaa yakee yii
    repeat-VN sew gown 3sm do-VN
    'Sewing the gown again he’s doing'

There is thus no reason to assume that “auxiliary verbs” are any
different structurally from main verbs. All syntactic tests indicate
that they are [V,VP] both at D-structure and at S-structure. The only
difference between aspectuals and modals and other verbs, in other
words, is that aspectuals and modals may take VP complements.

483
3.3 An Analysis

3.3.1 Internal Argument

Jaggar (1977), following Gregersen's (1967) analysis of the continuous construction, proposes that auxiliary verbs are verbs which govern only a verbal noun complement and that surface 'auxiliary verb + NP' strings are the result of deletion of an underlying "dummy" vin 'do-VN'. This analysis has the very same drawbacks as the vi-Deletion analysis of the continuous construction. Besides the methodological considerations already reviewed above and which apply again here, vi-Deletion is problematic here because, once again, vi is not semantically empty. Jaggar points out examples like that in (109a), and others such as (109b,c) can be constructed.

(109) a. Yaa faaa yin maganaa
    3sm postpone do-VN speech
    "He decided not to continue speaking"

a'. Yaa faaa maganaa
    "He decided not to speak"

b. Yaa iya yin cinikii
    3sm can do-VN bargaining
    "He can bargain (well enough for us to send him to the market right now)"

b'. Yaa iya cinikii
    "He knows how to bargain (in general)"

c. Yaa iya yin ruwaa
    3sm can do-VN water
    "He knows how to make water"

c'. Yaa iya ruwaa
    "He can swim"

If deletion is to be limited to elements without semantic content, as a restricted model of grammar would require, then vi-Deletion is not
possible rule. This leaves us with the question of why only modals and aspectuals, among verbs, may have both VP and NP complements.

Suppose that modals and aspectuals, like the continuous marker, assign an ACT-0, perhaps further specified for features such as repetition, completion, duration, or mood. It was suggested in the preceding section that the continuous aspect marker can take a VP complement, but never an NP complement, because of a grammatical principle disallowing the category TENSE from governing a nominal category \( \approx (97) \). We saw that this means that the continuous marker can never appear with a pro complement since Hausa quite generally does not allow null VPs. A pronoun complement was also seen to be impossible here, because the structure could only be \( \langle \text{vp } V_e \text{ Pronoun} \rangle \). Since direct object pronouns are clitics and a clitic in this position has no available overt host, the structure is marked as deviant. Now, since aspectuals and modals are verbs, and not part of INFL, there is no TENSE node governing their complements and thus, in principle, they ought to be able to have either a structural VP or a structural NP complement.\(^{19}\) It follows that aspectuals and modals ought to be able to take both pro and overt pronoun complements, as is generally the case. Pro complements were illustrated in (107) above, and pronoun complements are exemplified here:

\[
\begin{align*}
\text{(110) a. } & \text{ Mun faaraa/gamaa shi} \\
& \text{lp begin finish it} \\
& \text{\textquoteleft We began/finished it\textquoteright} \\
\text{b. } & \text{Yaa iyaa shi} \\
& \text{3am can it} \\
& \text{\textquoteleft He knows how to do it\textquoteright}
\end{align*}
\]
Some auxiliary verbs have difficulty taking pro and pronoun complements. These seem to be those verbs whose "auxiliary meaning" is a figurative extension of a more concrete meaning, as Jagger (op. cit.) points out. Cikaa 'fill/do too much' is an example.

(111) A: Ali yaa cika shan giyaa?
    A 3sm fill drink-VN beer
    'Does Ali drink too much beer?'

    B: *Wallaahii, yaa cikaa (shi)
    by-God 3sm fill it
    'I'll say he does'

This may be because an NP complement (the only possible structure for a pro or a pronoun complement for the reasons just reviewed) tends to force the nonfigurative interpretation, which makes no sense here. Compare (111) with (112), the nonfigurative use of cikaa.

(112) A: Ali yaa cika tukunyaa?
    A 3sm fill pot
    'Did Ali fill the pot?'

    B: Ii, yaa cikaa
    yaa 3sm fill
    'Yes, he did'

It is accurate to say though that, in general, aspectuals and modals may take either VP or NP complements, to which they assign an ACT 0-role. Modals may take a (subjunctive) clausal complement as well; aspectuals usually do not (cf. Jagger op. cit. for examples and discussion). Aspectuals and modals are distinguished from other verbs in that they assign an ACT 0-role (and they assign Case optionally) and thus may take a VP complement. The head of the VP complement, as expected, must appear in the verbal noun form since it is not governed
by INFL. (Recall that the finite form of the verb may appear only
where governed at S-structure by a non-continuous INFL with TENSE.)

(113) ...

I'  
   ___________  
   |             |
   I     VP
   |   ________  
   V       VP
   |   _______  
   V       NP

Ali yaa faara keranta littaafii
'Ali began reading the book'

INFL in (113) governs faaraa, since heads of maximal projections may be
governed from the "outside", but not kerantaa since there are two
intervening maximal projections (VP_i and VP_j).

Since aspectuals and modals are VP 0-markers, we should expect
that spell-out of the trace of VP should not be obligatory when the
VP complement to such verbs is extracted. In other words, auxiliary
verbs will behave like the continuous INFL, as opposed to other INFLs,
in this respect. This is true, as examination of (112a-c) reveals.

(114) a. Karanta Kur'aanii suka faaraa (yii)
read-VN Koran 3p begin do-VN
'Reading the Koran they began doing'

b. Faaraa karanta Kur'aanii sukee (yii)
begin-VN read-VN Koran 3pCONT do-VN
'Beginning to read the Koran they are doing'

c. Faaraa karanta Kur'aanii suka *(yi)
begin-VN read-VN Koran 3pPERF do
'Beginning to read the Koran they did'

The examples in (114), given the structure in (113), would
seem to pose a problem with respect to the A-over-A condition, which
requires 'Move-α' to apply to maximal phrases only (cf. Chomsky

487
Assuming that the A-over-A condition, or its equivalent, is a condition on S-structure and not on movement, as in Chomsky (op. cit.:177), one might suppose that, where there is no resumptive yi, it is a gerund clause, and not a VP, that has been extracted. This would also explain why a resumptive pro-verb is acceptable in a construction in which a gap does not violate either subjacency or the ECP. Recall that resumptive pronouns are marginal for most speakers in contexts where a gap would not trigger ungrammaticality. Support for this line of reasoning is the fact that verbs like cikaa for which the auxiliary meaning seems to be restricted to VP complements, tend to also require a resumptive yi when their complement is extracted:

(115) Suuruutuu da ya cikaa *(yii) yaa baa su maamaakii chatter that 3sm fill do-VN 3sm give them surprise 'The chattering/complaining he did surprised them'

3.3.2 External Argument

Predicates containing a modal or an aspectual verb plus VP complement can be assumed to assign a compositional 9-role to their subject, as other predicates do.

Examples like that in (116), where the matrix indefinite subject corresponds to the "deep subject" of the weather predicate complement might be argued to suggest a raising analysis.

(116) a. Zaa a faera (yin) iakaa FUTindef begin do-VN wind 'It's going to start being windy'

   b. An daina (yin) sanyii indef stop do-VN cold 'It's stopped being cold'
c. An rage (yin) ruwaas a Raar nan
  indef reduce do-VN water at land this
  'It rains less now in this country'

This analysis would entail a structure with an embedded gerund clause
as in (117a,b), corresponding to (116a):

(117) a. /pr0i zaa a faaraa [I" tI [I` [I Ø] [up yin ruwaal]]

b. /pr0i zaa a faaraa [I" tI [I` [I Ø] [up V_e ruwaal]]

Although (115a) is unproblematic, (115b) is not a well-formed structure
because ruwaal has no Case, in violation of the Case Filter. The Case
assigned by faaraa goes to the head of I", I, where it remains since I
in gerund clauses is empty and empty INFL is not a Case-assigner.

No problems arise on the compositional external 8-role assignment
analysis, assuming that quasi-arguments may bear this 8-role, as seems
reasonable. It follows on this analysis that expletives may not appear
in this position since expletives may appear only in 8'-positions. The
subject position cannot be a 8'-position if auxiliary verbs contribute
an external argument semantic feature, as I have argued here. The
correctness of this predication is illustrated by the unacceptability
of the examples in (118).

(118) a. *Yaa dinga ya fi / fin kyau a zoo
  3am keep-on 3amSUB exceed exceed-VN niceness indef come
d a wurii
  with early
  'It continues to be better to arrive early'

b. *Yaa daina ya kamaataa/ kamaataa a kaawoo shinRaafaa
  3am stop 3amSUB be-necess VN indef bring rice
  'It’s stopped being necessary to import rice'
c. *Yaa faara kamaataa mu Ruble Roofer daa'kii
3am begin be-necessary 1p lock door-of hut
'It began to be necessary to lock the door'

4. Summary and Discussion

In this chapter I have developed an analysis of the continuous aspect marker. Continuous constructions were examined as a case of a surface violation of the one-to-one nature of lexical feature assignment. The surface violation stems from the fact that the CONT INFL may take bare-NP complements, and thus appears to be a feature-assigner, as well as PP and VP complements. The result is, a priori, a situation in which the [NP,PP] or the [NP,VP] has more than one feature-assigner: CONT and V or P.

Evidence was given which shows that surface bare-NP complements to CONT are not NP complements, but rather NP complements of a VP or PP complement to CONT, the head of which may be generated empty. The continuous INFL subcategorizes for [-N]\textsuperscript{max}--i.e. either VP or PP. The evidence for excluding an NP complement to CONT is based on the nonoccurrence of various sorts of NP complements (pro and pronouns), which, if CONT were to allow an NP complement, would be left unaccounted for.

A learnability question arises here. How is the child, who only hears grammatical 'CONT + NP' strings, supposed to conclude on the basis of certain nonexistent 'CONT + NP' strings that CONT does not take a structural NP complement and that surface following NPs are really [NP,PP] or [NP,VP] where the head of PP and VP is null? Since the child cannot reasonably be assumed to have access to negative evidence of this sort, we must assume that there is some deeper
principle which motivates her conclusion.

Suppose that among the principles of UG is a restriction against TNS governing a nominal category ([+N,-V]). Since CONT INFL has the category TNS, then, it could govern only nonnominal categories in principle. The only INFL which takes a true NP complement in Hausa is the copula NEE. Recall, however, that this is precisely the INFL that has no TNS. I will thus assume that there is a principle of this sort, perhaps stated as in (119).

(119) TENSE may not govern a nominal category

Given then (119) plus Case Theory and θ-Theory, exposure to the relevant data leads the child to (98), for the reasons just given.

(120) \[ \text{CONT: } ^{+} \text{[−N]} \]

Violation of Case and θ-Uniqueness is avoided by supposing optional Case assignment, a feature of UG which has independent motivation (cf. Borer 1986), and compositional θ-role assignment, also an independently required property of UG. [ACT-θ], it was argued, unlike other θ-roles, can be borne by a non-nominal category and thus can appear on the VP-complement to CONT, a conclusion which was seen to be further motivated by the syntax of aspecual and modal verbs in Hausa.

The other θ-roles assigned by CONT ([STAT-θ] and [LOC-θ]) behave like ordinary argument θ-roles, in that they are restricted to nominal categories. This means that PP complements to CONT must either have a
null head or an overt head participating in θ-role composition. The
learnability of θ-role composition was explored by examining various
sorts of 'CONT + PP' combinations. It was concluded that direct (i.e.
noncompositional) θ-role assignment is the unmarked case in UG and that
θ-role composition is assumed only where warranted by occurring
structures which would otherwise present a violation of θ-Uniqueness.
θ-role composition is thus learned individually for given θ-markers and
given θ-roles.

The analysis of the continuous aspect marker and continuous
clauses summarized here allows for an explanatory account of the
ungrammaticality of a null complement or a pronoun complement to CONT
and the grammaticality of an unspelled-out VP trace complement to CONT
(versus its ungrammaticality in other aspects).

An essential part of our analysis has been the positing of a base-
generated empty V and empty P. What makes a Ve or Pe possible, and,
how is their occurrence constrained? Since lexical insertion is
optional in the GB model of UG, Ve and Pe are possible for the same
reason any other category is: lexical insertion has not applied. As to
how the distribution of Pe and Ve is constrained, presumably Pe and Ve,
like other empty categories, may occur only where their content is
recoverable—i.e. only where they may be identified. In chapter 3, the
sanctioning of null feature bearers was explored. This was taken to
involve identification of the minimal features necessary for a category
to bear θ-role and Case. These minimal features were taken to be phi-
features (person, number, and gender features). Ve and Pe are null
null feature-assigners. Their essential function of feature-assigner
is to permit the assigning of lexical features to an argument. If a feature-assigner is null, and thus has no features to assign, there minimally must be an overt feature-assigner "around" which assumes this function and which thereby identifies the null feature-assigner.

Suppose, that is, that empty feature-assigners must be governed, at least at S-structure, by an overt feature-assigner. Bare NP complements appear only with a CONT tensed INFL because only CONT is a feature-assigner, and, thus, only in the continuous can an empty V or empty P be sanctioned.

Support for the restriction of empty feature-assigners to positions in which there is a local overt feature-assigner is to be found by examining the other context where V may be null in Hausa. V may be empty, in Standard Hausa, when either the clause is in the continuous, or when there is a following dative/benefactive, headed by the indirect object marker wa/ma (cf. section 4.2 of chapter 2), in any aspect:

(121) a. Waa (yi) wa Ali aikii
    1sPERF do to A work
    'I did work for Ali'

    b. An (yi) massa haifuwa [Abraham 1959:151]
    indefPERF do to-him birth
    'A child was born to him'

    c. Zai (yi) massa taimakoo [Abraham op. cit.]
    3sFUT do to-him help
    'He will help him'

Though a rule deleting yi in front of wa/ma would constitute an accurate description of the facts, this would not explain why yi may be deleted only before a dative or after a CONT INFL, but never anywhere
else. If, on the other hand, we say that $V_e$ may be generated empty in Hausa, and, that UG requires empty feature-assigners to be sanctioned by the presence of a local overt feature-assigner, then it follows that $V_e$ may occur only in the continuous or before a *we/*ma since these are the only contexts in which $V_e$ would have a local feature-assigner—namely, CONT and *we/*ma, the dative marker.

Summarizing, the child learning Hausa is forced by the data, given UG (including (119)), to conclude that there may be a $V_e$ in continuous constructions. Once the possibility of $V_e$ is established, the child may assume that it is possible anywhere there is a local overt feature assigner, as in the dative construction. The possibility of null feature-assigners, thus, like null feature-bearers is established category by category, on the basis of positive evidence. In Hausa, $V$, and I (and certain Na) may govern a *pro, and $V$ and P may be generated null. Both *pro and empty feature-assigners are subject to recoverability, though, and thus must be identified, a condition which limits their actual distribution.
CHAPTER FOUR NOTES

1 See also Bagari (1971) for additional arguments that secondary VNs behave like other NPs, whereas primary VNs do not.

2 Parsons (n.d.a:20) entertains the possibility of classifying primary verbal nouns as verbs, after noting certain of their verbal properties. He rejects the idea though because, if the continuous marker is analyzed as a "verbal", then in the progressive there would be a combination of two verbal elements (the continuous marker and the primary verbal noun), a situation that does not occur elsewhere in the language, according to Parsons. If, alternatively, the continuous marker is assumed to be part of the person-aspect marker, Parsons continues, their use in non-verbal contexts "is very difficult to explain".

Given the overwhelming syntactic, morphological, and semantic evidence that primary verbal nouns are verbs, it seems to me preferable to seek analyses for the difficult-to-explain contexts.

3 Some informants allowed the pronominal and aspectual markers of future and habitual INFLs to be separated in this way by an adverbial particle:

(i) a. Zaa maa ya tafi Kanoo  (cf. Zai tafi Kano)
    FUT PRT 3sm go  K
    'He will go to Kano'

    b. Ya koo/dai kan tafi Kanoo  (cf. Yakan tafi Kano)
    3sm PRT PRT HAB go  K
    'He goes to Kano'

And, for some speakers, the negative particle could be separated from the rest of INFL by an adverbial particle:

(ii) a. Ba maa ya fa'daa wa maa tarsa ba  (cf. Bai fa'daa wa ...)
    NEG PRT 3sm tell to wife-his NEG
    'He didn't tell his wife'  

    b. Baa maa yaa fa'daa wa maa tarsa  (cf. Baa yaa fa'daa wa ...)
    NEG PRT 3sm tell to wife-his
    'He doesn't tell his wife'

These facts, in comparison with those discussed in the text, would seem to indicate that these elements cliticize only at PF--i.e., they are not syntactic clitics.
R. Schuh has pointed out (p.c.) that the extraposition of S' in examples like this is made clear by the fact that the verbal noun vii may not take na-insertion in this environment, as non-Case-assigning verbal nouns normally can when taking an S' complement (cf. chapter 2, section 3).

It is not so easy to demonstrate that PPs extrapose, though I do not think there is any evidence against a PP extraposition analysis either. Canonical dative structures in Hausa have the order 'V na NP NP' (cf. section 4 of chapter 2). The order 'V NP PP' is possible, but, for most speakers the preposition is in this case ga, wa being the affixal form of the preposition, and this order does seem to be restricted.

Extraposition of the indirect object PP is compatible with an analysis of datives involving incorporation of the preposition wa with the verb, as in Tuller (1964), if incorporation is free to apply either before or after 'Move-a'. Assuming this, then the fact that 'V NP wa NP' is normally not possible is not an argument against extraposition of (wa NP) since the restriction on wa can be taken to be a requirement that wa be attached to a verb at S-structure.

An argument based on auxiliary verb selection ('have' or 'be') in compound tenses and one based on topicalization of V plus its passive subject are also given. Since Hausa has no syntactic passives and no equivalent to auxiliary selection, these are not possible points of comparison and thus the arguments are not presented here. Interested readers are referred to the work in question.

It can be noted that there is no historical evidence for naa having ever been a verb either. No other Chadic language has a verb 'be' nor is a verb of any kind required in other Chadic languages where naa occurs in Hausa. See Newman and Schuh (1974) for discussion of the historical development of naa.

The copula née/ce, which may take an NP-complement, was argued in 9.3.2 of chapter 1 to be a defective INFL, having no Tense node.

Gregersen's wi-Deletion rule (p. 56) collapses (54) with a rule deleting wi before the indirect object marker wa/mg. See section 4 of chapter 2 and the final section of this chapter for discussion.

It should be noted that the situations described here, schematized in (i) and (ii), are to be distinguished from a VP which is empty as a result of movement of V and movement of an NP complement. In this latter case, illustrated in (iii), both empty categories are indexed and thus the empty VP may be subanalyzed.
(i) [vp [v e] [np pro]] (= (63b))

(ii) VP₁ ... [vp₁ e] (= (64) prior to trace spell-out)

(iii) NP₁ V₁ [vp t₁ NP₁]

The situation in (iii) arises in Spanish (Torrego, 1984), and other languages having both V-Preposing and wh-movement.

10 An account might be imagined which ascribes the ungrammaticality of empty and overt pronoun complements to naa to some constraint against definite complements to naa. This is not feasible because the continuous marker may take other definite/specific NP complements:

(i) Sunaa aikin
   3pCONT work-the
   'They are doing the work'

(ii) Sunaa aikin nan
   3pCONT work-the this
   'They are doing this work'

(iii) Sunaa aikinsau
   3pCONT work-their
   'They are doing their work'

11 See Zubizarreta (1982) for development and discussion of the distinction between argument θ-roles and adjunct θ-roles.

Notice that a compositional θ-role assignment analysis, whereby the θ-role of CONT would be combined with that of V and assigned to [NP, VP], is not feasible here. This is because V may be intransitive and thus there would not always be a θ-role bearer for the compositional θ-role to be assigned to.

12 There seems to be an interesting interaction between extraction out of continuous clauses and relative aspect-marking, if data from one informant can be corroborated (as I believe it can be). For this speaker, extraction of VP from an embedded continuous clause requires a resumptive yi, unless the continuous INFL is in the relative form. Compare (i), where the embedded CONT is in the relative form (SUKEE), with (ii), where it is in the nonrelative form (SUNAA):

(i) [Karanta ści ści aani] yi ce SUKEE (yii)
   read-VN Koran 3sm say 3pREL CONT do-VN
   'Reading the Koran he said they do'

497
(ii) Keranta Rur’anii) ya ce SUNAA *(yii) read-VN Koran 3sm say 3pCONT do ‘Reading the Koran he said they do’

These facts, at first glance, seem to suggest that CONT is not in fact a proper governor. It might be argued, for example, that surface ‘SUKEE e’ is actually the result of phonological elision of yii, a process which does occur between INFL and vi (cf. vaa vi ‘3amPERF do’ ‘vai ‘3amPER-do’). However, this seems unlikely. Vi-Elision is normally impossible when vi immediately precedes a trace (see Tuller, 1982b); yet, it is possible to have ‘SUKEE e’ in this environment:

(iii) Meei SUKEE yii ti what 3pREL CONT do-VN ‘What are they doing’

(iv) Meei SUKEE ti ‘What are they doing’

Moreover, SUKEE occurs with extraction of an adjunct, where there is no vi at all (in the intended meaning):

(v) Inaa1 SUKE (*yii) ti where 3pREL CONT do-VN ‘Where are they?’

And, the same restriction on the embedded CONT INFL found with extraction of VP (cf. (ii)) is found with adjunct extraction: the nonrelative form is excluded with a trace:

(vi) Inaa1 Ali ya cee SUKE */SUNAA ti? where A 3sm say 3pREL CONT 3pCONT ‘Where did Ali say they were?’

The facts of (i) - (ii) and (v) - (vi) might be taken to indicate the following: 1) non-argument traces (= traces of adjuncts and VPs) require antecedent government by a coindexed local COMP, 2) a COMP coindexed by successive cyclic movement entails relative aspect marking, and (therefore) 3) relative aspect marking is a manifestation of movement through intermediate COMPs. The implications of (1) - (3), which await wider data collection, will not be explored here.

13 The future INFL is almost certainly of paraphrastic origin, as has been often noted. The form zaan seen in the examples in (73) most probably comes from a form of the verb ‘go’ which has been reanalyzed as an aspect-marker for futurity. See Newman and Schuh (1974:35) for discussion.

14 It can be noted that “bare-NP” complements to CONT might in principle be ambiguous as to the 9-role they carry. This plus the fact
that the difference between, for example, ACTIVITY and STATE is slight means that some NP complements do in fact seem to be able to be analyzed as either [Pe NP] or [Ve NP]. A case in point is that of NP complements like garki, yaaroo, etc., which, in the continuous mean something like 'playing the role of emir/child/' or 'being in the condition of being an emir/a child'. There seems to be variation in the analysis speakers (dialects??) give to these strings. Parsons (n.d.a) gives

(i) A yaaroo nake a lookacin
    at child laREL CONT at time-the
    'A child was I at the time'

which would seem to suggest a '[pp Pe NP]' analysis of the non-focussed version, given in (ii):

(ii) Inaa yaaroo a lookacin
    lsCONT child at time-the
    'I was a child at the time'

(i) is rejected by some of my informants, though, suggesting that '[vp Ve NP]' may be their analysis of (ii). See section 2.5.4 for more discussion of the ambiguity of 'CONT + NP' structures.

15 See Ma Newman (1983) for discussion of diachronic and synchronic processes of formation of adverbs from nouns in Hausa.

16 Da may also be "incorporated" and "stranded" in this fashion in certain verb grades (cf. Tuller 1982b for discussion) and in a few isolated expressions such as 'Barkaa (da)' = 'Greetings!' (cf. 'Barkaa da aikii' = 'Greetings on your work'; 'Barkaa da raanaa' = 'Greetings in the sun', etc.).

17 Interesting data in Dogondoutchi Hausa reported in Gouffé (1968/69) could be taken as support for (97a). In this dialect, ga has become the equivalent of [I KEE] in Standard Hausa and [I KA] in other Western dialects--i.e. the form used with Ø AGR and a following VP.

18 My Western Hausa informant is very clear about using only SUKE, and never SUKA (=Standard SUKEE) with all PP complements, whether P is overt or not.

19 We might assume, for example, that the Canonical Structural Realization of [ACT-Ø] is NP/VP. See Rochette (in preparation) for pertinent discussion.
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