

Adjunction in Arabic, Case and Chain Theory

by

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Abstract

In this thesis, I investigate constructions involving adjunction in Arabic within the theory of Principles and Parameters as synthesized in Chomsky (1981) and further developed in subsequent work.

I propose that the direction of Case-marking for all lexical and non-lexical categories in Arabic is uniformly rightward, corresponding to the head-initial parameter of \bar{X} -theory. Although Arabic clauses are uniformly verb-initial at S-structure, I argue that the verb originates in VP at D-structure, and moves out of VP to COMP in the mapping from D-structure to S-structure. Thus, nominative, accusative and genitive Case are assigned by a head to its complement only when the head precedes its complement. Assuming that V-movement must obey the Head Movement Constraint, the verb first must raise to the intermediate head position in inflection; then the verb plus inflection moves together to comp. This derives the surface constituent VSO order of Arabic.

Constructions involving adjunction are structures in which an NP bears a government relation to a head to which it bears no thematic relation. They include Left-dislocation, Wh-questions, Topicalization, Exceptional Case-marking, and Non-thematic Subjects. Important principles of Universal Grammar appear to be violated in these constructions. Modifications and extensions are thus required to accommodate these constructions.

The Θ -Criterion which requires every A-position to be assigned a \emptyset -role and every Θ -position to be assigned an argument appears to be violated in Non-thematic Subjects. Since the subject A-position is generated at D-structure by the Projection Principle, that position must be a Θ -position by the Θ -Criterion. My resolution to this paradox is to reduce the first clause of the Θ -

Criterion to the Principle of Full Interpretation (FI), and propose a less restrictive notion of D-structure.

Case theory and the Visibility Hypothesis appear to be violated in the other constructions where an NP in an \bar{A} -position must be Case-marked contrary to the predictions of the theory. I extend the domain of Case requirement to include such positions as well, and reinstate Case as a condition on interpretability that makes all NPs visible not to the Θ -Criterion as standardly assumed but to FI. Given adjoined NPs with Case, the domain of Case theory is not only A-positions, but rather \bar{A} -positions as well. Case and FI thus become intertwined facets of interpretability.

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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
acc	accusative
AGR	agreement
cl	clitic
C/COMP	complementizer
corrob	corroborative
CP	= C" = S'
e/ec	empty category
ECM	Exceptional Case marking
ECM'd	exceptionally Case marked
ECP	Empty Category Principle
EPP	Extended Projection Principle
expl	expletive
f	feminine
fut	future
gen	genitive
gen cl	genitive clitic
I/INFL	inflection
ind	indicative
indef	indefinite
IP	= I" = S
LD	left dislocation
Ld'd	left dislocated
LF	logical form
LF'	stage within logical form
m	masculine
N	noun
nom	nominative
NP	noun phrase

ob cl	cobject clitic
pl	plural
P	preposition
PF	phonological form
PFI	Principle of Full Interpretation
PP	Projection Principle
sg	singular
SPEC	specifier
sub	subjunctive
t	trace
wh	interrogative
V	verb
X^0	lexical category
X^{\max}	maximal projection

1 Preliminaries

The discussion below is intended to introduce the reader to the variety of Arabic under investigation, its main syntactic features and some of the works on this language.

1.1 Transcription and Transliteration Systems

The Arabic data and the Arabic grammatical terms in this dissertation are given in a phonemic system. The Arabic symbols with their phonemic equivalents are given below:

(1)

a. Arabic Consonants:

<u>Arabic Symbols</u>	<u>Phonemic System</u>
ب	b voiced bilabial stop
ت	t voiceless dental–alveolar stop
ط	t̤ voiceless emphatic dental stop
د	d voiced dental–alveolar stop
ظ	d̤ voiced emphatic dental stop
ك	k voiceless velar stop
ق	q voiceless uvular stop
أ	? glottal stop
<u>Arabic Symbols</u>	<u>Phonemic System</u>
ج	ʤ voiced palato–alveolar affricate
ف	f voiceless labio–dental fricative
ث	θ voiceless interdental fricative
ذ	ð voiced interdental fricative
ظ	d̤ voiced emphatic interdental fricative
س	s voiceless dental–alveolar fricative

ز
 ذ
 ح
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 ه
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- z voiced dental–alveolar fricative
- ʃ voiceless palato–alveolar fricative
- χ voiceless velar fricative
- ɣ voiced velar fricative
- h voiceless glottal fricative
- ħ voiceless pharyngeal fricative
- ʕ voiced pharyngeal fricative
- r alveolar trill
- l alveolar lateral
- m bilabial nasal
- n alveolar nasal
- w labial velar
- y palatal glide

b. Arabic Vowels:

Arabic Symbols

—
 ا
 و
 و
 —
 ي

Phonemic System

- a short low back unrounded vowel
- a: long low back unrounded vowel
- u short high back rounded vowel
- u: long high back rounded vowel
- i short high front unrounded vowel
- i: long high front unrounded vowel

Gemination is regularly indicated by identical double consonants (writing the character two times), e.g., tt, dd, ss, etc.

1.2 The Language

The language under investigation in this study is Modern Standard Arabic, a language that has been in use for over fourteen centuries. It is also referred to by some writers as Modern Written Arabic, or Modern Literary Arabic.

Modern Standard Arabic is the uniform variety of Arabic which is used all over the Arabic speaking world in contemporary literary works, as well as in the media, viz. magazines, newspapers, radio and television broadcasts, business, personal letters and in some songs. It is also used as the medium of oral communication on the stage, in formal and semi-formal speeches, such as sermons in mosques, public and university lectures, conferences and in scientific and literary debates. Moreover, it is used as a medium of instruction at all levels of school education.

Classical Arabic is the revered language of the Holy Qur'an, the prophetic tradition *hadi:Θ* , and medieval literature. It is also the language of pre-Islamic and early Islamic poetry (sixth–eighth centuries A.D.), literature, philosophy, theology and sciences. It is the language that was spoken throughout the Arab Peninsula with some dialectical variation during the sixth, seventh and eighth centuries A.D.

Arab children begin formally learning Standard Arabic at the age of five or six. By this time, they are already saturated in the language through news broadcasts, different types of programmes, debates and songs. Moreover, they communicate orally in this language in all formal and semi-formal contexts. These factors, coupled with the fact that many processes of the standard language are equally shared by the spoken dialects, qualifies any Arab with a reasonable amount of formal instruction in Standard Arabic as a native speaker of the language.

Except for a few examples, the data analyzed in this study are not taken from any particular written source. The author, as a native speaker of the language, born, raised and educated in Iraq has, by and large, supplied the data introspectively. As is generally the case, however, native speakers' judgments, as a test for grammaticality, do not seem to be always reliable because, except for the clear-cut cases, native speakers' judgments are often insecure and changeable. Therefore, to determine the degree of grammaticality, the author has considered the judgments of a number of other native speakers on some of the data which he produced from his own introspection. The other native speakers' consulted are: Mrs. Nagat Elesseily from Egypt, who received a Master's degree in Linguistics from the University of Ottawa; Mr. Muhammad Ezroua from Morocco, who is currently working on his doctorate in Comparative Literature at the University of British Columbia; Mrs. Nawal Sharif from Baghdad, who received a B. A. honours from the University of Baghdad, and worked as a high school teacher of Arabic in the city of Baghdad; and finally, Mr. Ra'ad Sharif from Baghdad, who received a Master's degree in economics from the University of Ottawa. All these consultants have a deep knowledge of Arabic since they were born and educated in their respective countries.

In this work, I shall simply use the term *Arabic* in the sense of Modern Standard Arabic. Where it is necessary, however, I shall make specific reference to Iraqi Arabic.

The next section deals with works related to the study of Arabic linguistics that are done mainly within generative grammar¹.

¹ The other major body of literature relevant to the student of Arabic linguistics is that of the traditional Arab grammarians. Historically, Arabic is one of the languages that have been studied most since the beginning of the seventh century A.D. The codification of classical Arabic took place at the hands of Muslim grammarians in the eighth century A.D.. To cite a few of them: Al-Khalil Ibn Ahmed Al-Fara'hidi, who died in the year 786, and who was aptly

1.3 Related Works

There are several dissertations that have been written on different aspects of Arabic syntax. Most of these works use one form or another of the transformational model of the Standard Theory and the Extended Standard Theory. Some of these dissertations include Awaad's (1973) *Relativization and Related Matters In Classical, Modern Standard and Palestinian Colloquial Arabic*, Bakir's (1980) *Aspects of Clause Structure: A Study In Word Order Variation In Literary Arabic*, Jelinek's (1981) *On Defining Categories: Aux and Predicate in Colloquial Egyptian Arabic*, Snow's (1965) *A Grammar of Modern Written Arabic*, Salih's (1985) *Aspects of Clause Structure in Standard Arabic: A Study in Relational Grammar* and Suaieh's (1980) *Aspects of Arabic Relative Clauses: A Study of the Structure of Relative Clauses in Modern Written Arabic*. Bakir's dissertation, which was written in (1979) and published (1980) by the Indiana Linguistics Club, deals with various aspects of word order in Standard Arabic. Awaad deals with relativization and related issues in Standard and Palestinian Arabic. Similarly, Suaieh presents a detailed investigation of relative clauses in Standard Arabic within the EST model.

The above cited works will not be directly relevant to this study, since they use theories that employ construction-specific transformations, or deal with some aspects of Arabic syntax that are not of great concern to us here; hence they will only be referred to where appropriate.

described as the unmatched genius of the Basra school of Arabic grammar. His disciple Sibawayh, died in the year 793, wrote *Al-Kita:b* 'The Book' in the city of Basra towards the middle of the eighth century. *Al-Kita:b* is recognized in both modern and ancient sources as the most valuable grammar of Arabic for its thorough descriptions and its lucid explication of the syntax, semantics, phonology, morphology and phonetics of the Arabic language. It is the foundation on which practically all the Arabic grammatical tradition rests.

Later Medieval Arab grammarians maintained and enriched this grammatical tradition initiated by earlier grammarians. The result was an enormous output of linguistic analysis.

Another valuable source of information on various aspects of Arabic linguistics is *Readings in Arabic Linguistics*, edited by Al-Ani (1978). This reference contains numerous articles on the syntax, phonology, and morphology of the Arabic language written within both traditional and generative frameworks. Two works in particular deal with the phonology of Arabic. These are Michael Brame's Ph.D. dissertation: *Arabic Phonology*. (1970), MIT, and Abbas Rahim's Ph.D. dissertation: *The Phonology of Spoken Iraqi Arabic From The Functional Point of View*. (1980), The University of Leeds.

Among the traditional works on Arabic done by European Arabists is Wright's (1975): *A Grammar of the Arabic Language*, first published in (1874). Wright's book is a translation from German of Caspari's work, and is based on the insights of the traditional Arab grammarians.

More recent work on the syntax of Arabic is Elesseily's (1985) M.A. thesis, written within the Government-Binding Theory. This work looks at extraction of subjects out of embedded clauses. Elesseily argues that the D-Structure of Arabic is SVO, VSO being derived by raising V and adjoining it to S at S-Structure. V takes the agreement element (AGR) along with it since the latter, being an affix, needs to be supported. I share with Elesseily the idea that the VSO order is derived from a D-Structure SVO by V-raising; but I differ with her in a crucial point, that is, V is not adjoined to IP, rather it moves to INFL to form the inflected verb V_1 , and V_1 subsequently moves to COMP (C), yielding a VSO order at S-Structure. In fact, given the framework that I will assume in this dissertation—namely, the *Barriers* framework (Chomsky 1986b), V, being a head of VP can only move to a head position, such as INFL head of IP (=S) and then possibly to C head of CP; it can not be adjoined to a maximal projection, such as IP. Head movement will be dealt with in chapter 2 on word order.

1.4 Summary of Section 1

This preliminary section was an introduction to the language under investigation. First, it defined what variety of Arabic is being investigated, and then it cited some of the works on various aspects of Arabic, conducted within different theoretical frameworks.

1.5 Introduction to the Thesis

This thesis is composed of seven chapters which are organized as follows.

1.5.1 Chapter 1

The first chapter presents the theoretical framework on which this study is based: the theory of Government and Binding, outlined in Chomsky (1981, 1982, 1986). Linguistic theory, as it is conceived here, includes a highly structured theory of Universal Grammar (hereafter, abbreviated as UG), rather than construction-specific rules. This permits great simplification in the grammar, and generalization of the grammar across languages. In this conception, UG consists of various subsystems: \bar{X} -theory, government theory, binding theory, Case² theory, Θ -theory and bounding theory. In addition there are certain overriding principles, such as the Projection Principle, the Extended Projection Principle and the Principle of Full Interpretation.

1.5.2 Chapter 2

This chapter argues that Arabic is SVO at D-structure. The S-structure VSO order is obtained by head-to-head movement, as in Chomsky (1986b); V which heads VP moves to INFL, head of IP, forming the inflected verb V_1 , and V_1

² Henceforth, the word *Case*, when used in its technical sense to designate morphological Case and abstract Case, will be capitalized, as has become a common practice, so as to avoid confusion with the word case as "in this case" meaning 'instance', or 'class of examples'.

subsequently moves to COMP, head of CP. This analysis is justified on two theoretical grounds: first, by the necessity of establishing a VP node for a universal definition of government, and, second, by the directionality parameter for government and Case-assignment in Arabic, which applies only rightward. I assume that direction of Case-marking for all Case-marking categories, lexical and non-lexical, is uniformly to the right. If the basic order of constituents in Arabic is assumed to be hierarchical; i.e. identical to that of SVO languages, it would enable us to express grammatical relations and Case-assignment in a universal manner.

1.5.3 Chapter 3

This chapter examines the structure of Left-dislocation in Arabic. It argues against a movement analysis of this construction and in favour of a base-generation analysis. The representative data of this construction are divided into three major sets. The first and second data sets represent Left-Dislocation in non-embedded contexts, and the third represents this construction in embedded contexts.

Unlike other languages, non-embedded Left-dislocation can be introduced by a complementizer in Arabic. For example Arabic may use the complementizer *?inna*, in which case the Left-dislocated NP appears with accusative Case; otherwise, where no complementizer occurs the non-embedded NP always bears nominative Case. Section (3. 16) argues that, while the nominative Case is a default Left-dislocation Case, the accusative Case is assigned by *?inna* under government.

As for the D-structure position of the Left-dislocated NP, it will be argued that it is an \bar{A} -position adjoined to IP or to CP, and in some cases to both simultaneously in the same clause. Section (3. 9) argues that the feature [+/-

specific] is the relevant feature characterizing Left-dislocated NP's; definiteness being an instance of specificity.

Since the position in which a Ld'd NP appears is an \bar{A} -position to which no Θ -role can be assigned, the NP cannot be interpreted thematically. However, the NP needs to be interpreted, as required by the Principle of Full Interpretation. Section (3. 8) proposes an approach where the interpretation is effected at LF in terms of predication by coindexing with a Θ -position (Θ -linking). As further cases of Left-dislocation are considered in chapter 5, the predication approach will be extended in that chapter to include Θ -linking and "aboutness relation" with the rest of the sentence.

1.5.4 Chapter 4

This chapter examines the properties of constructions produced by move- α . These constructions are wh-questions and Topicalization. Both of them may use the clitic strategy. First, it will be shown that the two constructions with their two versions: clitics and no-clitics are governed by Subjacency, concluding that their derivation is the product of move- α , rather than base-generation.

Wh-elements move to the specifier position of CP [SPEC, CP], a position assumed to be reserved for wh-operators. This presumably follows from general conditions on LF interpretation, requiring that a wh-operator appear in the clausal specifier position to have scope over the variable, which it must bind. Section (4. 8.3) argues that the S-structure position of topicalized NPs is a position adjoined to IP and is thus an \bar{A} -position. Like wh-elements, topicalized NPs must bind a variable for purposes of interpretation at LF.

Based on extraction possibilities, this chapter presents arguments for the principles of Case inheritance and Case conflict. A lexical NP³ in a Caseless position (a position that is not able to get Case by direct assignment) can pass the Case Filter if it is in a chain that contains a Case-marked element. As a property of chains, Case is inherited not only across A-chains (chains headed by an element in an A-position), as it is generally assumed, but also across \bar{A} -chains (chains headed by an element in an \bar{A} -position). This, I will motivate by the fact that the Case-marking of wh-moved and topicalized NP's is tightly bound to the Case of the NP from which extraction takes place. Put differently, the extracted element bears the Case of its extraction site.

The principle of Case conflict rules out structures in which an NP receives two Cases, whether different or identical, from two different sources.

The following sections present arguments for Case and mood adjacency. Case-assignment and mood-assignment are seen as being parallel in that the element assigning the feature Case/mood must be adjacent to the element to which it assigns that feature. It will be shown that the ungrammatical cases are precisely those which violate this adjacency condition.

1.5.5 Chapter 5

Chapter 5 turns to Exceptional Case-marking (ECM) and to the constructions of non-thematic subjects. It begins with a brief discussion of ECM structures in English, which are then contrasted against those of Arabic cases of ECM in an attempt to show that Arabic cases are not string vacuous, and that Arabic allows ECM to non-subject NPs.

The first sections argue that ECM structures are distinct from Left-dislocation in embedded environments. ECM will be compared to embedded

³ "Lexical NP" simply means an NP that is assigned phonetic features in the lexicon.

LD and topicalization with a view to specifying the common properties of the three structures. It will be seen that they show the productive use of \bar{A} -adjunction sites that are available to Arabic as follows: IP and CP adjunction sites are the regular locus of Left-dislocated NPs; IP adjunction sites are the regular locus of topicalized NPs, and CP adjunction sites are the regular locus of exceptionally Case-marked NP's (ECM'd NPs), a position distinct from the specifier position of CP. All these NPs directly receive Case from an element from which they do not receive a Θ -role

ECM structures are defined as those structures in which an argument from within the embedded clause comes to act grammatically in ways similar to those of matrix objects. For example, the ECM'd NP can undergo object referring rules in the main clause, such as passivization, reflexivization and agreement. Following Al-Bayaty (1984), and Massam (1985), I will suggest that the ECM'd NP in Arabic is base-generated in a position adjoined to CP [α , CP]. By being in this position, the particular NP is forced to behave as the grammatical object of the higher verb since it is governed and assigned Case by the governing verb. Based on the binding theory, it will be argued that the position [α , CP] is a governed position.

Next, I turn to the question of how the ECM'd NP, being in a $\bar{\Theta}$ -position, is interpreted and, thus, licensed. I argue for an approach which unifies both ECM and Left-dislocation with respect to interpretation and licensing. This is an extension of the predication approach suggested in chapter 3 to account for the coreference relation between the Ld'd NP in matrix and embedded clauses and its Θ -pronoun. I will propose that both ECM'd NPs appearing in the adjoined position [α , CP], and left-dislocated NPs appearing in the adjoined positions [α , CP] and [α , IP] are interpreted either by deriving their Θ -reference

by Θ -linking (coindexation with an embedded Θ -pronoun), or by an "aboutness relation" with the rest of the sentence, involving no Θ -linking.

As stated above, the first sections of chapter (5) examine the phenomenon of non-arguments acting grammatically in ways corresponding to that of objects, or internal arguments. The remainder of this chapter will focus on a similar phenomenon, that of non-arguments acting grammatically in ways corresponding to subjects, or external arguments— hence non-thematic subjects.

The properties of non-thematic subject constructions are identical to those of the Arabic ECM constructions except that the latter involves Case-marking verbs, whereas, non-thematic subject constructions, involve non-Case-marking verbs. I analyze non-thematic subject constructions as involving movement from the \bar{A} -position [α , CP] to an A-position, that of subject. This I will do after discussing briefly the familiar cases of Raising-to-Subject in English.

Then, I compare the Arabic constructions with those of English involving the complementizers *as if*, *as though* and *like*. It is seen that they have similar properties from those of Arabic non-thematic subject constructions. Non-thematic subject NPs in both languages can be coreferential with subjects or objects of embedded tensed complement clauses. The NP in question appears in a $\bar{\Theta}$ -position, that of subject, deriving its Θ -reference by coindexation with an embedded Θ -position.

1.5.6 Chapter 6

In chapter 6, a Case and chain theory is developed which integrates the findings of the thesis. We will see that the Case and chain theory of chapter 1 must be modified and extended to account for the constructions examined in

this thesis. The traditional distinction between A-chains and \bar{A} -chains is maintained and defended within the proposed theory. We see that chains are formed on A-positions and \bar{A} -positions and that they are not necessarily Θ -based, i.e. chains are not necessarily interpreted thematically, as in Chomsky (1981, 1986), Stowell (1981), and Massam (1985), but can be interpreted non-thematically in ways discussed in chapter (5) and (6).

It is generally assumed that Θ -roles are assigned to A-chains and that an argument receives its Θ -role by virtue of being in an A-chain that includes an element in a Θ -position. Under the visibility hypothesis, the Case Filter is directly connected to the Θ -Criterion. The Case Filter is generally viewed as applying only to A-chains due to visibility of Θ -roles in the LF component, since only these chains contain a Θ -position. This reduces the Case Filter to a well-formedness condition on the assignment of Θ -roles at LF.

The constructions discussed in this study (Topicalization, Wh-questions, Left-dislocation, Exceptional Case-marking, and non- Θ -subjects) indicate that the visibility hypothesis in the strong sense, i.e., where the Case Filter is entirely derivable from the Θ -Criterion, cannot be maintained. We see that these constructions include NPs which are not in Θ -chains (as defined in chapter 1), but, in fact, require Case-marking. Topicalized, Ld'd, and ECM'd NPs are in \bar{A} -adjoined positions to which no Θ -role is assigned. Furthermore, there are cases of ECM and LD to be discussed below in chapter 5, (5. 12), where the ECM'd NP and the Ld'd NP are not even coindexed with a Θ -position. Yet, these NPs must be Case marked.

This will lead us to propose that a Θ -interpreted chain is only one of the possible kinds of chains. A chain can be interpreted non-thematically by predication in the sense of the "aboutness relation" with the rest of the sentence,

a relation in which Θ -indexing is possible but not obligatory as in Massam (1985).

Θ -assignment is not always dependent on Case-marking. In other words, within this proposal Θ -assignment is divorced from Case-assignment. The Case Filter is reinstated as a constraint on all aspects of LF interpretation, Θ -assignment being one such aspect. Case is seen as a condition on interpretation at LF, making chains visible – not to the Θ -Criterion, but to the Principle of Full Interpretation, which can be satisfied in a limited number of ways to be discussed in chapter (6). The Case Filter is restated as in (2):

(2) Case Filter:

The head of an A-chain and an \bar{A} -chain (X-chains) must be Case marked (for visibility).

Visibility is modified as follows:

(3) Visibility

An X-chain is visible to the Principle of Full Interpretation if it is headed by a Case-bearing NP, or by PRO.

This is an extension of the traditional visibility hypothesis from being a condition on Θ -role assignment to a broader condition on LF interpretation.

1.5.7 Chapter 7

This chapter is a conclusion to the thesis. It takes stock of some of the theoretical implications and results of of this research for various sub-theories of UG.

Chapter 1

GB Theory: An Overview

Chapter 1 includes an introduction to the theory of Government and Binding, which underlies this thesis. The introduction to the theory, however, is not complete. For further details see *Lectures on Government and Binding* (1981), *Knowledge of Language ...* (1986a), *Barriers* (1986b) and references cited therein.

The discussion here consists of a presentation of the various sub-theories of the GB theory and, where relevant, an analysis of Arabic phenomenon covered by the sub-theory.

1.1 Introduction

1.2 Learnability and Variation

The overall organization of the research program on which this dissertation is based is a highly modular one. It includes a highly structured theory of Universal Grammar (UG) that aims at reducing the grammatical hypotheses that the child's mind must consider in the process of learning his language. The task of the language learner is, in a simplified sense, to fix the value of a restricted number of parameters on the basis of linguistic input from the surrounding speech community.

It differs from its predecessors in that it consists of a heterogenous system of well-formedness principles, rather than a homogenous system of transformations that encode the properties of specific constructions.

To account for the various constructions found in a given language, the earlier works in generative transformational approach⁴ posited different kinds of transformations, including those of the general form given in (1):

$$(1) \quad \text{SD}^5: \begin{array}{ccc} X & Y & Z \\ 1 & 2 & 3 \end{array} \Rightarrow \text{SC}: \begin{array}{ccc} Y & X & Z \\ 2 & 1 & 3 \end{array}$$

The variables in (1) stand for some elementary constituents of a string (e.g. syntactic categories). Those to the left of the arrow limit the contexts where the transformations could apply. Earlier works in the generative model multiplied the number of such specific rules encoding constructions, increased their complexity, particularly in terms of their structural descriptions, their ordering with respect to each other, and their obligatory and non-obligatory character.

Recent developments in generative grammar, and more specifically in the realm of syntax, have shifted the focus from systems of rules to systems of independent, though interacting, principles. The focus is on placing the burden of explanation on general and (ideally) maximally simple principles rather than on construction-specific transformational rules that state the properties of the constructions.

One example of this shift concerns the transformational component. The construction-specific transformations have been reduced to the more general and simpler rule called 'Move- α ' where α stands for any syntactic category and states "Move anything anywhere", or, alternatively 'Affect- α ', which states "do anything to anything." Any category is thus permitted to move anywhere, and over-abundant production is filtered out by principles of other sub-components of the grammar.

⁴ This includes the standard theory and the Extended Standard Theory (Chomsky, 1973, 1976, 1977, and Chomsky and Lasnik, 1977).

⁵ SD and SC abbreviate structural description and structural change, respectively.

The natural question to ask now is what are the reasons that sparked off this new direction, namely, the shift in focus to general principles? What are the reasons for the proposal that specific properties of natural language be attributed to general fundamental principles? The answer to this question is, in part, due to the belief that some crucial aspects of language are common to all human languages. Other reasons are: the complexity of linguistic knowledge and the rapidity with which children attain knowledge of the rich and complex structures and rules of their native language on the basis of "degenerate and deficient data". That is, children acquire a knowledge of their language that goes far beyond what is presented to them by their linguistic community and under circumstances that are far from ideal (lack of direct negative evidence and lack of presorted and perfected data). These considerations have led to the hypothesis that there is some kind of innate knowledge available to the child -- that there is an innate language faculty represented by what is called Universal Grammar (UG).

UG is the language faculty that each human possesses as part of his or her mental equipment at birth — a system of principles common to the human species and available to each individual prior to experience. The task of linguistic theory is to provide an explanation for two intimately related issues: the learner's acquisition of the functioning principles of his language despite a "deficiency of data" (learnability), and to account, at the same time, for the existing and (seemingly tremendous) variation among individual languages.

Consider now how descriptive adequacy is handled in this model. It is posited that UG is a parametrized system composed of a set of universal principles. Each of these principles has associated with it a set of possible values expressing the range within which individual grammars may vary. The task of the language learner consists of fixing the values of these parameters on

the basis of available evidence -- that is, on the basis of linguistic input from the surrounding speech community. One such parameter is null versus non-null argument languages (see chapter 3, section (3.2.2) for some discussion).

Since the goal of linguistic theory is to account for the formal properties of natural language and how the language-learner acquires them in such a short time, a theory of grammar must be general and abstract, and yet restrictive enough to allow for all of and only the possible grammars of natural languages.

One linguistic theory that is making progress towards the ambitious goal of uncovering the properties of UG is the Government-Binding Theory developed in Chomsky (1981, 1986) and related work. Therefore, I have chosen this theory in my analysis of Arabic syntax.

1.3 Modularity

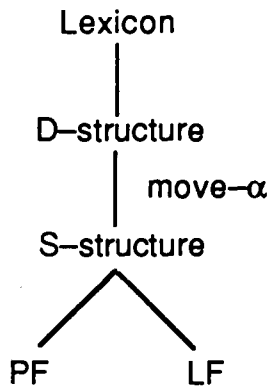
The GB theory, or, more appropriately the Principles and Parameters approach⁶ is a full-fledged modular theory of UG. It includes highly structured subtheories which themselves contain general principles that are (ideally) simple in form. The (apparently) superficial complexity of grammars results from the interaction between the independent subsystems of principles in UG.

As has already been indicated, the view of language adopted here is distinctly modular. Language is seen as resulting from the interaction of various independent modules of the human cognitive structure, such as perception, pragmatics and the language faculty. The central goal of linguistic research is to uncover the structure of the human language faculty (UG), what one must know in order to learn a language, what one knows when one knows a language, and what the range of possible human languages is.

⁶ Chomsky (1988) prefers to use the term Principles and Parameters. Since Government and Binding are only two subtheories within UG, the term GB theory attaches undue prominence to these two subtheories.

It is hypothesized that the language faculty can be decomposed into a number of distinct subtheories and subcomponents (levels) that interact in a rather complex way to explain a given linguistic phenomenon. The subtheories will be introduced later; consider in this light the model in (2):

(2)



It is hypothesized that UG includes the levels of representation or subcomponents in (2). The lexicon lists the words of the language; for each word it specifies at least three things: a phonological specification, an indication of its meaning, and the syntactic frame in which it occurs in the structure. D-structures are created by insertion of lexical items into sentential structure according to their lexical specifications. D-structures are then mapped onto S-structures by $\text{move-}\alpha$. S-structures are assigned representations of PF (phonetic form) and of LF (logical form) by rules of these components, including $\text{move-}\alpha$. UG also contains a series of subsystems of principles which specify the properties of the various subcomponents. UG, then, consists of a series of subsystems and of the interaction between principles within these subsystems. The subsystems of principles will be presented and discussed in the remainder of this chapter.

Now, I turn to a presentation of how the model of UG is constructed.

1.4 System of Rules

UG consists of a rule system and a system of principles. The subcomponents of the rule system are:

- (3)
- (A) Lexicon
- (B) Syntax
 - (I) Base component
 - (II) Transformational component
- (C) Interpretive components
 - (I) Phonological form (PF) component
 - (II) Logical form (LF) component

The lexicon specifies the abstract morpho-phonological structures of each lexical item, its categorial and contextual properties; in particular properties such as thematic and selectional specifications.

The base-component generate D-structures (i.e, configurational representations of the grammatical functions (GFs) associated with Θ -roles) by inserting lexical items into structures of a restricted type in accordance with their lexical specifications. The general rule $\text{move-}\alpha$, (α being any set of categorial features), maps D-structures onto S-structures in which GFs are once again configurationally defined. Consider the instances of $\text{move-}\alpha$ in (4b and c):

- (4)
- a. ?ɑʃtɑy-tu Hind-an Χɑ:tɑm-an
 gave-1sg Hind-acc ring-acc
 "I gave Hind a ring"
 - b. mɑ:ʒɑ;_i ?ɑʃtɑy-tɑ Hind-an [_{NP} θ_i] ?
 what gave-2sgm Hind-acc
 "What did you give Hind?"
 - c. Χɑ:tɑm-an_i ?ɑʃtɑy-tu Hind-an [_{NP} θ_i]
 ring-acc gave-1sg Hind-acc
 "A ring_i I gave t_i to Hind"

Both (4b) and (4c) are produced by move- α , resulting in the coindexation indicated.

In (4b) move- α places the wh-element *ma:ða:* 'what' in the specifier position of CP. In (4c) it adjoins the element *ða:tam* 'ring' to IP, resulting in Topicalization.⁷ This process is indicated in (5):

(5)

- (a) $[_{CP} \text{ ma:ða:}_i [_{IP} \text{ ?aʕtay-ta Hind-an } [_{NP} e_i]]]$
 what gave-2sgm Hind-acc
- (b) $[_{IP} \text{ } \overline{\text{ða:tam-an}}_i [_{IP} \text{ ?aʕtay-tu Hind-an } [_{NP} e_i]]]$
 ring-acc gave-1sg Hind-acc

The two moved elements are coindexed with and c-command the empty element $[_{NP} e]$.

Move- α also produces the structure in (6). $[_{NP} e]$ in (4), however, is distinct from $[_{NP} e]$ in (6) in that the latter is an anaphor:

- (6) *duriba Zayd-un*_i $[_{NP} e_i]$
 was hit Zayd-nom

In (6) the antecedent of $[_{NP} e]$ *Zayd* occurs in an A-position, that of subject; whereas, in (4b), the antecedent of $[_{NP} e]$ occurs in an \bar{A} -position, that of a specifier of CP (5a). In (4c) it also occurs in an \bar{A} -position, but is adjoined to IP (cf. 5b), so in (6) the $[_{NP} e]$ is A-bound, while in (4b, c) it is \bar{A} -bound. If the antecedent occupies an A-position, we speak of A-binding. In contrast, if the antecedent is in an \bar{A} -position, we speak of \bar{A} -binding. The wh-phrase in (4b) and the non-wh-phrase in (4c) are in \bar{A} -positions from where they \bar{A} -bind their trace $[_{NP} e]$, while the NP *Zayd* in (6) A-binds its trace.

⁷ That Topicalization in Arabic is a process of adjunction to IP, rather than to other nodes such as CP, will be argued for in section (4.8.3) below.

At S-structure an element bearing a Θ -role may move to a $\bar{\Theta}$ -position leaving trace(s) coindexed with its/their antecedent(s), as in (6) above and as in the following:

- (7)
- a. *bada:* *ʃamrun_i* [_{AP} *t_i* *safi:dan*]
 appeared *ʃamr* happy
 "ʃamr appeared happy"
- b. **?ara:da* *ʃamrun_i* [_{AP} *t_i* *safi:dan*]
 wanted *ʃamr* happy
 "*ʃamr wanted happy"

- (8)
- a *Bill_i* seems *t_i* to have addressed the audience.
 b. **Bill_i* wanted *t_i* to have addressed the audience.

In (7a) the verb *bada:* both fails to assign Case to the subject of the small clause and fails to assign a Θ -role to the subject position. This results in NP-Movement, leaving NP-trace as the subject of a small clause complement. In (7a), the Θ -Criterion defined informally in (9) is satisfied:

(9) Θ -Criterion:

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

The subject of the small clause *t*, which forms a chain with its antecedent *ʃamr*, receives only one Θ -role from the predicate *safi:dan*. In (7b), however, the Θ -Criterion is violated since the NP *ʃamr* moves to a Θ -position; unlike *bada:*, *?ara:da* assigns a Θ -role to its subject position filled by *ʃamr* at S-structure. Another Θ -role is assigned to it by the predicate of the small clause thus, the sentence is ruled out by the Θ -Criterion.

In (8a) although the subject *Bill* is assigned a Θ -role by the embedded VP, it must move to acquire Case. Movement is permitted since the verb *seem* does not assign a Θ -role to its subject. However, movement is not permitted in

(8b) since both the verb *want* and the embedded VP assign Θ -roles; hence both positions must be filled at every level of representation.

S-structures are mapped onto PF by various rules, among them, movement operations, such as affix hopping, some deletion rules and a variety of stylistic rules.

S-structures are also mapped onto LF via the application of further movement rules such as Quantifier Raising (QR), May (1977), the rule assigning scope interpretation to Wh-phrases in situ. Thus, S-structure is an association between representations of form and representations of meaning, although the mappings of S-structure onto PF and LF are independent of one another. The organization of these levels of representation and the relationship among is shown in (2) above.

UG then consists of a series of independent sub-components. It also contains a series of subsystems of principles which specify the properties of the various levels.

1.5 System of Principles

The system of principles constitutes the internal organization of the grammar. The properties of the above levels of representation and their relationship to each other are constrained by further principles which fall into the following subsystems:

(9)

- a. \bar{X} -theory
- b. Θ -theory
- c. Case theory
- d. Binding theory
- e. Bounding theory
- f. Control theory
- g. Government theory

1.5.1 \bar{X} -theory

The relationship between the lexicon and the syntactic levels, in particular the level of D-structure, is one of direct projection from the former to the latter; properties of lexical items, including subcategorization and Θ -marking properties, are projected from the lexicon into syntax, severely constrained by the Projection Principle and the schematic \bar{X} -wellformedness conditions on syntactic trees.

The Projection Principle informally states that lexical properties (Θ -marking and subcategorization properties) are maintained at all relevant syntactic levels which are D-structure, S-structure and LF-structure. Thus, The projection of lexical items conforms to \bar{X} theory (cf. Jackendoff, 1977). \bar{X} -theory radically reduces the class of possible base components. Each lexical category X ($X = N, A, V, P$) heads a maximal projection X^{\max} (X'') consisting of a specifier, \bar{X} , a head X , and the complements of X . X'' is, then, the maximal projection of X , and X is the head of X'' (and of \bar{X}). I use the conventional symbols NP, VP, AP, and PP for the maximal projections of N, V, A and P respectively.

The phrase structure of all categories is specified as in (10):

(10) The \bar{X} -schema:

(i) $X' = X \quad X'''$ (order irrelevant)

(ii) $X'' = X''' \quad X'$

where X''' stands for zero or more occurrences of some maximal projection. The order of complements with respect to the head is subject to parametric variation. Thus in the head-initial setting the complements will follow their head, whereas in the head-final setting the complements will precede their head.⁸

⁸ Koopman (1984) and Travis (1984) suggest that the structural position of the head may not be an independent parameter of linguistic variation, but might reduce to parameters of directionality of Case and Θ -role. In English for example, these parameters coincide since the

Before I proceed, it is important to make the notion of 'specifier' clear. The notion of specifier is strictly a relational one, used as a label for whichever maximal projections happen to appear in a given category as immediate daughters of X". That is there is no node label 'specifier', and the right X" which appears in the \bar{X} -schema (10ii) above is relationally defined as the 'specifier' of X', whatever the node label of the X" might be.

The version of \bar{X} -theory assumed in this thesis is the one developed in Chomsky (1986a, b) where the \bar{X} -system is extended to the non-lexical categories C(OMP) and I(NFL). I consists of tense and AGR(ement) elements. The non-lexical category C takes I(NFL) P(hrase) (= S) as its complement and heads a maximal projection (= X^{\max}) C(OMP) P(hrase). CP has a specifier position into which wh-elements may move. I takes VP as its complement and heads an X^{\max} IP. The specifier of IP is the NP subject of IP. The general structure of a clause thus created will be as in (11):

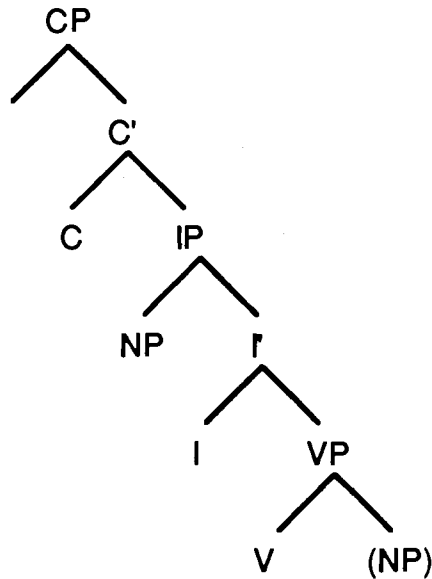
verb assigns both Case and Θ -role to the right. Koopman and Travis cite Chinese as a language in which the two parameters do not converge. In Chinese Case assignment is to the right, but Θ -role assignment is to the left. Under this proposal, a sentence in Chinese is as follows, where the first NP is the subject, the second NP is the object and e is the trace of the object NP:

(1) NP ... e_i V NP_i

To receive a Θ -role, the object NP must be generated to the left of V, and to receive Case it must move to the right of V. One reason for this proposal is that it is only the object that appears in a position to the right of V; all other Θ -marked elements appear in a position to the left of V.

If this analysis is correct, then the question of head-initial or head-final is reduced to other parameters of other subtheories, namely Case theory and Θ -theory.

(11)



1.5.2 Θ -theory

Θ -theory is concerned with describing thematic relations holding between arguments and predicates. A basic principle of Θ -theory is the Θ -Criterion. Informally stated, the Θ -Criterion requires that each argument be assigned one and only one Θ -role and that each Θ -role, determined by the lexical properties of a predicate, be uniquely assigned to an argument. Arguments are elements with referential properties. The notion of argument excludes elements which do not assume a Θ -role such as existential *there* or pleonastic *it* in English and null elements inserted to fill an obligatory syntactic position like pleonastic *pro* in Romance languages. The Θ -Criterion is defined more formally in (12) cf. Chomsky, (1981: 335):

(12) Θ -Criterion:

Given the structure S , there is a set K of chains, $K = \{C_i\}$, where $C_i = (\alpha_1, \dots, \alpha_{n_i})$ such that:

- (i) if α is an argument of S , then there is a $C_i \in K$ such that $\alpha = \alpha_j$ and a Θ -role is assigned to C_i by exactly one position P .
- (ii) if P is a position of S marked with the Θ -role R , then there is a $C_i \in K$ to which P assigns R , and exactly one α_j in C_i is an argument.

The Θ -Criterion applies to the three non-phonological levels of representation: D-structure, S-structure and LF. Grammatical functions (GF's) such as subject of, object of and so on are relevant to the assignment of Θ -roles. At the level of D-structure, where GF's are determined in terms of syntactic configurations under \bar{X} -theory, each complement position is a Θ -position. A Θ -role may also be assigned compositionally by the verb through its VP to the subject position which is not subcategorized by a lexical head. Williams (1980) refers to the first type as internal argument and to the second type as external argument. Consider the following example:

- (13) *darab-a* *Zayd-un* *al-faras-a*
hit-3sg Zayd-nom the-horse-acc
"Zayd hit the horse"

The verb *daraba* heads an X^{\max} VP. It subcategorizes for an internal argument [NP, VP] *al-farasa* and directly assigns it (i.e. under government) the Θ -role of theme. The VP compositionally assigns the Θ -role of agent to the external argument [NP, IP]. The nature of the Θ -role assigned by the VP is determined compositionally by the semantic content of the verb plus its complement. This is shown to be particularly evident in examples like:

- (14) a. *Mary* broke John's arm.
b. *Mary* broke her arm.

In these examples, the nature of the subject Θ -role (i.e. the available interpretation for the subject NP) is dependent on the content of the VP. In (14a), *Mary* is interpreted as an agent, but in (14b) *Mary* can be interpreted either as an agent, in which case *Mary* and *her* are disjoint in reference, or as a goal, in which case *Mary* and *her* are coreferent. It is thus hypothesized that a Θ -role is constructed compositionally from the semantic features of the verb and the complement, and then assigned to the subject.

One of the consequences of the Θ -Criterion, among other principles, such as the Projection Principle and the binding theory, is to exclude strings like (15):

- (15) * raʔa: Zayd-un [_{NP} e]
 saw Zayd-nom
 "Zayd saw"

No empty category can appear in this position. A variable cannot appear since it would not be (locally) bound by an operator. Nor can there be an anaphor in that position since it would lack a local antecedent. Similarly, if [_{NP} e] forms a chain with the NP *Zayd-un* (*Zaydun* _i e _i), this chain would violate the Θ -Criterion since it would contain two argument positions, a subject position and an object position each receiving an independent Θ -role. [_{NP} e] cannot be filled by PRO since it is a governed position, and the presence of PRO in a governed position would violate the requirement that PRO be ungoverned. Finally, [_{NP} e] cannot be filled by the pronominal *pro* either since, although, it would be governed and assigned Case by the verb as required, *pro*'s features of person, number and gender cannot be identified.

Movement from a Θ -position to a $\bar{\Theta}$ -position is blocked since the moved element would acquire two Θ -roles (cf. (7b and 8b) above). NP movement in general is movement to $\bar{\Theta}$ (non- Θ)position. The matrix subject position of a passive construction is a $\bar{\Theta}$ -position since an NP can move into it, as in (16), in which the NP *John* moves from the object position of the passive verb into the subject position:

- (16) John_i was believed t_i to have left.

Now, I turn to an important principle of UG, the Projection Principle.

1.5.2.1 Lexical Features and the Projection Principle

The Projection Principle is closely associated with the Θ -Criterion. It is the hypothesis that categorial structure reflects thematic structure at all syntactic levels. Put differently, it requires that the Θ -Criterion must hold at every syntactic level of representation: D-structure, S-structure, and LF. In other words, it requires that all complement argument positions be projected from the lexicon and be represented uniformly at each level.

By virtue of the Projection Principle, the lexicon plays a central role in determining syntactic representations; it is put forth in Chomsky (1981) as follows:

(17) Projection Principle:

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

Consider first what the lexical properties referred to in (17) include. The lexicon consists of a set of lexical entries containing information that represent what it is to 'know' a word by specifying the phonological, semantic and syntactic features of a given word. Phonological and semantic features allow for phonetic and semantic interpretation of the word respectively. The syntactic features indicate 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 Θ -roles are assigned to these complements. The lexical entry for a verb like *plant*, for example, will express the fact that it is a verb and that it subcategorizes for an NP complement to which it assigns the semantic role of *theme*. What the Projection Principle requires is that lexical information about the verb *plant* be satisfied at all syntactic levels. That is, *plant* subcategorizes

for an NP complement at every relevant level, this complement must bear the Θ -role of theme, etc.

What are the consequences of incorporating this seemingly innocuous principle—namely, the Projection Principle into UG? One desirable consequence is that it considerably reduces the unwanted redundancy between the rules of the categorial component and the lexicon in a grammar of the sort outlined in Chomsky (1965), (1970), Emonds (1976) and Jackendoff (1977). 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 (18) which specify syntactic frames (phrase markers) in which lexical items could appear:

(18) $VP \rightarrow V (NP) (PP) (\bar{S})$

Now, the categorial status and the number of complements of a particular verb is a direct consequence of the Projection Principle. Given the Projection Principle and \bar{X} theory, categorial rules like (18) are largely redundant. The information about the class of subcategorization that is dually represented are eliminated from the categorial component, a highly desirable result for its corresponding implications for the theory of language acquisition.

The ultimate result is to eliminate the phrase structure component entirely, apart from certain parameters of \bar{X} -theory: for example, does the head precede its complement as in English-like languages, so that we have the constructions N-complement, V-complement, A-complement, and P-complement, or does it follow them, as in Japanese-like languages, so that we have the corresponding constructions complement-N, complement-V, complement-A, and complement-P? Subsequent work (Koopman, 1984 Travis, 1984) suggests that the order of complements can largely be determined by other subtheories of UG, in particular Case theory which involves a principle

of Case adjacency requiring that a Case-marked element be adjacent to its Case assigner (with some variations), so that if a verb takes an NP and a PP, the NP must be closer to the verb ("put [the book] [on the table]," *put [on the table] [the book])."

The implications for the acquisition problem appears to be that rules of phrase structure are not among the elements that have to be learned separately insofar as they merely restate once again, in another form, the essential content of lexical entries. Once learners know the subcategorization properties of lexical items, they have the information necessary to know the various syntactic configurations in which that lexical item appears. Knowledge of a language implies knowledge of the fact that a particular verb is a one, two, or three place predicates; verbs like *dream*, *kill*, and *give* are one, two and three place predicates respectively and that they assign respectively one, two or three Θ -roles.

Another important consequence of the Projection Principle is that traces must exist, in order for Θ -role assignment at S-structure to match Θ -role assignment at D-structure. Consider the following:

- (19) a. e was hit John by Bill.
 b. John_i was hit t_i by Bill.

(19a) is the D-structure of the S-structure (19b). Because of the trace at S-structure, the Θ -role assignments are the same in each case even though the NP *John* has moved to its S-structure position, thus allowing the Θ -Criterion to hold at both levels as required by the Projection Principle.

The derivation of the level of LF from S-structure is also constrained by the Projection Principle in the same manner as the derivation of S-structure from D-structure.

Another important principle of UG is the Extended Projection Principle (EPP) (Chomsky, 1982, 1986a). This principle stipulates that the subject position must be obligatorily universally present in a sentence. Following Rothstein (1983), Chomsky (1986a) suggests that EPP can be derived from the predicate–linking rule of Rothstein, which requires that all predicates must have subjects. That is the requirement that the subject position must be syntactically available follows from conditions of well–formedness on predication. In other words, a sentence is well–formed if both syntactic and thematic conditions are fulfilled. Thus, pleonastic elements like *it* appear to provide a formal subject for predicates like *seem*, as in (20):

(20) It seems that Sarah is here.

and weather verbs, which as a lexical property, do not assign a Θ –role to [NP, IP], as in (21):

(21) It snows

In Chomsky (1986a) the EPP is subsumed under the Principle of Full Interpretation (FI), a requirement of UG, specifying that every element that appears in a well–formed sentential structure must be licensed. The licensing options include, among others, the following: an argument is licensed by being in a position to which a Θ –role is assigned, or by participating in a chain whose terminal position is assigned a Θ –role. For a predicate to be licensed it must have a subject, either as an argument or an expletive; and if the predicate assigns a Θ –role as a lexical property, it needs an object as well, so that the object receives that Θ –role.

1.5.3 Case theory

Case theory has direct relevance to the central issues of this research, hence it will receive more discussion here than the other sub-theories. Case theory is concerned with the assignment of abstract Case such as nominative, accusative, genitive. Whether or not these Case features have phonological realization depends on the morphology of the particular language. Though not a lot of work has been done on the relation between abstract Case and morphological (surface) Case, it has been generally argued that the two do not necessarily coincide. It is hypothesized that NPs in All languages have abstract Case, despite the fact that only a subset of languages has morphological Case. Case is assigned or presumably checked ⁹ at S-structure. The linchpin of Case theory is the Case Filter, proposed for UG (Rouveret and Vergnaud 1980, Chomsky, 1981):

(22) Case Filter: *NP if NP has phonetic content and has no (abstract) Case.

The motivation for the Case Filter is extensive. It allows for a characterization of the distribution of lexical NPs and the appearance of semantically empty prepositions, such as *of* in English (23), *bi* 'of' (24) and *li* 'to' (25) in Arabic:

- (23) a. The army destroyed (*of) the city.
b. The army's destruction *(of) the city.

⁹ Case checking says that the Case features of lexical NPs inserted at D-structure are checked at S-structure. This hypothesis is due to Chomsky (1981) that lexical NPs are base-generated with Case features, which are then checked at S-structure by a filter (not to be confused with the Case Filter) to certify that the NPs are in an appropriate context to bear the Case they have acquired in the lexicon.

The Case checking hypothesis, however, does not assume that a lexical NP must have Case. Assuming only Case checking, an NP with no Case can end up in a position at S-structure to which no Case is assigned. The absence of Case features on the particular NP will match its Caseless position, and an ungrammatical sentence, like (1) is generated:

(1) *Mary to leave would be surprising.

(1) is only ruled out by the visibility hypothesis, discussed in sections (1.7.3.3), (5.10) and modified in chapter 6, since *Mary* has no Case, and it is the head of a one link A-chain.

Case in the matrix position as a subject of a predicate *seem* whose INFL contains the features of tense and AGR. Thus, passive and raising fall under the generalization captured by the Case Filter, and no longer need to be distinguished by construction-specific transformations.

The generalization captured by the Case Filter also extends to infinitival clauses. Consider the Case assignment rules proposed in (27) for English:

(27)

- a. NP is nominative when governed by [AGR]
- b. NP is accusative when governed by V
- c. NP is oblique when governed by P
- d. NP is genitive in the structure [_{NP} ___ X]

Rule (27a) accounts for the assignment of nominative Case to the subject of a tensed (finite) clause (in English, [+Tense] and AGR must co-occur in the INFL node), and rule (27b–c) accounts for the assignment of Case to objects of verbs and prepositions respectively, and rule (27d) accounts for the assignment of genitive Case to possessor NPs (I will consider the appropriate formal definition of government relation later).

The Case Filter and (27) predict that NPs may occur as subjects of tensed clauses or as objects of transitive verbs, as (28a) illustrates; though they may not occur as subjects of tenseless clauses, as (28b) illustrates:

- (28) a. Louise doesn't like the Qur'an.
b. *Louise doesn't hope [_{CP} John to read the Qur'an]

Notice that Θ -theory does not rule out (28b), since the subject *John* has a Θ -role assigned to it by its predicate—the infinitival, and *John*'s Θ -role is separate from the one assigned to the superordinate subject. That this is so can be seen more obviously by comparing it with (29):

- (29) It is obvious [_{CP} what_i [_{IP} PRO to do t_i]]

The matrix predicate in (29) does not assign a Θ -role to its subject, as shown by the fact that a non-experiencer expletive *it* appears in this position. On the other hand, the predicate *to do t_i* clearly does have an experiencer subject, symbolized as PRO, though *PRO* has an obviative reading. Therefore, it is the Case Filter which rules out (28b), since *John* is not assigned Case in that position. That the Case Filter is responsible for ruling out the sentence can be seen clearly by the fact that if a prepositional complementizer is available, then the subject of the infinitive will be assigned Case, and the sentence becomes grammatical:

(30) Louise doesn't prefer [_{CP} for [_{IP} John to read the Qur'an]]

Besides the government requirement which plays a central role in the Case-assignment relation, as it does in all sub-theories of UG, it has been argued (Chomsky 1981, Stowell, 1981) that there is also an adjacency restriction imposed on this relation. That is, Case assigners must not only govern the NP to which they assign the Case feature, but be adjacent to them. The adjacency requirement accounts for the respective ordering of the complements in the following examples:

- (31) a. John bought the bone yesterday/for the dog
 b. *John bought yesterday/for the dog the bone

In order to be assigned Case the NP *the bone* must be adjacent to the verb *bought*. When *the bone* is not adjacent to *bought*, the sentence fails.

Several facts in Arabic argue that the adjacency requirement plays a role in Case assignment in Arabic. Three facts are given in (A), (B) and (C) :

A. The occurrence of a corroborative element -- sentence emphasizer -- *la* ,
 boldfaced and glossed in (32) as *corrob*.

(32) danan-tu (***la**)- Zayd-an ya-hlum-u
 believe-1sg corrob- Zayd-acc 3sgm-dream-ind
 "I believed Zayd to be dreaming."

The NP *Zayd* must be adjacent to the verb *danna*, in order to receive accusative Case signalled by *-an*. The sentence with *la* present would not obey this requirement, and thus would be ungrammatical, and vice versa.

B. The occurrence of an expletive *ma:* that appears boldfaced in (33)

- (33) *danan-tu* (***ma:**) *Zayd-an qa:ʔim-an*
 believed-1sgm (expl) *Zayd-acc standing-acc*
 "I believed *Zayd* was standing."

When *Zayd* is not adjacent to *danna*, the sentence fails, as it did in (32).

C. The occurrence of the adverbial *bisurʔatin* 'quickly' between the verb *ʃariba* 'read' and its complement *al-ʕamra* 'the wine':

- (34)
- a. *ʃariba* *ʃamr-un* *al-ʕamr-a* [_{Adv} *bisurʔatin*]
 drank *ʃamr-nom* the-wine quickly
 "*ʃamr* drank the wine quickly"
- b. [_{Adv} *bisurʔatin*] *ʃariba ʃamr-un* *al-ʕamr-a*
- c. **ʃariba ʃamr-un* [_{Adv} *bisurʔatin*] *al-ʕamr-a*

The adverbial can occur in final and initial position in the sentence, but it cannot separate the complement from its head, since it will induce an adjacency violation, and Case cannot be assigned to the complement.

If ordering of complements with respect to their heads can thus be reduced to other sub-theories of UG, then it will ultimately allow for elimination of the categorial component. This is naturally a desirable result, thereby reducing the task of the language learner, while at the same time accounting for the (apparently tremendous) diversity among individual languages.

Notice that the sentences in (32), and (33) can be rescued by the obligatory insertion of *la* and *ma:*, and by the assignment of nominative Case to the NP *Zayd* instead of an accusative Case. The nominative Case surfaces as *-un*, and is printed in *italics* :

(35)

- | | | | | |
|----|-------------------------|-------------------|---------------------|-----------------------------|
| a. | danān-tu
believe-1sg | *(la)-
corrob- | Zayd-un
Zayd-nom | ya-hlum-u
3sgm-dream-ind |
| b. | danān-tu
believe-1sg | *(ma:)
expl | Zayd-un
Zayd-nom | qa:ʔim-un
standing-nom |

Adjacency will be further argued for in chapter 4 and will be extended to cover the domain of mood assignment.

The question to ask now is this: why does the insertion of the elements *la* and *ma:* in (35), in which *Zaydun* has nominative Case save these sentences; whereas, it induced ungrammaticality in (32) and (33)? An answer to the second part of the question is given above in terms of an adjacency requirement on the Case assignment relation. An answer to the first part is given below in terms of the notion "Case conflict". In effect, and in an interesting fashion, the presence of *la* and *ma:* in (35) blocks the assignment of accusative Case to *Zayd* by *danna*, thereby rescuing it from being assigned two Cases — accusative and nominative. The nominative Case could conceivably be assigned by default, or by AGR. Assume for now that it is assigned by default, an assumption to be defended in chapter 3. Before discussing the notion of Case conflict, I introduce the contexts in which Case is assigned in Arabic.

Case is assigned in the following contexts with the requirement of adjacency to the governor:

(36)

- a. NP is nominative when governed by [+AGR].
- b. NP is accusative when governed by V.
- c. NP is accusative when governed the complementizer *ʔinna/ʔanna*.
- d. NP is genitive when governed by N, P.

Since whenever Case is assigned in Arabic it is always realized

morphologically, I need to stipulate that Case must be realized. I thus introduce the Case Realization Condition for Arabic:

- (37) Case Realization Condition (CRC):
Case must be phonetically realized where assigned.

I assume the following definition of 'phonetically realized':

- (38) A Case feature K is phonetically realized if K is assigned (either directly under government, or through inheritance, or by default) to a lexical NP at S-structure¹¹

Every NP in Arabic is morphologically marked for a Case feature¹², which can be illustrated as follows:

¹¹ An argument for the CRC will be developed in chapter (3), (3.16.2) on the basis that an overt clitic is required in contexts where the complementizer *?anna* assigns its accusative Case, and where *?anna* is followed by a VSO word order.

¹² Notice that Case in Arabic does not always have a surface realization, as the following examples illustrate:

- (1)
- a. waqaʔ-a al-fata:-0
fell-3sgm the-guy
"The guy fell"
 - b. qa:bal-tu al-fata:-0
met-1sg the-guy
"I met the guy"
 - c. rakadt-tu maʔa al-fata:-0
ran-1sg with the-guy
"I ran with the boy"
 - d. al-fata;_i darab-tu t_i
the-guy-0 hit-1sg
"The guy_i, I hit t_i"
 - e. al-fata;_i darab-tu-hu_i
the-guy hit-1sg-objcl
"As for the guy, I hit him"

The form of the NP *al-fata:* "the guy" is invariant despite the fact that it is a subject in (1a), an object of a verb in (1b), an object of a preposition in (1c), a topicalized NP moved from a complement position of a verb in (1d) and a Left-dislocated (Ld'd) NP in (1e). This invariability is traditionally termed *bina:ʔ*, and ascribed to *?at-ta:ʔthur* "impossibility for phonological reasons". In other words, the traditional grammarians considered the NP *al-fata:* in the above examples to have nominative Case *rafuʔ*, accusative Case *nasub*, genitive Case *jarr*, an accusative Case inherited from its extraction site and a default Left-dislocation Case respectively, assigned to it by its appropriate governing head *ʔa:ml*.

(39)

<u>Case</u>	<u>Singular</u>	<u>Dual</u>	<u>Masc. pl.</u>	<u>Fem. pl.</u>
Nominative	u (n)	a: (ni)	u: (na)	u
Accusative	a (n)	ay (ni)	i: (na)	a
Genitive	i (n)	ay (ni)	i: (na)	i

1.5.3.1 Case Conflict

It is generally assumed that the notion of Case conflict is a property associated and regulated by the Case Filter. It is the proposal that structures in which an NP is assigned two conflicting (different) abstract Case features are universally ruled out. In other words, the relation between Case assigners and lexical NPs is a unique relation in the sense that there is a one-to-one correspondence between the two.

In English, the only way an NP can move to subject position is if the verb is passivized, and thus no accusative Case is assigned as it is absorbed by the passive morphology, or if the clause is infinitival, and thus nominative Case is not assigned at D-structure. In each instance of movement the requirement of Case uniqueness is preserved.

This uniqueness restriction on the Case assignment relations is analogous to the requirements of the Θ -Criterion, informally stated in (40):

(40) The Θ -Criterion:

- a. Every argument must be assigned a unique Θ -role.
- b. Every Θ -role must be assigned to a unique argument.

Now, suppose that a given NP is assigned nominative Case, Case conflict would arise, and the sentence would be excluded, if the same NP is assigned an accusative Case. This is precisely the situation in the sentences (35a) and (35b), where the Case-assignment requirements—government and adjacency are satisfied; and thus the matrix predicate assigns its Case to the

NP it governs *Zayd* leading to Case conflict since *Zayd* has also received nominative Case from a different source.

Suppose that an argument in a complement position has received an accusative Case by direct assignment, and the same argument were to move to a Case marked position at S-structure. A possible derivation for a D-structure like (41), is to move the NP *alafsalā* 'the honey' and adjoin it to IP, a position directly follows the accusative Case assigning complementizer *?anna* at the S-structure (42):

(41) danan-tu ?anna Zayd-an fariba al-ʔasal-a
 thought-1sg that Zayd-acc drank the-honey-acc
 "I thought that as for Zayd, he drank the honey"

(42)

*danan-tu ?anna [IP al-ʔasal-a_i [IP Zayd-n fariba t_i]
 thought-1sg that the-honey-acc Zayd-nom drank]

How would (42) be ruled out? Suppose that *?anna* is some sort of a prepositional complementizer like *for* in English, and that it assigns accusative Case obligatorily. The movement in (42) would then lead to a situation where the NP *alafsalā* would receive two accusative Cases—one from *?anna* by direct assignment under government at S-structure, and another from its D-structure position as a complement of the transitive verb *fariba*. The structure is then filtered out by Case conflict.

Notice that in order for this argument to go through, I must assume three things:

(43)

- a. The notion of Case inheritance, and that lexical NPs in \bar{A} -position inherit Case in the same way as lexical NP's in A-positions do.
- b. Extending the domain of application of the Case Filter to include lexical NPs in A-positions and lexical NPs in \bar{A} -positions.

- c. Extending the notion of Case conflict to mean the prohibition against the assignment of two Cases whether conflicting (i.e. different) or identical.

This is a cluster of important principles of UG, that will figure prominently in the next chapters. These principles involve primitive relations with an interesting explanatory force, and provide a good illustration of the interaction of the primitive syntactic relations, as they are synthesized within a particular subtheory of UG—namely Case theory. The proposals in (43) will be explicitly developed and more fully argued for in the next chapters, specifically 3, 4, and 5.

1.5.3.2 Case, Chains and Visibility

Chomsky (1981, 1986a) states the Case Filter as a well-formedness condition on chains, where CHAIN is defined as "the S-structure reflection of a 'history of movement', consisting of the positions through which an element has moved from the A-position it occupied at D-structure" (Chomsky, 1986a: 95). The notion of CHAIN includes the vacuous case of the single-membered chain of an element that remains in its D-structure A-position and the expletive ... argument pair.

In (44) the sequence (*John*, t_1 , t_2) makes a chain indicating that movement has been from the position of t_2 to that of t_1 and then to the head position occupied by *John* :

(44) $John_i$ seems [_{cp} t_{1i} to have been hit t_{2i}]

The location of Θ -roles and Case positions within a chain is restricted by the following descriptive condition:

(45) Chain condition (Chomsky, 1986a: 137)

If $C = (\alpha_i, \dots, \alpha_n)$ is a maximal CHAIN, then α_n occupies its unique Θ -position and α_i its unique Case-marked position.

Given that both Case and Θ -roles are assigned to chains, Chomsky (1981, 1986), following essentially ideas by Aoun (1979), suggests that the Case Filter is derivable from the Visibility Condition. It is hypothesized that Case marking makes arguments visible for Θ -role interpretation at LF:

(46) Visibility Condition (Chomsky, 334)

Suppose that the position P is marked with the Θ -role R and $C = (\alpha_i, \dots, \alpha_n)$ is a chain. Then C is assigned R by P iff for some i, α_i is a position P and C has Case or is headed by PRO.

According to (46) an argument must have Case, otherwise it will not receive a Θ -role and will not be licensed; thus the Case Filter is presumed to follow from the Visibility hypothesis. This notion will be discussed and revised in chapter (6), where Case theory and the associated notion of visibility will be extended to cover the constructions examined in this thesis.

1.5.4 Binding theory

The binding theory is the sub-theory which specifies the relationship of anaphors, pronominals, names and variables to possible antecedents within a domain D. The binding principles are stated in terms of a "local domain", in turn defined in terms of X^{\max} and GFs:

(47)

- a. an anaphor is bound in a local domain
- b. a pronominal is free in a local domain
- c. an R-expression is A-free (in the domain of the head of its chain) (Chomsky, 1986a: 166)

where α binds β iff α and β are coindexed and α C-commands β and free means not bound. *Bound* is interpreted as argument bound (A-bound) when the antecedent of an element is in argument position (A-position).¹³

¹³ It is assumed that the A-binding relation is the one that is relevant to the binding principles in (47) in text. This cannot be otherwise if I assume that \bar{A} -bound variables are treated like R-

(48) Local Domain = minimal governing category:

a governing category [for an anaphor or a pronominal α] is an X^{\max} containing both a subject [distinct from α] and a lexical category governing α (hence, containing α). A governing category is a "complete functional complex (CFX) (= domain in which all grammatical functions (GFs) —subject and complements— compatible with the head of α are realized) (Chomsky, 1986a: 169).

The minimal governing category is a governing category α for β such that there is no governing category for β that is included in α

The binding theory accounts for the following:

(49)

a. [_{IP} ya-htarim-u:na_i ?anfus-a-hum_i]
3m-respect-pl selves-acc-them
"Thy respect themselves"

b. *yu-rid-u:na_i Zayd-an [_{CP} ?an [_{IP} ya-htarima ?anfus-a-hum_i]]
3m-want-pl Zayd-acc that 3m-respect selves-acc-them
"They want Zayd to respect themselves"

In (49a) no binding requirements are violated. The local domain, X^{\max} IP of the anaphor *?anfusahum* contains a governor for it, the lexical category V *yahtarim*, and a subject, AGR which surfaces as *-u:* – attached to V. The anaphor is bound in IP, and thus the sentence is grammatical. In (49b), however, the binding requirements for the anaphor are not satisfied, since the anaphor is not bound in its local domain. The local domain of the anaphor is the embedded IP containing a governor for the anaphor and a subject, namely AGR displayed by the embedded V. The CP, intervening between the matrix subject and the reflexive, is a barrier by virtue of dominating a BC, IP. The sentence is correctly barred since the anaphor is not bound by a c-commanding antecedent in the lower IP.

expressions with respect to the binding principles, and are thus regulated by principle (C). Since principle (C) requires R-expressions to be free, it would follow that all variables are excluded by this principle, unless we take 'free' to mean 'A-free', and 'bound' to mean A-bound.

In accordance with the binding theory, the lexical anaphors in Arabic *baʔduhum baʔdan* 'each other', *nafsahu* 'himself' obey principle A, whereas lexical pronouns obey principle B:

(50)

[_{GC}	raʔa: altula:bu	{	ʔanfusahum baʔthahum baʔdan ʔahadahumu alʔaaxar *ʔiyaahum	}	fi lmirʔa:ti]
	saw the students				in the mirror
			{	themselves each other one another them	}

(51)

yuri:du altula:bu;	ʔan	yanjah	{	uu; *ʔanfusuhum *baʔdahum baʔdan *ʔahaduhum alʔaaxar	}
want	the	students	that	succeed	
				{	*themselves *each other *one another *them

(52)

yaʔrifu almudarisuna;	ʔannahum	sayanjah	{	uu _{i/k} *ʔanfusuhum *baʔduhum baʔdan *ʔahaduhumu alʔaaxar	}
know	the	students	that	will	succeed
				{	they _{i/k} *theselves *each other *one another

Generally speaking, then, anaphors and pronominals are in complementary distribution; anaphors may appear in positions where pronominals may not and vice-versa.

I turn now to Principle B of the binding theory. It accounts for the contrast between (53a) and (53b):

A-position) by their operators. Variables share the essential properties of names in that they escape the binding conditions for NP-traces and anaphors.

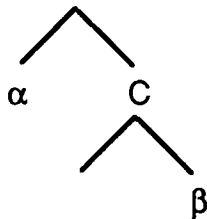
1.5.5 Government theory

The concept of government plays a central role throughout the modules of UG. It is a basic structural notion that underlies many of the subsystems of UG. This concept is relevant to subcategorization, Θ -theory and Case theory. It plays an important role in licensing empty categories in concert with the Empty Category Principle (see below). An example of government relation is the one holding between the head of a projection and its projections. The definition of government assumed throughout our analysis is the one argued for in Chomsky (1986b):

(55)

- a. government (Chomsky, 1986b):
 α governs β iff α m-commands β and there is no γ , γ a barrier for β , such that γ excludes α .

In other words, α cannot govern β in the following configuration where C is a barrier for β and C excludes α :



- b. m-command
 α m-commands β iff β and every γ , γ a maximal projection, that dominates α dominates β
- c. exclude
 α excludes β if no segment of α dominates β

With respect to the notion "segment" in (c), following work by May (1986), Chomsky(1986b: 7) proposes the following:

...in a structure of the form (56), a typical adjunction structure with α adjoined to β , α is not dominated by β ; rather, β consists of two "segments", and a category is dominated by β only if it is dominated by both of these segments:

(56) [β α [β]]

Chomsky introduces the concept "blocking category" (BC), and then defines "barrier" in terms of BC:

b. blocking category (BC):

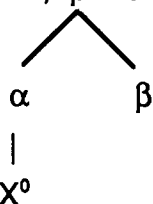
α is a BC for β iff α is not L-marked and α dominates β

c. L-marking:

where α is a lexical category, α L-marks β iff β agrees with the head of γ that is Θ -governed by α .

d. Θ -govern:

α Θ -governs b iff α is a zero-level category that Θ -marks β , and α, β are sisters



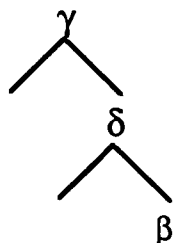
e. barrier:

There are two ways in which a category can be a barrier. First, a category can become a barrier by inheritance when it immediately dominates a blocking category. Second, blocking categories, except for IP (S), are themselves barriers. The two possibilities are given more formally in (i) and (ii) respectively:

γ is a barrier for β iff (i) or (ii)

(i) γ immediately dominates δ , δ a BC for β

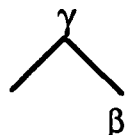
Hence in:



γ will be a barrier for β iff d is a BC for β

(ii) γ is a BC for β , γ not equal to IP [= S]

Hence in:



γ will be a barrier for β iff γ is a BC for β

Immediate domination in (e) is a relation between maximal projections. γ immediately dominates d in (ei) if there is no maximal projection intervening between γ and δ ; so that γ immediately dominates δ even if a nonmaximal projection intervenes between γ and δ .

Chomsky's aim in formulating the definition of government as above is to unify the theory of government and the theory of bounding, the latter being a theory of locality constraints on movement as in (64) below. This is accomplished by appealing to the common notion of barrier which is a syntactic boundary blocking application of certain processes. The presence of a single barrier blocks government of β by α ; the presence of two or more barriers between α and β blocks movement from one of these positions to the other.

Barriers, determined on the basis of L-marking, are relevant for movement. Under L-marking, an X^{\max} γ is a barrier by inheritance or inherently. γ is a barrier by inheritance if the X^{\max} it most closely dominates is a BC; it is a barrier inherently if it is a BC itself.

Barriers are also determined by the Minimality Condition. Under the Minimality Condition, barriers are relevant for the theory of government only, but not for the

theory of movement. The notion of m(inimality)–barrier is defined in Chomsky (1986b):

α is an m–barrier for β iff α includes γ and d where γ is a maximal projection including β and d is a head c–commanding β .

Thus in (57) α does not govern β , which is protected by the projection γ of its governor δ :

(57) ... α ... [γ ... δ ... β ...]

Then in (58) *see* governs *Bill* but not *Tom*, just as a verb governs the specifier of its clausal complement:

(58) They saw [_{NP} Bill's [_N picture of Tom]]

Chomsky (1986b :47) invokes the Minimality Condition to yield the *that*–trace effect, as in (59):

(59)

a. Who do you believe [_{CP} t' [_C e [_{IP} t would win]]]

b. *Who do you believe [_{CP} t' [_C that [_{IP} t would win]]]

In (59b) *t* is protected from antecedent government by C (= *that*), by virtue of the Minimality Condition, but in (59a) this will not be the case assuming that *e* is featureless; and thus does not qualify as an appropriate choice for δ in (57).

The important aspect of the above definition of government in this thesis is that it allows a governor to govern into the specifier position of its complement. If a category α governs a maximal projection X", then α governs the specifier position and the head of X". Thus, a head α governs its complements. I will be concerned with the question of what constitutes a barrier for the purposes of Subjacency defined in (74) below.

Government theory also underlies the Empty Category Principle (ECP), a fundamental principle of UG, which requires every trace to be properly governed. Chomsky (1981) proposes to account in terms of the ECP for

subject–object asymmetries with respect to *wh*–movement, exhibited in English, for example, by the so–called [that – *t*] phenomenon in (60):

(60)

- a. **who*_i do you think [_{CP} [_C *t*_i that] [_{IP} *t*_i left]]
- b. *who*_i do you think [_{CP} [_C *t*_i that] [_{IP} Mary likes *t*_i]]

The subject–object asymmetry is viewed as a consequence of a difference concerning government: whereas the trace *t* in the object position of the verb *like* is governed *like*, hence governed by a lexical category, which counts as proper government, the subject is not.

Subject extraction is possible when the subject is moved to a specifier of CP that contains no other constituent and thus allowing proper government of the trace by its antecedent:

(61):

- a. [_{CP} [*who*_i *t*_i met Bill]]
- b. [_{CP} [*who*_i did you say [_{CP} *t*_i met Bill]]
- c. [_{CP} *man*_i [_{IP} *t*_i taraka almadi:nata]]
 who *left* *the city*

It is assumed that the subject trace in (61) is properly governed by the *wh*–phrase in the specifier of CP by virtue of being coindexed with it.

Chomsky, (1986b: 17) gives the following definition of proper government:

(62) Proper Government:

α properly governs β iff a Θ –governs or antecedent governs β .

In particular, an object NP is always properly governed by the head of the VP, but a subject NP or adjunct can only be properly governed in a chain by antecedent government.

Antecedent government is an instance of government, which is defined in (55) above. Chomsky suggests a reduction of proper government to extended

chain links, eliminating Θ -government. He suggests the following formulation of antecedent government:

- (63) Antecedent government holds of a link (α, β) of a chain, where α governs β .

1.5.6 Bounding theory

The bounding theory accounts for locality conditions on movement "rules". The basic principle of bounding theory is Subjacency which constrains the application of move a , that is Subjacency is an S -structure condition on the kind of relations that may hold between antecedents and traces of moved elements.¹⁵ Subjacency is defined as in (64) (cf. Chomsky, 1986b: 30):

(64) Subjacency:

- a. If (α_i, α_{i+1}) is a link of a chain, then α_{i+1} is subjacent to α .
"Subjacent" in (a) is taken to mean 1-subjacent.
- b. β is n -subjacent to α iff there are fewer than $n+1$ barriers for β that excludes α .

As we shall see, Subjacency as defined in (64) unifies the classical cases of island violations (extraction out of complex NPs, *wh*-islands) with the cases subsumed under the CED (subject condition, adjunct condition) of Huang (1982).

with Subjacency taken to be an S -structure condition, now I consider Subjacency effects in Arabic, by examining some types of structures it is designed to account for. First, I consider some grammatical examples. (65) is

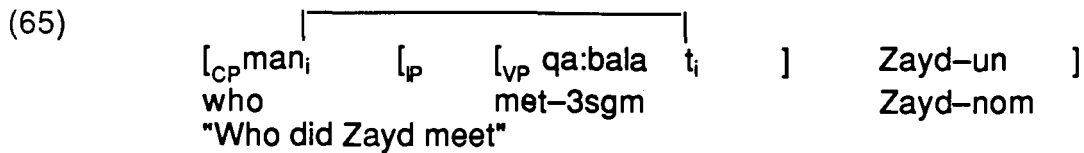
¹⁵ Subjacency was first introduced by Chomsky (1973) as in (1) to constrain the application of $\text{move-}\alpha$ (i.e. it is not a condition on representations), such that a moved constituent may cross no more than one bounding node for any given instance of movement:

(1) X [α [β Y]] X

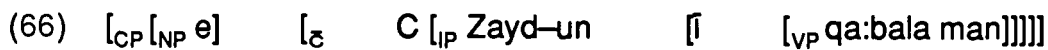
No rule can relate X and Y if α and β are bounding nodes.

Freidin (1978) and Koster (1978), however, propose that Subjacency may in fact be a condition on representations. A proposal with similar effects appears in Bresnan and Grimshaw (1978). It is suggested in Kayne (1981) that Subjacency can be subsumed under the ECP, but he does not explain the *wh*-island effects, and he handles the CNPC by a special stipulation.

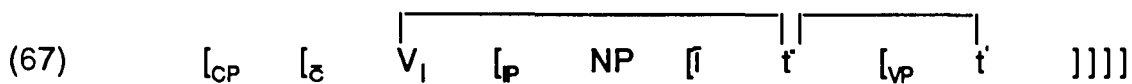
an S-structure indicating movement of the wh-phrase *man* 'who' to the specifier of CP; the corresponding D-structure is given in (66):



t is the trace of the moved wh-phrase *man*. But here it looks as if two barriers are crossed—namely, VP and IP; VP being a BC since it is not L-marked hence a barrier, and IP being a barrier by inheritance from VP— so the sentence should violate Subjacency. This is surely not the correct result given that the sentence is grammatical. Let us consider (65) more closely. The associated D-Structure representation is (66):



There are two cases of movement: movement of V from within VP to the head position I of IP, amalgamating with I to form V_I, and then V_I moves to C, head of CP. This is shown in (67):

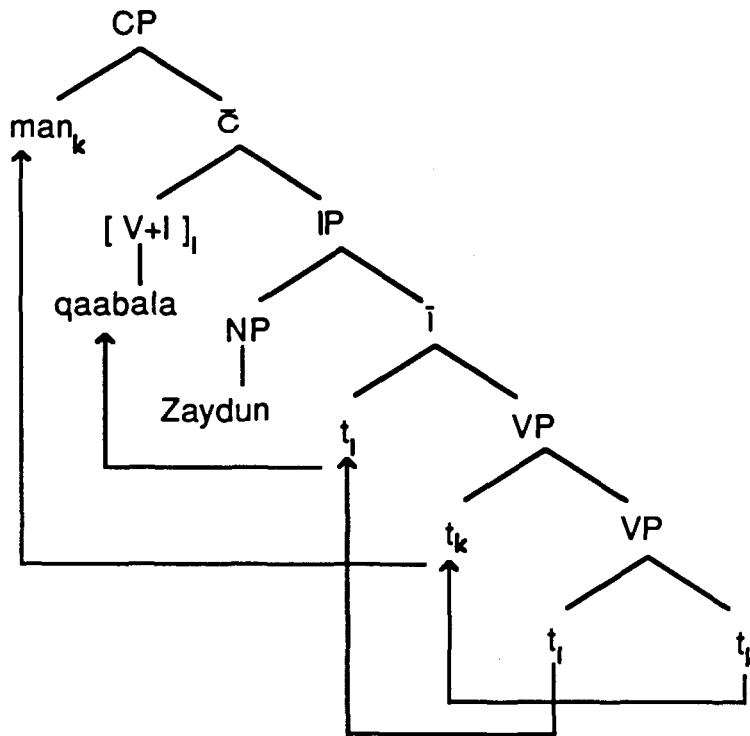


The movement of V to I is unproblematic, crossing only VP. The movement of V_I to C is unproblematic either, crossing only the BC IP, which is not a barrier.¹⁶ But the movement of *man* to the matrix specifier position crosses VP, a barrier since it is not L-marked, and IP, a barrier by inheritance from VP.

Note however that another option is possible—namely, successive cyclic movement of *man* to VP, then to the specifier of CP, yielding the structure (68):

¹⁶ Head movement will be discussed in chapter 2. On head movement (cf. Koopman, (1984), Travis, (1984) and Chomsky, (1986b).

(68)



Movement of *man* to the VP adjoined position does not cross the category VP (though it does cross one segment of VP), and the same is true of movement of *man* to the clausal specifier position from the VP adjoined position. Hence no barriers are crossed as required.¹⁷

The basic concept of bounding theory, defined in terms of (64b) yields the desired results. In (68) t_k is 0-subjacent to $t_{k'}$: There is no barrier including t_k and excluding $t_{k'}$. Similarly $t_{k'}$ is 0-subjacent to *man*. The same holds for V and its traces. Thus, (68) is an example of the best possible case of move- α .

¹⁷ I am assuming that the verb in (68) moves to INFL, and then to COMP forming the category α .

inheritance when it immediately dominates a BC. Thus, no barriers are crossed, and Subjacency is not violated.

Consider now an ungrammatical example illustrating extraction out of a subject NP:

(71)

*?ar-rajululu _i [_{CP}	allaḏi _i [_{IP}	[_{NP}	sa:hiba	t _i]	fi	l-madi:nati]]
the-man	who		friend		in	the-city

"The man whose friend is in the city..."

The movement of *allaḏi* clearly crosses two barriers. The embedded subject NP is not L-marked by any lexical category and is therefore a barrier. It also makes the IP dominating it a barrier. Therefore, two barriers are crossed and the sentence violates Subjacency.

Many details have been omitted since the issue surrounding Subjacency will be taken up in chapter 4, where other constructions in Arabic will be examined which have wh-movement properties.

1.5.7 Control theory

Control is the subtheory which determines the distribution and reference of an empty category NP, symbolized as *PRO*.¹⁹ *PRO* is always the subject of a non-tensed clause, and can never appear in any other position. Lexical NPs cannot appear in the subject position of infinitives:

- (72) a. John wants *PRO* to leave.
 b. *John tried Bill to leave.

¹⁹ Various versions of the theory of control has been developed in the literature. To name just a few, Chomsky (1981, 74 ff.) outlines a theory based on the *PRO* theorem in (74), Manzini (1983) who argues that *PRO* is strictly an anaphor, and Bouchard (1984), who argues that *PRO* cannot be both [+pronominal, +anaphor], but it is either a pronoun or an anaphor depending on the context. Bouchard suggests deriving control theory from the binding theory. I have nothing to say about the proper analysis of control theory, and will limit the discussion to an illustration of the kind of control found in Arabic.

(72) is excluded by Case theory since the subject of the infinitive *Bill* lacks Case.

PRO has properties of both pronominals and anaphors, and can be proximate (anaphoric) and obviative (arbitrary in reference). The proximate and obviative uses of *PRO* are shown in (73a) and (b) respectively:

- (73) a. John promised [*PRO* to go to college]
 b. It's unclear [who to *PRO* visit]

PRO is like a pronoun 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 (73a). On the other hand, the fact that *PRO* may also lack an independent referent, as in (73b), and 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. Since *PRO* is both pronominal and anaphoric, it would be both bound and free in its minimal domain, which is impossible. This contradiction is avoided in the following way. *PRO* does not fall under the binding theory, since as a pronominal anaphor it can have no governing category, and must appear in ungoverned positions. This deduction is referred to as the *PRO* theorem:

- (74) *PRO* theorem:
 PRO must be ungoverned.

The *PRO* theorem accounts for the impossibility of *PRO* in subject position of a subcategorized small clause (75a) and its possibility in subject position of a non-subcategorized (adjunct small clause) small clauses (75b). The notation SC stands for small clause:

(75)

a. *We consider [AP PRO intelligent]

b. John arrived home [AP PRO drunk]

In (75a) *consider* governs and Case marks PRO in the subject position of the small clause; hence *PRO* cannot occur in this position by (74). In (75b), however, *PRO* can occur in the subject position of the adjunct small clause since it is an ungoverned position.

Now, I consider some of the contexts in which PRO in Arabic is instantiated. PRO appears in two constructions verbal nouns and small clauses. Consider verbal nouns first. In Arabic a verbal noun, like a finite verb, can have a lexical subject, *Taariq* in (76). The subject receives a Θ -role and a genitive Case, signalled by *-in*, from the verbal noun. This is illustrated in (76):

(76)

yuqliqu-ni [NP [N darb-u Ta:riq-in zami:l-a-hu]]
worry-me beating-nom Ta:riq-gen colleague-acc-his
"Ta:riq's beating of his colleague worries me."

The subject of a verbal noun, however, like that of infinitives in English, can be non-lexical (an empty category void of phonetic matrix) with arbitrary reference (77); or obligatorily coindexed with its controller (78a). The empty subject is indicated as [NP e]: subj = subjunctive

(77)

lan ?u?ayyid-a_k [NP [NP e_i] [N [VP tahti:m-a al-madi:nat-i]]]
not approve-subj to destroy-acc the-city-gen
"I will not approve of destroying the city"

(78)

a. ?arad-tu-AGR_i [NP [NP e_i] [N [VP tahti:m-a al-madi:nat-i]]]
want-1sg
"I wanted to destroy the city"

b. *?arad-tu-AGR_i [NP [NP e_k] [N [VP tahti:m-a al-madi:nat-i]]]

(78b) is ungrammatical since the empty subject [NP e] of the embedded IP has an independent referential index, which mismatches that of the matrix subject

- c. ʔintalaqa ʕamr-un_i [_{AP} PRO_i ra:kib-an] [_{AP} PRO_i mubtasim-an]
 departed ʕamr-nom riding-acc smiling-acc
 "ʕamr departed riding (and) smiling."
- d. ʕamr-un_i madrub-un [_{AP} PRO_i qa:ʔim-an]
 ʕamr-nom beaten-nom standing-acc
 "ʕamr was beaten standing."
- e. raʔay-tu_i al-ʔami:rat-a_k [_{AP} PRO_i mustid-an] [_{AP} PRO_k munhadir-at-an]
 saw-1sg the-princess-acc going up(masc.)-acc going down-fem-acc
 "I (while) going up saw the princess coming down."

I analyze the adjuncts under item (90) as predicates of small clauses with an empty category subject *PRO* as indicated by the brackets. These small clauses are not subcategorized for by the verb, i.e., they are not arguments, but adjuncts base-generated outside of the VP and the government domain of the verb, probably adjoined to IP. Hence, *PRO* is allowed as the subject of the predicate, which is the head in these clauses, since *PRO* is ungoverned. *PRO* is coreferential with the matrix subject (90a), (c), the passivized subject in (d), and with the the NP *al-faras* in the object position of *rakiba* in (b). In (e) *PRO_k* is coreferential with the object *al-ʔamira*, while *PRO_i* is coreferential with the matrix subject.

In contrast to adjunct small clauses, and by the PRO theorem, PRO is excluded from the subject position of a subcategorized small clause. Recall that since PRO has a dual status as a pronominal anaphor, its distribution follows as a theorem of the binding theory: if PRO is subject to both (A) and (B) of the binding conditions, it is subject to contradictory requirements whenever PRO has a governing category. Therefore, it can never have one and must be ungoverned; it may never appear either as the complement of a head or as the subject of a tensed clause, since these positions are governed positions. Hence PRO is normally in complementary distribution with lexical NPs:

(91)

- a. jaʔaltu [AP (*PRO)/ʔamran safi:dan]
"I made (*PRO)/ʔamr happy".
- b. raʔaytu [AP (*PRO)/ʔamran wa:qifan]
"I saw (*PRO)/ʔamr an standing".
- c. hasibtu [PP (*PRO)/ʔamran fi limtiha:ni]
"I believed (*PRO)/ʔam in the exam"
- d. samiʔtu [VP (*PRO)/ʔamran yaʔzifu ʔala alʔu:di]
"I heard (*PRO)/ʔamr play the guitar"

The complementary distribution of PRO and lexical NPs observed above is determined primarily by the interaction of two subsystems of grammar, Case theory and binding theory each of which refers to government theory. A lexical NP may show up as subject of a lexical category if it were possible for an external Case assigner to govern into the subject position of that lexical category. The small clause boundary is transparent to government for the purpose of Case-assignment. I would then expect that the subject position of a subcategorized small clause complement to be properly governed by the verb which assigns Case to this position. The expectation is fulfilled:

(92)

- a. man_i taʔtabiru [AP t_i ʔakiyyan]
"who do you consider intelligent"
- b. man_i raʔayta [PP t_i fi lhujrati]
"who did you see in the room"

Moreover, if the matrix verb is a raising verb, or a passive participle and therefore governs into the subject position without assigning Case, then NP-trace may appear as the subject of a small clause complement:

(93)

- a. ʔasbaha ʔamr-un_i [NP t_i tabi:ban]
became ʔamr-nom doctor
"ʔamr became a doctor"

- b. dahara řamr-un_i [AP t_i mutřaban]
 appeared řamr-nom tired
 "řamr appeared tired"
- c. tasabbab alfaras-u_i [NP t_i řaraqan]
 dripped the horse-nom sweat
 "The horse dripped sweat"
- d. dunna řamr-un_i [VP t_i madruban]
 believed řamr-nom beaten
 "řamr was believed beaten"

The small clauses in (91) are L-marked by the matrix verb, hence not barriers to government, and the verb governs the subject position, thus ruling out *PRO* from that position, while admitting a lexical NP in the subject position of the small clause. The subject is assigned accusative Case flagged morphologically by *-an*.

If we accept the view that Case is assigned under government, then the subject position in (91) must be a governed position in order for Case-assignment to take place. In addition to Case, there are two other facts that tell us that government crosses the boundary of the small clause structures. These are the occurrence of a reflexive (94a), and the objective form of the pronoun indicated by the object clitic *-hu* affixed to *?iřabar* 'consider' (94b), the nominative form is excluded:

- (94)
- a. yařtabir-u:na_i [AP ?anfus-a-hum_i athkiya:?-a]
 consider-3mpl selves-acc-them intelligent-acc
 "They consider themselves intelligent."
- b. ?iřtabar-u:-hu_i [AP pro_i thakiy-an]
 consider-3mpl-ob cl intelligent-acc
 "They consider him intelligent"
- c. * ?iřtabr-uu [AP huwa thakiy-an]
 consider-3mpl he intelligent-acc
 "They consider he intelligent"

These facts, which follow entirely from the interaction of various subtheories of UG, among them government theory, Case theory, and binding theory may be taken as additional empirical support for these subtheories. For more on small clauses see chapter (5), section (5. 2) and footnotes (2) and (3) of that chapter.

Finally a word is in order on the notion of licensing relations.

1.8 Licensing Relations

In the present stage of the GB theory, a considerable amount of discussion has been concerned with licensing, a notion that has recently obtained general acceptance. It is thus perhaps worthwhile to briefly put the theory into this perspective.

Many or most of the subtheories and principles are well-formedness conditions concerned with licensing of elements; every element in the structure must be licensed by performing a particular function in the structure, such that one really can wind up with a theory in which each bit of structure is there because some other bit of structure requires it to be there, or else the second substructure is dependent upon the first for its own well-formedness. The sentential structure is well-formed only if every element in it is licensed.

The subject position, for example, must be generated as an extension of the Projection Principle, in turn, derived from the the well-formedness condition that in order for a predicates to be licensed as a predicate, it must have a subject for predication.

A lexical head is licensed by projecting its phrasal categories; *PRO* must meet the licensing condition that it be ungoverned; *pro* has an additional well-formedness condition placed upon it that it must be licensed by some nominal features. The relation between the various subcomponents of the grammar are

regulated by the Projection Principle. By the Projection Principle Θ -roles must be assigned in the same way at each syntactic level, a hypothesis requiring the existence of argument traces, which then must be licensed by meeting the well-formedness conditions of the Θ -Criterion and the ECP. The conception of syntactic structure that comes out of the Projection Principle is that some position will exist in the structure only if some lexical item requires it to exist. In such case, the lexical item is said to license that category in the syntactic structure. Arguments are licensed through their relation to the verb, that is through the function they perform in the verb's Θ -structure. Traces, arguments or adjuncts, which are empty categories left by move- α , are licensed by being in a specific relation with the head of the construction in which they appear, or with their antecedent. This licensing relation is expressed by the ECP; wh-traces in addition are required by the constraint against vacuous quantification at LF. Then, it can be said that these traces are not only required but also licensed by these conditions. Their presence is in effect guaranteed by these well-formedness conditions.

Anaphors are licensed by being in a binding relation, that of A-binding, with their antecedents in a specified domain. The licensing structure, then is a structure in that it is a collection of relations, of which binding and Θ -relations are two examples. Full interpretation (FI) occurs if every element in a syntactic string is licensed so that at LF or PF all elements in the string can be identified for construal. Full licensing occurs if all elements in a representation have been licensed for identification in accord with FI.

1.9 Summary

I now review briefly the basic subtheories of UG presented above. I assumed the "principles and parameters" approach to linguistic theory outlined

in Chomsky (1981) and subsequent work, revising extending and defending in the chapters to come. In this conception UG consists of various subsystems: \bar{X} -theory, government theory, binding theory, Case theory, Θ -theory and bounding theory. Each of these subsystems contains certain principles with a limited degree of parametric variation. A particular (core) language is determined by fixing parameters in these subsystems. In addition, there are certain overriding principles such as the Projection Principle and the Principle of Full Interpretation.

This concludes our outline of the principles and subsystems of UG as conceived of in the GB model of syntax which underlies this research.

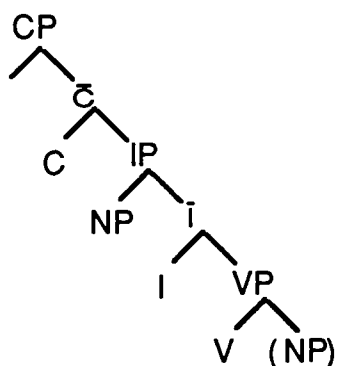
Chapter 2

Word Order

2.1 Introduction

This chapter addresses the issue of word order. It argues that the surface VSO order of Arabic is to be derived from a D-structure that resembles (1):

(1)



I will claim that Arabic has a restriction on directionality of government and Case-assignment for all Case-assigning categories: INFL, V, P, N and complementizers which are Case assigners, such as *?anna* and its morphological variant *?inna*. In other words, the directionality parameter for government and Case-assignment in Arabic is set to apply strictly rightward. INFL, like the other categories must assign its Case rightward.

Since INFL is the category that assigns Case to the subject NP, and since Case is only assigned to the right, INFL must move left-ward to a position where it can assign Case to the subject to its right. I assume that it moves to COMP, head of CP. Since INFL has no full lexical status, it appears phonetically in surface structure as part of a verbal affix system. This triggers V movement to INFL and subsequently to COMP to provide a locus for INFL to cliticize to. This results in a VSO order at S-structure.

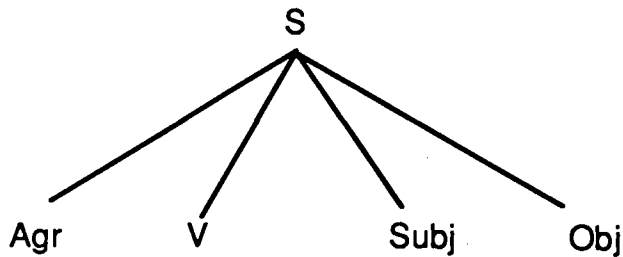
Another alternative is to assume that the subject in Arabic is generated in Spec VP in D-structure and it remains there at S-structure. The verb moves from within VP to realize INFL at S-structure, yielding a VSO order. If so, then VSO order could be derived even if the verb only moves to INFL. According to this view the subject in Spec VP will be assigned Case by INFL which is in the proper configuration for Case assignment and hence there is no reason for the subject to move to Spec IP. I will not however adopt this possibility here although it seems to have desirable consequences in various areas of Arabic grammar.¹

The movement that moves V to INFL, a pre-subject position, is a head-to-head movement (Chomsky, 1986b). Within GB theory this analysis is necessary given all explications of the theories of government and Case-assignment where V governs its complement and INFL governs the subject NP. In particular, there must be a structural, i.e., hierarchical, distinction between subcategorized complements of lexical categories, and specifiers (in the sense of Chomsky 1970) if they are to receive different Cases, and if Case-assignment is to be defined in structural terms.

A non-configurational structure as in (2) requires a linear definition of Case:

¹ The internal subject hypothesis --- that the subject of a clause originates in the specifier position of an inflectional head --- has been suggested in the literature by various people. Koopman and Sportiche (1988), Kuroda (1988) and Kitagawa (1986) have proposed this hypothesis. They suggest that the subject in English raises from within the projection of the lexical head to the specifier of IP where it can be assigned Case by Inflection. It is assumed that Inflection in English assigns Case to the right.

(2)



Case is typically not assigned by a particular syntactic category under the structural definition of government and c-command, but rather it is 'inherent', or lexical, i.e., is generated by the base-component on NPs.²

An analysis that maintains that Arabic clauses have a non-configurational structure necessarily predicts that phrases of the \bar{X} -system in Arabic will have a single level of projection (apart from some operator-positions), and hence there will be no hierarchical distinction between subcategorized complements and specifiers. This prediction is false, in view of genitive NPs, gerundive NPs, PPs, and VPs within gerundive NPs. These categories have a configurational structure, in the same sense as clauses do in a language like English.

In the following section I propose an SVO analysis for Arabic.

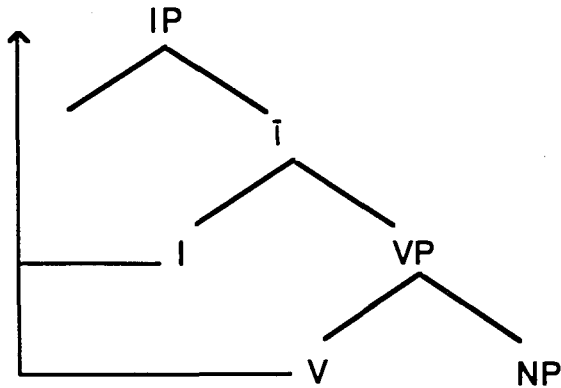
2. 2 SVO Analysis

Emonds (1979), Sproat (1985) propose that languages with VSO surface orders be derived from SVO orders at D-structures. Sproat (1985) proposes that the subject of a sentence in a VSO language receives Case from a preceding governing INFL³. This requires INFL to be preposed to a pre-subject position taking the verb along for morphological support:

² See Hale (1982, 1983) for an elaboration of this idea with respect to Warlpiri.

³ It is interesting to note here that in Arabic grammatical theory it was held that "martabatu al-sa:milu qabla almaʕmu:li fihi, malfu:dan bihi ?aw muqaddaran" Ibn as-sarra:j, (1973: 108).

(3)



The motivation for the verb movement analysis has appeared in the literature. Such an analysis is necessary assuming the following about UG:

(4)

- a. V governs the object
- b. INFL/AGR governs the subject
- c. V is the head of VP
- d. INFL is the head of IP

(a-b) follow from the definition of government; (c-d) follow from \bar{X} -theory.

I further suggest a restriction on the Case assigning properties of INFL and all other Case assigners. Case-assignment in Arabic only applies rightward and requires adjacency (the Case assigner must be adjacent to the Case assignee)^{4, 5}. The view that Case-assignment in Arabic applies to the right with an adjacency requirement imposed on it is a result of parametric variation.⁶ Like all other Case-assigning categories in Arabic such as V, P, N, and C, INFL must Case-assign rightward. Complements of Vs, Ps, Ns and Cs in Arabic must, canonically, follow their governors.

This translates as follows: The linear order of the governor whether overt or assumed is to precede the governee.

⁴ cf. Ellesseily, (1985) who also makes the assumption of rightward directionality in Case-assignment for Arabic.

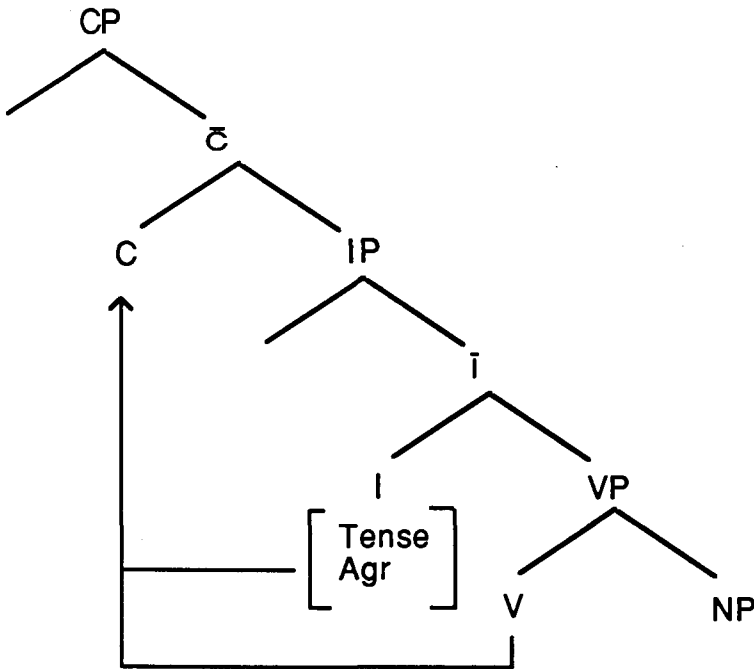
⁵ see chapter 4, (4.10.1) for arguments that Case-assignment in Arabic requires adjacency.

⁶ for a discussion of these parameters (cf. Sproat, (1983), (1985) and Koopman (1985).

I further assume that the inflectional element INFL in Arabic must be morphologically supported; in other words INFL cannot be separated from a verb since it only includes the vocalic affixes encoding tense, AGR, aspect and voice. INFL contains the features [+tense], and the agreement element (AGR) which is nominal in character by virtue of having the features of person, number and gender. INFL is the element that governs and assigns Case to the [NP, IP].

With these assumptions I can account for the VSO order in Arabic. Since INFL is the element that assigns Case to the subject, and since Case is only assigned rightward INFL must move leftward to COMP. INFL is then in a position to assign Case to the subject NP to its right. Since INFL does not have a lexical status, it is realized phonetically as an affix attached to the verb in surface structure. This requires a rule of verb preposing so that the verb supplies a locus for INFL to cliticize onto. Sproat refers to this as "morphological support". I assume that the verb in Arabic, more appropriately the consonantal root, moves to the head position INFL forming an inflected V since it is now vocalically specified, then the inflected V moves to COMP (C). The movement proceeds via INFL, given the Head Movement Constraint. This head-to-head movement produces the structure in (5):

(5)



In (5) INFL is in the correct position at S-structure (to the left of the subject), and thus can govern and assign nominative Case to the subject NP to its right. I assume that the verb through its trace assigns Case to the object NP at S-structure.

The ascription of the verb movement rule to the setting of a parameter of linguistic theory involving directionality of government and Case-assignment by Case assigning categories make important predictions about word order in the gerundive construction. This is argued below.

In summary, I argued in this section that assuming an SVO structure for Arabic in the base is justified on theoretical grounds by the necessity of establishing a VP node for a universal definition of government. If the basic order of constituents in Arabic is assumed to be hierarchical; i.e. identical to that of SVO languages it would enable us to express grammatical relations and Case-assignment in a universal way, assuming a rightward setting for government and Case-assignment.

2.3 The Structure of gerundives

In the preceding discussion, I suggested that there is a base-generated VP in Arabic, and claimed that the VSO structure is derived from an SVO D-structure by the application of a verb fronting rule. I ascribed the motivation for this rule to a parameter setting of linguistic theory involving a rightward directionality of government and Case-assignment in Arabic. This hypothesis is supported by the construction of gerunds, as I shall proceed to explain.

I suggested in chapter (1) that nominative Case in Arabic is assigned to the subject NP whenever there is agreement. This raises the question of whether there exist any clauses in Arabic in which a nominative NP may not occur in subject position. If such clauses exist in Arabic, I should expect that they would lack agreement. This situation is attested in gerund clauses, which do not allow nominative subjects, as the sentences in (6) illustrate. The sentences are ungrammatical whether the subject is placed before the gerund (6a), or after it (6b):

(6)

a. **yu?limu-ni* *ʔamr-un* *darbu* *faras-i-hi*
sadden-me *ʔamr-nom* *beating* *horse-gen-his*

b. **yu?limu-ni* *darbu* *ʔamr-un* *faras-i-hi*

Although lexical subjects of gerund clauses cannot receive nominative Case, since nominative Case is assigned by agreement in INFL, and since gerunds possess no agreement, they may appear in the subject position of gerund clauses with genitive Case:

(7) *yu?limu-ni* *darbu* *ʔamr-in* *faras-a-hu*
sadden-me *beating* *ʔamr-gen* *horse-acc-his*

In Arabic, a gerund, like a transitive verb (8) can have a lexical subject as well as a lexical object (9, 7); the gerund must precede the subject, as shown by the ungrammaticality of (6a and 10) in which the gerund follows the subject:

- (8) qra?a ʔamr-un at-taqri:r-a
 read ʔamr-nom the-report-acc
 "ʔamr read the report."
- (9) ʔazʔajat-ni qira:ʔat-u ʔamr-in at-taqri:r-a
 annoyd-me reading-nom ʔamr-gen the-report-acc
 "ʔamr's reading of the report annoyed me."
- (10) *ʔazʔajat-ni ʔamr-un qira:ʔat-u at-taqri:r-a
 annoyd-me ʔamr-nom reading-nom the-report-acc

When the gerund has a lexical subject and a lexical object, as in (7 and 9) it marks its subject with genitive Case which surfaces as *-in*, and its object with accusative Case, which surfaces as *-an*. The gerund can also have a lexical object, and have its subject as a phonologically empty category; in such case it marks its object with genitive Case. Following the same line of reasoning in chapter (1), I symbolize it as *PRO*, and as any other empty category:

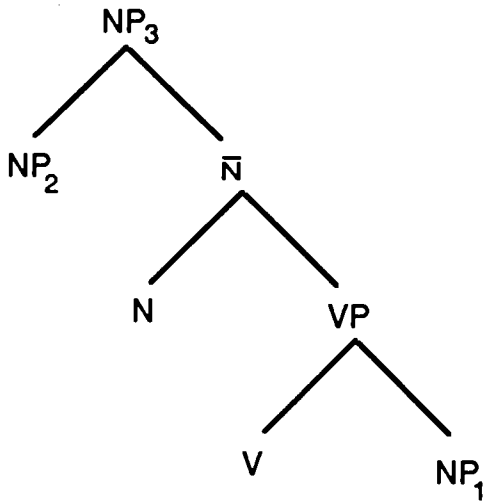
- (11) ʔazʔajat-ni PRO qira:ʔat-u at-taqri:r-l
 annoyed-me reading-nom the-report-gen
 "Reading the report annoyed me."

Specifying a subject *PRO* for the gerund as in (11) suggests that I am assigning gerunds a clausal structure, which I do, and argue for below.

2. 4 Gerundive Clausal Structure

I argue that the gerundive clausal structure consists of an NP that includes a predicate headed by the verbal noun, an N node (void of AGR and a tense operator) and a subject position which is either filled by a lexical NP as in (7, 9), or by *PRO* as in (11). The structure of a verbal noun clause is shown in (12):

(12)



The subject, NP₂, is immediately dominated by NP₃, the maximal projection of the non-lexical head N containing the vocalic affixes. The complement of N, VP, is immediately dominated by N̄. NP₁ is the complement of V and would be immediately dominated by V̄.

An argument for the clausal status of gerunds comes from the theory of binding. The fact that there is a subject NP in (11) is shown by the fact that it can function as a binder for the anaphor *nafsihi* 'himself', thus licensing the occurrence of the anaphor, which would otherwise be excluded by the binding theory:

(13) qarrara ʔamr-un PRO_i qatla nafsihi_i
decided ʔamr-nom killing himself
"ʔamr decided killing/to kill himself."

If there is no lexical subject in a gerund clause, what would the resulting structure be? We have seen that the gerundive structure contains a VP predicate: the verb and its complement. By the Extended Projection Principle, the requirement that every predicate must be an expression about something, the subject position is obligatory wherever there is a predicate, and must be

represented even if it is not filled by lexical material. It follows that gerunds must have a propositional (subject–predicate) structure.

If the subject is PRO, I would expect to find control–type structures in gerund clauses:

(14)

- a. yu-hibu ʔamr-un_i PRO_i/*_k qira:ʔata al-qura:n-i
 3sgm-like ʔamr-nom reading the-Qur'an
 "ʔamr likes reading the Qur'an."
- b. lan ʔu-ʔayid-a_i PRO_k/*_i tahdima al-manzil-i
 neg 1sg-approve-sub demolishing the-house-gen
 "I will not approve demolishing the house."

In (14a), the subject of *read* must be *ʔamr*, the matrix subject, typical of proximate PRO; whereas in (14b), the subject of *demolish* must have an arbitrary interpretation, typical of obviative PRO.

Finally, the fact that purposive gerundive clauses (15a, c) have corresponding sentential subjunctive clauses (15b, d) suggests that the gerund phrases in these positions may also be propositional (a subject–predicate structure):

(15)

- a. jalasa tahta al-ʔajarat-i li-li-stira:hat-i
 sat under the-tree-gen for-the- rest-gen
 "He sat under the tree for resting."
- b. jalasa tahta al-ʔajarat-i li-ya-starih-a
 sat under the-tree-gen so that-3sgm-rest-sub
 "He sat under the tree to take a rest."
- c. ʔa-ra:da ziya:rat-a al-madi:nat-i
 1sg-wanted visiting-acc the-city-gen
 "He wanted to visit the city"
- d. ʔa-ra:da ʔan ya-zu:r-a al-madi:nat-a
 1sg-wanted so that 3sgm-visit-subjunctive the-city-acc
 "He wanted to visit the city."

I assume that the gerund is a verbo–nominal element, that is it has both the properties of a noun and the properties of a verb. As a noun, the gerund

can be a first member of a construct state structure (genitival structure), a context in which genitive Case is assigned in Arabic, and thus the gerund assigns genitive Case to the second member of the construct state, as all nouns do.

Since the binding theory requires *PRO* to be ungoverned, it follows that the subject of the gerund *PRO* in (11) cannot be in a position to the right of the gerund, that is in the government domain of the gerund. Since government in Arabic applies only to the right, *PRO* can only occur in a position to the left of the gerund. Thus, while (11) is correctly admitted, (16) in which *PRO* occurs to the left of the gerund, a governed position, should be excluded by the *PRO* theorem:

(16) *ʔazʔajat-ni qira:ʔat-u PRO at-taqri:r-a

In light of these observations, let us consider the sentences in (9) and (10) repeated below in (17) and (18) respectively, in which the subject of the gerund, *ʔamr*, has a phonological matrix:

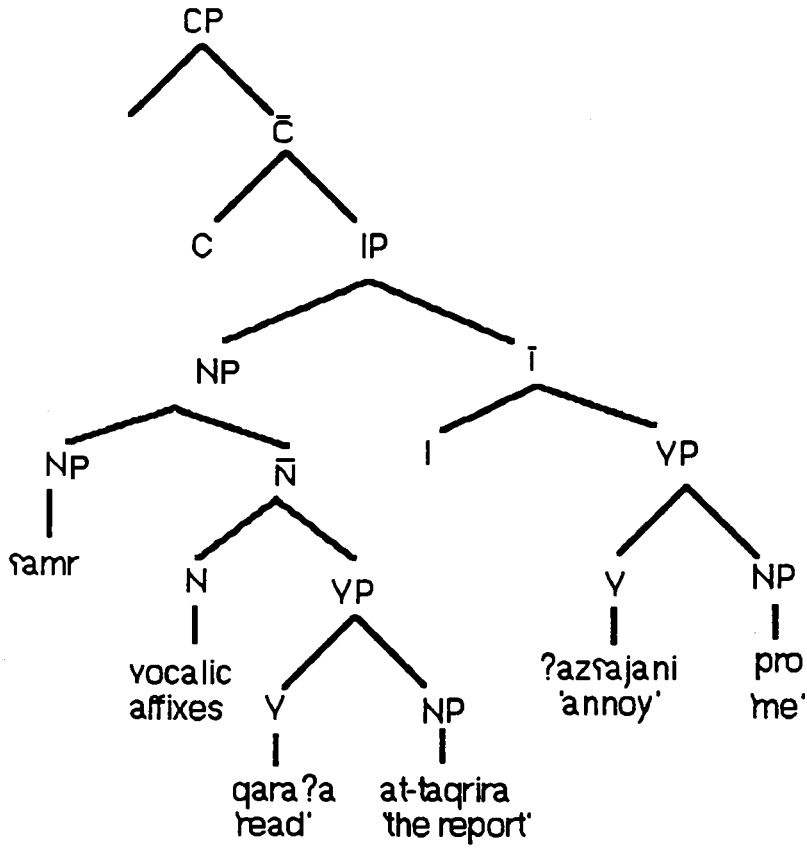
(17) ʔazʔajat-ni qira:ʔat-u ʔamr-in at-taqri:r-a
 annoyd-me reading-nom ʔamr-gen the-report-acc
 "ʔamr's reading of the report annoyed me."

(18) *ʔazʔajat-ni ʔamr-un qira:ʔat-u at-taqri:r-a
 annoyd-me ʔamr-nom reading-nom the-report-acc

Since the subject is lexical, it must obey the Case Filter, as all lexical NPs do. Given the rightward governing and Case assigning requirements, the gerund in (18) does not govern the subject *ʔamr*, nor does it assign Case to it. Government of the subject from outside is blocked by at least two intervening barriers. Gerunds have the structure of an NP dominating a VP. The NP is a barrier since it is not L-marked, thus making the dominating IP a barrier. This sentence is thus ruled out by the Case Filter; hence the ungrammaticality of (18), and the need to appeal to a verb fronting operation to generate the correct

sentence in (17). This operation yields the S-structure (20) from the corresponding D-structure (19):

(19) D-structure



subject hypothesis were adopted with the assumption that the subject in Arabic, unlike English, does not move to the specifier of IP. Instead, it remains within the projection of a lexical head, a position in which it receives Case. Then, the head N in (20) would assign genitive Case to the subject located in the specifier position of the complement of N. Assuming this hypothesis, the surface order of constituents in Arabic is obtained, if the verb moves to the inflectional head only—the head N in (20)— and therefore the need for head movement to COMP does not arise.

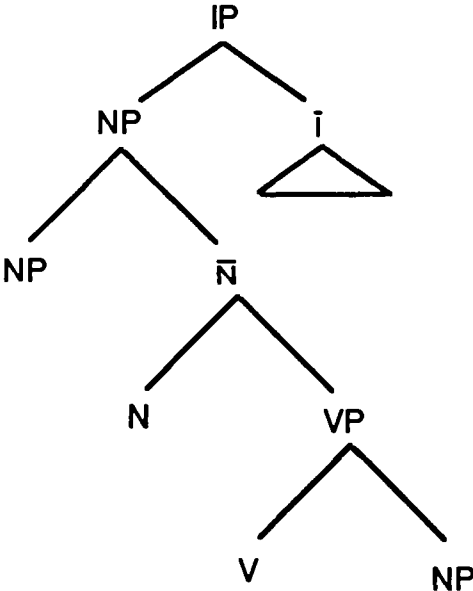
To summarize, it has been argued that the structure of gerunds in Arabic is clausal—consists of a subject and a predicate—, and suggested that the gerund clausal structure is an NP category. An overt subject may appear in the specifier position of NP, if an S-structure verb movement applies to place the gerund left of the subject so that the subject is governed and assigned genitive Case. There may never be an overt subject NP in the pre- \bar{N} specifier position unless verb movement applies, since government in Arabic applies only rightward, and the verbal noun, being within VP, cannot govern nor assign its Case to its subject.

2.5 Case-assignment in Gerundive Clauses

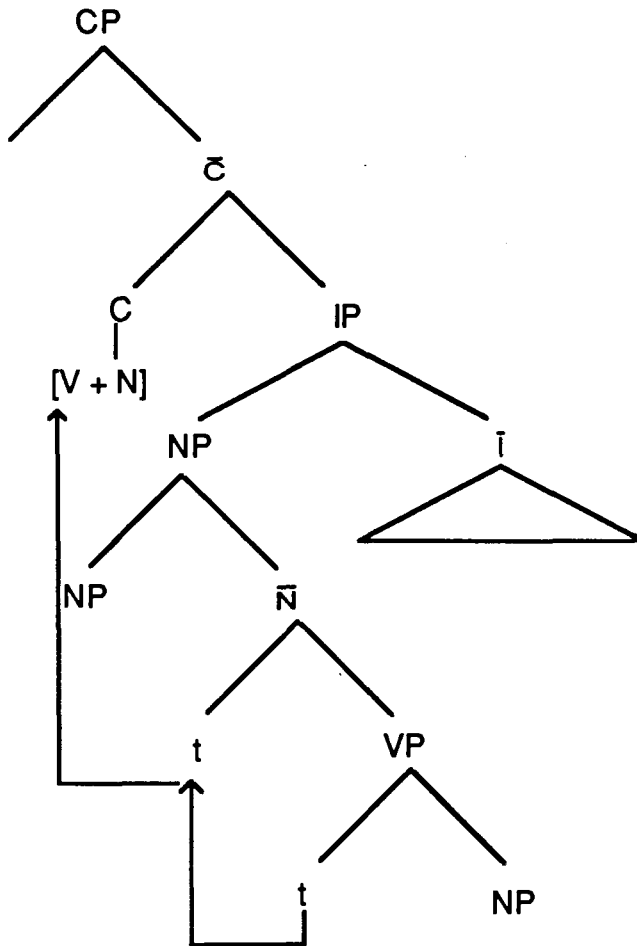
Now, I provide an account of the gerund's dual categorial behaviour by assuming that the gerund projects lexically as a clausal VP. Let us assume that a gerund has the syntactic category of a verb at D-structure, and that the gerund's vocalic nominal features are generated under N within \bar{N} . These features are affixed to the verb by the familiar process of verb raising to N, an instance of head-to-head movement. Accusative Case is assigned to the internal object position of gerundive clauses at D-structure before verb raising occurs, at a level where the syntactic category of the verb remains unaffected by

the attachment of the nominal features to the verb. Alternatively, I may assume that the verb's Case-marking capacity is maintained in the trace and that the verb through its trace assigns accusative Case to its complement at S-structure. The syntactic effect of head raising of V to N at S-structure where nominal features are attached to V is one of recategorization to N. Head raising moves the complex N + V to COMP from where N assigns genitive Case to the subject of the gerundive clause. Under the view that Arabic clauses are configurational categories, the apparently odd behaviour of gerunds would follow automatically from the structure of UG. The trees in (1) represent respectively the relevant structural properties of gerundives with a lexical subject at D-structure and after the application of verb raising and the attendant nominal recategorization:

(21) a.



b.



Gerundive clauses of type (21a) permit either a lexical subject NP or PRO in the D-structure subject position. (21b) however permits only a lexical NP and excludes PRO from appearing in the S-structure subject position. The prohibition against PRO here is due to the interacting effects of binding theory and Case theory. Having a clausal structure, gerundives are subject to the EPP, which requires that they contain a structural subject. Structures of the type (21a) ungoverned subject positions, since government in Arabic applies only rightward. The binding theory permits PRO in subject position and disallows head raising to COMP since PRO would be governed. Note that head raising to N leaves the subject position ungoverned because of the rightward directionality setting parameter for Arabic. Note, however, examples of the

structural type (21a) with a lexical subject are excluded by Case theory since the subject is not Case-marked. Now, consider the structure (21b), representing a nominal gerundive after affixation at S-structure. The subject position is governed by the nominal element in COMP exactly as the subject of a tensed clause is governed by INFL. Thus, it is immediately to be expected (since N is now in the correct position to govern and Case-assign its subject to its right) that genitive Case will be assigned to the subject in a configuration such as (21b). This has the effect of allowing lexical subjects and prohibiting PRO.

Since agreement, which I assume to be the nominative Case assigner in Arabic, is not present in gerund clauses, there can be no nominative subjects. If the subject in the gerund clause is not overt, then it is PRO which must appear only in an ungoverned position; then verb movement does not apply leaving the subject position ungoverned, as required by the binding theory.

2.6 Summary of Chapter 2

I argued on the basis of construct state structures that genitive Case assignment by a head noun is possible only under a strict configurational condition of c-command. When this condition fails, a dummy Case assigner is needed to assign Case to the complement, an entirely predictable phenomenon given the Case Filter.

I suggested that, like all other Case-assigning categories in Arabic such as V, P, and N, INFL must Case-assign rightward. Objects of Vs, Ps, Ns and case-assigning complementizers must, canonically, follow their governors. Since Case is only assigned to the right, I suggested that INFL moves to COMP, and since INFL needs to be morphologically supported, V moves to INFL and then to COMP to provide a locus for INFL to merge to. This head-to-head

movement results in a VSO order at S-structure. The analysis is supported by facts concerning the structure of gerunds.

Chapter 3

The Syntax of Left–dislocation

3.1 Introductory Remarks:

This chapter is primarily concerned with the syntax of Left–Dislocation (henceforth LD). To illustrate, consider the following sentences in which the NP *ar-rija:lu* corefers with the agreement element *-u:* suffixed on the verb¹ :

- (1)
- a. *ar-rija:l-u_i* *qa:m-u_i*
 the-men-nom stood up-3mpl
 "The men stood up"
- b. **ar-rija:l-u_i* *qa:m-a*
- (2)
- a. •*qa:m-u:* *ar-rija:l-u*
 stood up-3mpl the-men-nom
- b. *qa:m-a* *ar-rija:l-u*

The pre–verbal NP in (1) requires full agreement with the verb. In (1a) the agreement is fully specified for number, person and gender and the sentence is grammatical. In (1b) however the agreement is only in gender and thus the sentence is ungrammatical. In contrast, the post–verbal NP in (2) requires agreement only in gender. Thus, it cannot co–occur with the third person plural agreement *-u:* suffixed on the verb in the same minimal domain as shown in (2a). I need to explain this contrast.

Similarly, consider the following paradigm where the initial NP is understood as the object of the verb:

¹ Coreference will be indicated by indexing throughout this thesis.

- (3)
- a. ar-rija:l-u_i saʔad-na-hum_i
 the-men-nom help-1pl-ob cl
 "The men, we helped them"
- b. *ar-rija:l-u_i saʔad-na t_i
 nom
 "the men, we helped"
- (4)
- a. ar-rija:l-a_i saʔad-na t_i
 acc
 "the men, we helped"
- b. ar-rija:l-a_i saʔad-na-hum_i
 acc ob cl
 "The men, we helped them"

Note that (3a) has a clitic, (3b) does not, and that (3b) is ungrammatical. Compare it with (4a) which has no clitic, yet the sentence is grammatical. The only difference between (3) and (4) is that the initial NP is marked nominative in (3) but accusative in (4). In (3), where the NP bears nominative Case, the presence of a clitic is obligatory. In contrast, in (4), where the NP bears accusative Case, the presence of the clitic is possible but not obligatory.

I would like to point out here that Left-dislocation is not only a main-clause phenomenon in Arabic as the data in (9) below imply. In fact, Left-dislocation is possible in main-clauses without being introduced by a complementizer, as represented by (6) and (9) below, in main clauses introduced by the complementizer *?inna* (7), and in embedded clauses of *believe*-type verbs introduced by the complementizer *?anna* (8). (5) is a regular non-left-dislocation structure. In (6-8), the NP *alʔasal* 'the honey' has been Ld'd:

- (5) ʔariba ʔamr-un al-ʔasal-a
 drank ʔamr-nom the-honey-acc
 "ʔamr drank the honey"

- (6) al-ḥasal-u ḥamr-un ḥariba-hu
the-honey-nom ḥamr-nom drank-obcl
"As for the honey, ḥamr drank it"
- (7) ?inna al-ḥasal-a ḥamr-un ḥariba-hu
that the-honey-acc ḥamr-nom drank-it
"As for the honey, ḥamr drank it"
- (8) ḥasib-tu ?anna al-ḥasal-a ḥamr-un ḥariba-hu
thought-1sg that the-honey-acc ḥamr-nom drank-it
"I thought that as for the honey, ḥamr drank it"

I have divided the data into three major sets corresponding to the three classes of Left-dislocation structures. The first two structures, in which an NP is left-dislocated in the main clause, will be the focus of sections (3.2) and (3.11) respectively. A detailed treatment of embedded Left-dislocation will be provided in section (3.19) in an attempt to determine the extent to which they are related to matrix Left-dislocation, relative clauses and topicalization.

The first section argues in favour of an analysis of these structures without movement. The second section addresses the issue of how the NP in sentence-initial position in (1-3) receives an interpretation. The third section extends the proposed analysis to the NP that immediately follows the complementizer *?inna* and argues that the NP is adjoined to IP (=S). Section (3.16) argues in favour of *?inna* as an accusative Case-assigning complementizer. Finally, (3.19) deals with embedded LD.

3.2 Matrix Left-dislocation Without a Complementizer

The initial NP in the following examples is related to a pronoun written as *pro* by coindexing, which in turn is coindexed with a clitic. It should be noted that since Arabic is a null argument language, resumptive subject pronouns and resumptive object pronouns are null just like non-resumptive ones may be null:

- (9)
- a. **al-ʔawlad-u_i** **na:m-u_i** **pro_i**
the-boys-nom slept-3mpl
"As for the boys, they slept"
- b. **al-ʔawlad-u_i** **sa:ʔad-na-hum_i** **pro_i**
"The boys-nom we helped them"
"As for the boys, we helped them"
- c. **Aliy-un_i** **jaʔ-at** **ʔumm-u-hu_i** **pro_i**
Ali-nom came-3sf mother-nom-gencl
"As for Ali, his mother came"
- d. **Aliy-un_i** **ʔa-ʔta-hu_i** **pro_i** **Hasan-un** **al-kitab-a**
Ali-nom 1sg-give-obcl Hasan-nom the-book-acc
"As for Ali, Hasan gave him the book"
- e. **ʔad-diuyuf-u_i** **rahib-u** **bi-him_i** **pro_i**
the-guests-nom welcome-2mpl in-ob cl
"As for the guests, give welcome to them"
- f. ***diuyuf-u** **rahib-u** **bi-him** **pro**
guests-nom welcome-2mpl in-ob cl
** "As for any guests, give welcome to them"

Now, I note the important features of LD structures exemplified above.

3.2.1 Range of LD:

As can easily be ascertained from the data in (9), the range of NPs that may be left-dislocated is quite wide in Arabic. The relation between the first lexical NP and the rest of the sentence changes in each case. In (9a), *al-ʔawladu* is coreferent with the subject position; in (9b) it is coreferent with the object clitic on the verb *sa:ʔad*; in (9c) it is coreferent with the genitive position (possessor) of the NP *ʔum*; in (5d) it is coreferent with the indirect object position, and in (9e) it is coreferent with the object of the preposition *bi*-. (9f) is ill-formed since the initial NP is indefinite. In (3.6), it will be seen that the coreference linkage between the NP in question and its site can go freely into complex and coordinate NPs.

3.2.2 presence of Null Pronouns:

One of the prominent features displayed by the data in (9) is that any left-dislocated non-subject NP leaves a resumptive pronoun *pro* behind, displaying its features of number and gender². Note that *pro* is always coindexed with the clitic attached to the lexical head.

Arabic is a null argument language, a term generally used to describe languages that allow a null subject, object or both. In other words, the term refers to languages which allow the absence of lexical NPs in argument positions in the surface realization of the sentence. Assuming the Extended Projection Principle (Chomsky, 1982), which requires that the subject position must be syntactically available universally, the Projection Principle and the Θ -Criterion, a Θ -marked position must be structurally represented, even if that position is not filled by any lexical material. Given these principles, an argument must appear in the subject and object positions to receive the Θ -roles assigned to these positions by VP, and V, head of VP, respectively. I assume that this argument-- when not expressed phonologically-- is represented by the pronominal non-anaphor *pro*.

This choice between null and lexical realization of subjects and objects is relegated to the internal structure of the INFL node and to the presence of clitics respectively. In Al-Bayaty (1989) I developed an account that establishes a relation between AGR in INFL and the clitic on one plane, and the null

² The pronoun in question is sometimes referred to in the literature as "replacive", "returning", or "resumptive". Within the indigenous grammatical tradition the terms *ar-ra:bit* literally, "the connector" and *al-ra:?id* "the returning" are used to describe the pronouns in LD and relatives respectively. These pronouns are considered the defining features of the two constructions. In this thesis we have consistently used the term "resumptive" following recent literature on this topic. In this respect i.e., the use of resumptive pronouns, LD structures are similar to relative clauses discussed below in 4.2.6. Based mainly on the similar distribution of resumptive pronouns in both LD and relatives, Lewkowicz (1971) and Russell (1977) proposed that relative clauses in Arabic are transformationally derived from an underlying Topic-Comment (LD in our terminology) via a process of topic or theme deletion. Kuno (1973) suggested a similar analysis for Japanese relatives.

argument *pro* on the other plane. AGR and the clitic, both being nominal, i.e., contain the set of features of person, number and gender, function as licensors for *pro* (identify the content of *pro* in terms of person, number and gender).

This account is based on the discussion of clitic doubling. Clitic doubling is the phenomenon where a lexical NP exists in a sentence together with a clitic attached to the head of the phrase and coindexed with that NP, as seen in the English translation " *I hit him to/of Bill" which is unavailable in English. This construction provides strong support for the view that the clitic is to be analysed as a spell out of Case features of the head, and not as a complement of the head of its phrase.

Consider in this respect the grammaticality of (10a) which displays a resumptive pronoun, versus the ungrammaticality of (10b) in which a resumptive pronoun is missing:

(10)

- a. al-ʔamθal-u_i na-drib-u-ha_i *pro*_j li-qawm-in³ ya-tafakkar-u:n
the-similitudes-nom 1pl-set forth-ob cl for-people-gen reflect-3pl
"As for the similitudes, we set them forth for people who reflect"
- b. * al-ʔamθal-u na-drib-u li-qawm-in ya-tafakkar-u:n
**"As for the similitudes, we set forth for people who reflect"

³ Most indefinite nouns in Arabic and consequentially adjectives and adjuncts by agreement display their Case morphologically by the following suffixes: *un* : nominative indefinite, *an* : accusative indefinite, and *in* : genitive indefinite. These suffixal Cases are known as "nunation". They are treated as indefinite because they are mutually exclusive with the definite article (ʔ) *al*. To clarify their distribution, here are a few examples showing the mutual exclusiveness of the accusative indefinite Case and the definite article:

1. qa:bal-tu al-wazi:r-a
met-1sg the-minister-acc indef
"I met the minister"
2. qa:bal-tu *al-/wazi:r-an
met-1sg the/minister-acc indef

3.2.3 Coreferentiality

The well-formedness of the sentence depends crucially on the coreferentiality of the pronoun and the Ld'd NP. This pronoun is coindexed with a clitic. Ungrammaticality immediately results if the NP and its pronoun are assigned different indices. (11) illustrates this remark:

- (11) • al-ʕa:simat-u_i ban-a:-ha pro_k Ar-Rasfid-u
the-capital-nom built-3sgf-ob-cl Ar-Rafid-nom
**As for the capital_i, Ar-Rafid built it_k **

The sentence is ill-formed since *pro* and the initial NP are assigned incompatible indices. *pro* is assigned the index *k* whereas the initial NP is assigned the index *i*

3.2.4 Specificity:

There are some semantic restrictions on LD that prevent non-specific NPs from being Ld'd. In some analyses of LD in Arabic, the feature [+ definite] has been used instead of specific to describe these restrictions. This is mostly because specific NPs can contain the determiner *?al -*, which marks definiteness. I shall argue in a later section that the use of the feature [+ definite] is not adequate for describing the semantic constraints on the Ld'd NP. It is true that all the Ld'd NPs in (9) are definite as the determiner *?al -* attached to the noun indicates, and that the sentences will be ruled out if the determiner is omitted from the NP as (9f) above shows. The following sentences are grammatical despite the absence of the determiner *?al -*:

- (12) rajul-un tuhibu-hu Layla qa:bala-ni
a man-nom like-3sgm ob cl Layala interviewed-3sgm-1sg ob cl
"A man Layala likes him interviewed me"
- (13) rajul-un salih-un qa:bala-ni
a man-nom fair-nom interviewed-3sgm-1sg ob cl
"A fair man interviewed me"

The NP *raju-un* in (12-13) is not definite, but what it denotes is made more specific by adding relative clauses as an individual who belongs to the class of people whom Layla likes (12), and who are fair (13). Thus, the feature [+definite] is not sufficient for describing these facts, and it is more appropriate to say that the Ld'd NP must be specified with the possible utilization of the feature [α specified]. This approach to the semantic constraints on LD will be further discussed in section (3.9), where it will be argued that it is compatible with the predication approach developed in section (3.8).

3.2.5 Nominative Case:

In each of the examples under (9), the Ld'd NP is nominative regardless of the role it seems to play in the sentence, and of the argument position with which it is coindexed.⁴ In (9b, c, d, and e above) V, N, V, and P assign respectively accusative, genitive, accusative, and genitive Case. This becomes clear when a lexical NP occurs as a complement of V, N, V, and P in a simple sentence:

(14)

- b. saʔad-na al-ʔawlad-a
 helped-1pl the-boys-acc
 "We helped the boys"
- c. jaʔ-at ʔumm-u ʔaliyy-l
 came-3sf mother-nom Ali-gen
 "Ali's mother came"
- d. ʔaʔt-a Hasan-un ʔaliyy-an al-kitab-a
 give-sg Hasan-nom Ali-acc the-book-acc
 "Hasan gave Ali the book"
- e. rahib-u bi al-diyuuf-l
 welcome-3pl in the-guests-gen
 "Give welcome to the guests"

⁴ The feature of nominative Case distinguishes LD from structures produced by move- α to be discussed below. Bakir (1979) cites this feature as one of the arguments for a base-generation analysis of LD.

I will assume that this nominative Case is a default LD Case that is not assigned to the Ld'd NP under government, such as by AGR in INFL. In other words, in Arabic, nominative Case is the Case that an ungoverned NP receives in the absence of a governor, a notion supported by the facts of Arabic. I consider the Ld'd NP to be an adjunction by base-generation. It can be adjoined to IP or to CP as will be discussed and argued for in sections (3. 15) .

In (15a) there are two Ld'd NPs *Zayd* and *?aX* both of which bear nominative Case, signalled by *-un* and *-u* respectively. In (15b) there are two left-dislocated NPs *Zayd* and *?al-?awlaad* . *Zayd* is governed and assigned accusative Case by the matrix verb. *?al-?awlaad* , however, cannot be assigned accusative Case by that verb, since it is not governed by it, and thus appears bearing nominative Case signalled by *-u* :

(15)

a *Zayd-un* *?aX-u-hu* *?akram-tu-hu*
Zayd-nom *brother-nom-his* *honored-1sg-him*
 "As for Zayd, his brother, I honored him"

b. *hasib-tu* *Zayd-an* *?al-?awla:d-u* *daraba-hum*
believed-1sg *Zayd-acc* *the-boys-nom* *hit-them*
 "I believed that Zayd, as for the boys, he hit them."

I thus formulate rule (16) for nominative Case-assignment:

(16) Nominative Case Assignment:

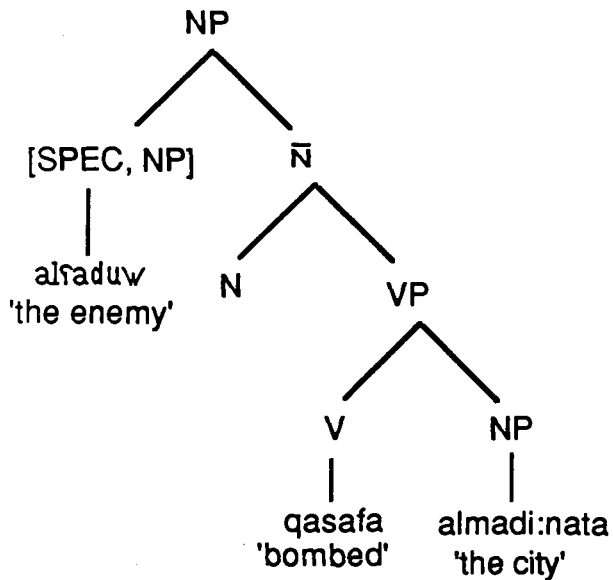
Assign nominative Case to an NP iff:

- i. NP is not in the government domain of a Case assigner.
- ii. NP cannot inherit Case.⁵

The idea expressed by this rule is that if direct Case-assignment and Case inheritance are no longer possible, then an NP receives Case by default. Thus, conforming to (16), the initial NP in (9), the NPs *Zayd* and *?aX* in (15a) and *?al-?awla:d* in (15b), acquire nominative Case.

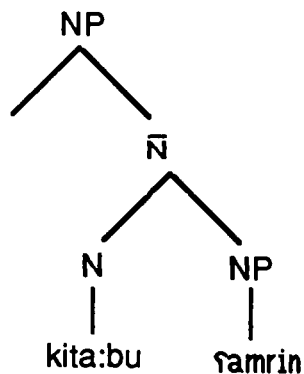
⁵ On Case inheritance cf. section (3. 16. 4) below.

(18)



The structure of the NP in (17b) is (19):

(19)



At S-structure the verb *qasafa* in (18) moves to the head N after it has assigned accusative Case to its complement, the NP *al-madinata*. The N *qasfu*, the amalgamation of the verb and the N, moves to the head position C. Recall that the parameter for government and Case assignment in Arabic is set to apply rightward. N is now in the correct position to assign genitive Case to [SPEC, NP] in (18), on analogy with nominative Case assignment by INFL to

subjects in [SPEC, IP]. The N *kita:bu* in (19) assigns genitive Case to the NP *řamr* within \bar{N} .⁷

3.3 Chopping and Copying Rules:

Structures similar to the ones given above are attested in other languages and have been discussed under the name of "topicalization" and "left-dislocation". Generative grammar since Ross (1967) has distinguished at least two different formal processes: left-dislocation and topicalization -- processes in which an NP occurs in an initial position in a string without being a subject. For Ross, topicalization and left-dislocation are two rules of movement: a chopping rule moves a syntactic category from a position α to a position β without leaving an overt category behind in α ; a copying rule moves a syntactic category from α to β , and simultaneously inserts a pronoun in position α , which agrees with the moved category in person, number, and gender. The structures illustrated above share certain characteristics with left-dislocation in that the initial NP in the string has a pronoun inside the string displaying its features of gender, person, and number and that the behaviour of these structures, as I will see later, is identical to that of left-dislocation in English with respect to Ross's constraints. These properties -- the presence of a resumptive pronoun which is necessarily coreferential with the NP, the specified character of the NP, and nominative Case -- serve provisionally to identify this structure.

3.4 Base-generation Analysis:

In later works within Generative Grammar (cf. Hirschbuhler (1975); (1974); Chomsky (1977); Cinque (1977) linguists cast doubt on the claim that copying rules exist and treated structures involving copying rules as base-

⁷ Here, I note again the problem raised in chapter (2) regarding NP being a barrier to government of the subject from COMP, hence to Case assignment. I point out the advantages of assuming the internal subject hypothesis.

generated, i.e., not involving movement of any category. It is assumed in these works that the presence of specific features in a system of data indicates that the derivation of the pertinent system of data is the product of movement. These features are the presence of a gap, and sensitivity to Ross's constraints, such as the Complex NP Constraint (CNPC) (Ross 1967) subsumed under subjacency (cf. Chomsky 1981). Conversely, the lack of these features in a data system is taken to indicate that the data system in question is base-generated. According to the base-generation analysis, the initial NP in (9–10) is generated outside the S-node in its S-structure position i.e., no rule of movement is involved in the derivation of these structures. In what follows, I will argue that the base-generation analysis is more adequate for describing the facts in (9–10). By convention, I will call the NP in question a left-dislocated NP, henceforth (Ld'd NP). I will argue that the Ld'd NP is base-generated in an \bar{A} -position adjoined to IP.

3.6 Left-dislocation is not Movement

I shall assume that the features cited in the previous section, the presence of a gap and sensitivity to Ross's constraints on movement, now subsumed under subjacency, are indicative of movement. Their absence in a given construction will serve as a diagnostic for base-generation. By using Subjacency, I shall argue that LD structures are base-generated and not derived by movement. All movement rules should obey Subjacency. LD violates it:

- (20)
 a. Hasan-un_i ja:had-tu al-fatat-a allati tu-hibu-hu_i pro_i
 Hasan-nom saw-1sg the-girl-acc who 3sgf-like-ob cl
 "As for Hasan, I saw the girl who likes him"

- b. *man_i ja:had-ta al-fatat-a allati tu-hibu t_i
 who saw-2sg the-girl-acc who 3sgf-like
 "Who did you see the woman who likes?"
- c. Hasan-un tasa:ʔal-tu [man [raʔa:-hu al-ba:rihata]]
 Hasan-nom asked-I who saw-3sgm the-yesterday
 "As for Hasan, I asked who saw him yesterday"

In (20a), the NP *Hasan* is coindexed with a resumptive pronoun *pro* inside a complex NP. The sentence will not be predicted to be grammatical if one assumes that LD is derived by movement. This is demonstrated by the ungrammaticality of (20b) where the *wh*-phrase has been extracted from inside a complex NP. Likewise, as (20c) shows, the NP *Hasan* can be coreferent with a pronominal which is inside a *wh*-island.

In addition, NPs can be left-dislocated arbitrarily far from their source clause. There is no limit on the amount of material that may intervene between the Ld'd NP and the pronoun representing it. As seen in (21a), the relation between the Ld'd NP *Hasanun* and its pronoun can hold across more than one complex NP, and as seen in (21b), the pertinent NP is coreferential with a pronominal from which it is separated by many cyclic nodes:

- (21)
- a. Hasan-un_i ja:had-tu [al-marʔat-a [allati ta-ʔrif-u
 Hasan-nom saw-1sg the-woman-acc who 3sgf-know-ind
 [al-fatat-a [allati tu-hib-u-hu_i pro_i]]]
 the-girl-acc who 3sgf-like-ind-ob cl
 "As for Hasan, I saw the woman who knows the girl who likes him"
- (b) Hasan-un_i hasaba ʔamr-un [ʔanna Zayd-an qa:la
 Hasan-nom believed ʔamr-nom that Zayd-acc said
 [ʔanna Xa:lid-acc zaʔama [ʔanna-hu_i yaqu:mu ʔadan]]]
 that Xalid-acc claimed that-exp cl stand up tomorrow
 "As for Hasan, ʔamr believed that Zayd said that Xalid claimed that he will stand up tomorrow"

This is a feature that Arabic shares with other languages that use resumptive pronouns as a LD strategy. An analysis by movement, which moves the Ld'd NP from its D-structure position, will claim that movement in Arabic does not respect island constraints. However, there are reasons to believe that movement in Arabic obeys such constraints. I will make this clearer in chapter (4) by considering two types of processes: Wh-movement and topicalization.

DeArmond (p. c) suggests that LD can also be analyzed as involving movement leaving a pronoun instead of a trace. He defines the moved NP as a super-operator that leaves a pronoun in the original position and is impervious to barriers. This analysis can be extended to the Arabic Exceptional Case Marking structures to be discussed in chapter 5. Under the theory of barriers adopted here, a super-operator analysis, however, raises a problem of Case conflict in context where the moved NP would be assigned two Cases by different Case assigners: one at D-structure and the other at S-structure. The problem of double Case-marking is not insurmountable though. I leave this as an open issue and adopt a base-generation analysis.

As for determining the position in which the Ld'd NP is base-generated, I argue for adjunction to IP.

3.7 Adjunction to IP

If LD is a base-generated structure, the position in which the Ld'd NP is base-generated needs to be specified. It is important to distinguish between two types of positions: those which are projected and those which arise from adjunction. While projected positions can either be A or \bar{A} -positions, adjoined positions are always \bar{A} -positions. A further distinction is between two types of rules: substitution and adjunction, each having different properties, which follow naturally from the interaction of various sub-theories of UG (cf. Chomsky

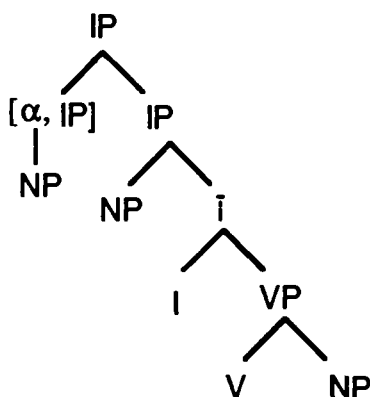
(1986b) and chapter one of this thesis for a discussion of these properties). Concerning adjunction, I assume the following principles, based on Chomsky's theory of segment in which adjunction creates \bar{A} -positions:

(22)

- a. Adjunction is structure-preserving in that it creates segments of an adjoining category (cf. May (1985), Chomsky (1986b: 7)
- b. Adjunction is possible only to maximal projections NP, VP, IP, and CP that are nonarguments as a consequence of the Θ -Criterion (cf. Chomsky 1986b: 6).

Following these ideas, I propose that the Ld'd NP in the data considered so far is base-generated in a position adjoined to IP (dominated by IP and sister to IP) as in (23). The adjoined position is termed $[\alpha, IP]^8$:

(23)



I shall argue in section (3.15.2) that LD can also be adjunction to CP and that it is possible to adjoin Ld'd NPs multiply to CP (each NP is in a position sister to CP and is dominated by CP) and to IP (each NP is in a position sister to IP and dominated by IP) simultaneously in a single clause. Here I show that a complementizer can precede a Ld'd NP arguing partly for the IP adjunction hypothesis. In fact, in all the examples in (9), an accusative Case assigning

⁸ Further assumptions are needed to block the Ld'd NP from being in the COMP positions, or the specifier position of CP. This we will do when we return to LD in section (3. 15) below.

complementizer *?inna*⁹ can appear to the left of the Ld'd NP (cf. the data in (59)) below. To illustrate this, consider sentence (21) in which the NP *Zayd-un* is Ld'd in a position adjoined to IP:

- (24) [_{IP} Zayd-un [_{IP} darab-tu-hu]]
 Zayd-nom hit-1sg-ob cl
 "As for Zayd I hit him"

When the complementizer *?inna* is realized, (25) results, a non-embedded sentence, with the Ld'd NP surfacing in the accusative *-an* instead of nominative Case *-un* :

25. [_{CP} ?inna [_{IP} Zayd-an [_{IP} darab-tu-hu]]]
 as for Zayd-acc hit-1sg-ob cl

Note that this process of adjunction to IP can be multiple¹⁰, as is evidenced in the following, where the NPs *Zaydun* and *sadiquhu* are Ld'd each in a position adjoined to IP. The NPs are identified as being Ld'd (base-generated) since they exhibit the typical properties of LD. They are in the nominative Case, necessarily bound to a pronoun denoted by the clitic *-hu*, necessarily definite and specific, and under further embedding, their coreference with the bound pronoun would be impervious to barriers, as expected since I analyse them as base-generated. These properties are not attested in topicalization, a structure derived by movement, as will be seen in the next chapter:

- (26) [_{IP} Zayd-un_i [_{IP} sadi:q-u_k-hu pro_i [_{IP} darab-tu-hu pro_k]]]]
 Zayd-nom friend-nom-his hit-1sg-ob cl
 "As for Zayd, his friend, I hit him"

⁹ cf. section (3.16) for arguments that *?inna* subcategorizes for an NP to which it assigns accusative Case. *?inna* is one of a number of complementizers with these properties of subcategorization and Case-marking.

When the complementizer *?inna* is specified, (27) results, in which *?inna* appears to the left of the NP *Zayd*.⁸ Again, the NP *Zayd* in the first adjunction site appears in the accusative Case:

(27) *?inna* [_{IP} *Zayd-an*_i [_{IP} *sadi:q-u-k* hu pro_i [_{IP} *darab-tu-hu* pro_k]]]

Suppose, then, that Ld'd NPs are adjoined to IP, an issue to be discussed further in section (3.13). Now I turn to the interpretation of Ld'd NPs.

3.8 Interpretation of LD

This section is concerned with the question of how a LD'd NP is interpreted. Consider the following sentence:

(28) *Zayd-un*_i *safad-na-hu* pro_{i/k}
Zayd-nom *help-1pl-ob cl*
 "As for Zayd, we helped him"

Notice that the index assigned to the NP *Zayd-un* must be identical to the index assigned to the resumptive pronoun. (28) is ungrammatical if the two elements bear different indices. This fact can be explained by the principle of Full Interpretation (PFI) of Chomsky (1986a), and the analysis that the NP *Zayd-un* is generated in an \bar{A} -position at the periphery of IP (adjoined to IP), as in (29):

(29) [_{IP} *Zayd-un* [_{IP} *safad-na:-hu* pro]]

The PFI requires that every element of PF and LF be interpreted. An argument, for example, is interpreted by virtue of being in a Θ -position, and a *wh*-phrase in the specifier position of CP is interpreted by binding a variable. How is a Ld'd NP in the \bar{A} -adjoined position interpreted? As will later be explained, it is

⁸ In fact, *?inna* can also appear in a position immediately following the first Ld'd NP *Zayd* as (1) illustrates. In such cases, the NP *Zayd-un* may be analyzed as a base-generated Ld'd NP adjoined to CP:

(1) [_{CP} *Zayd-un* [_{CP} *?inna* [_{IP} *sadiq-a-hu* [_{IP} *darab-tu-hu*]]]
Zayd-nom *that* *friend-acc-gen cl* *hit-1sg-gen cl*

interpreted by a phenomenon of predication which may involve coindexation with a Θ -position.

A position adjoined to IP is an \bar{A} -position. It is not a position to which a Θ -role can be assigned at D-structure. The NP in this position does not assume a grammatical function, nor is it subcategorized, nor selected by a lexical head. Furthermore, the pronoun it binds acts like a variable in that it is assigned a Θ -role and its binder must be in an \bar{A} -position. Put differently, the position of the Ld'd NP is not a Θ -position, defined as a position where at D-structure a Θ -role is assigned to it by a lexical head.

That the position adjoined to IP is an \bar{A} -position to which no Θ -role is assigned, is supported by certain facts of Arabic -- notably the possibility of left-dislocating non-referential (pleonastic) pronouns in the IP adjoined position. Arabic has a recourse to the use of clitics to regularize structures of type (30). Following the analysis of clitics developed in Al-Bayaty, 1989, cf. also 3.2.2 and 3.2.3 above), the clitic *-hu* in (30b) licenses the pronoun *pro* :

(30)

- a. *?inna [_P qa:ma řamr-un]
 that stood up řamr-nom
- b. ?inna-hu [_P pro [_P qa:ma řamr-un]]
 that-expl-cl stood up řamr-nom
 (It is true that) řamr stood up."

Notice that it is crucial for the grammaticality of (30b) that *pro* be non-referential. If *pro* and the subject NP řamrun , which is compatible with *pro* in terms of the features of person, gender and number, are assigned the same index, the sentence will be ruled out by the binding theory as it applies to R-expressions:

- (31) *?inna-hu_i [_P pro_i [_P qa:ma řamr-un_i]]
 that-expl-cl stood up řamr-nom

Principle C of the binding theory requires R-expressions to be free, which is not the case in (31) since the NP *ʃamrun* is bound by *pro* in the more inclusive IP. Hence, the only interpretation available for *pro* in (31) is that of being non-referential. If there is no lexical subject but, instead, a pronoun (AGR), it will be correctly coindexed with *pro* in the IP adjoined position, making the latter referential:

- (32) ?inna-hu_i [_{IP} pro_i [_{IP} qa:ma-AGR_i]
 that-expl-cl stood up-3sgm
 "(It is true that) he stood up."

The element *pro* in the IP adjoined position in (30b) is pleonastic -- i.e., it does not assume a Θ -role, like existential *there* and pleonastic *it* in English, nor null elements inserted to fill an obligatory syntactic position, like pleonastic *pro* in Romance languages.

Assume that the Ld'd NP is assigned the index of the pronoun in the Θ -position by an interpretive rule, the "predication rule" of Chomsky (1982) that maps LF to LF'. The predication rule determines that the clause following the \bar{A} -position, taken as an open sentence, is predicated of the NP in that position via identifying the indices on the NP and the resumptive pronoun. I assume that this is the general principle of LD and relative clause interpretation. Such an analysis will be extended to free and headed relatives which will be discussed briefly in chapter (4) .

The predication rule can be subsumed under the PFI in the following way. The PFI requires (among other things) that, in order to be interpreted, the Ld'd NP be uniquely associated with a position which is assigned a Θ -role. In other words, PFI associates one to one R-expressions and Θ -positions, and prevents two NPs from being linked to a single Θ -position. For example, the following association between R-expressions and Θ -positions is excluded:

(33) * R-expression_i R-expression_k Θ-position_{i/k}

(34) • Zayd-un_i safad-na-hu pro_k
 Zayd-nom help-1pl-ob cl
 "As for Zayd, we helped him"

This violates the unique coindexation requirement of the PFI. A noun phrase at the level of Logical Form must be uniquely identified. That is it must be possible to specify what semantic relation an NP fulfills with which predicate. It could be claimed that at LF each NP must be identified by a unique Case feature. These requirements can be deduced from a single general condition which states that interpretation is a unique characterization. While nothing prevents an NP with independent reference from filling the IP adjoined site, the requirement that the Ld'd NP be uniquely linked with a Θ-bearing argument rules out a sentence such as (35a) below, and it correctly rules in (35b). The sentence contains two NPs multiply adjoined to IP:

(35)
 a. • Zayd-un Xa:lid-un darab-tu-hu/-hum
 Zayd-nom Xa:lid-nom hit-1 sg-him/them
 "As for Zayd, as for Xa:lid I hit him/them"
 b. Zayd-un_i Xa:lid-un_k darab-a_k-hu_i
 Zayd-nom Xa:lid-nom hit-3sgm-him
 "As for Zayd, Xa:lid hit him"

(35b) is grammatical since the NPs *Zayd-un* and *Xa:lid-un* are coindexed with different thematic position; *Zayd-un* is coindexed with the pronoun *pro*, denoted by the clitic *-hu*, which is filling an object position. *Xa:lid-un* is coindexed with AGR in the INFL node of the IP. Hence, they derive their Θ-interpretation from two different sources.

The multiple LD structure in (36) below is interpreted in a similar fashion:

(36) Zayd-un_i sadi:qat-u_k-hu_i jalas-tu fi bayt-i-ha_k
 Zayd-nom friend-nom-gen cl sat-1sg in house-gen-her
 "As for Zayd, as for his friend, I sat in her house"

The two NPs *Zayd-un* and *sadi:qat-u* are Θ -indexed with two different genitive sites, thereby deriving their Θ -interpretation, as required by the PFI.

What cases (31) and (35a) illustrate is that while the adjunction site is open at D-structure, the licensing conditions at S-structure and LF intervene to block ungrammatical derivations.

If a base-generation analysis of LD and the predication rule outlined above are assumed to be a way of satisfying the PFI, the obligatory presence of a resumptive pronoun in LD is immediately explained. In effect, the contrast between (3a) and (3b) above, repeated in (37), is explained:

- (37)
- | | | | |
|----|----------------------------------|-------------------|----------|
| a. | al-rijal- u_i | safad-na-hum $_i$ | pro $_i$ |
| | the-men-nom | help-1pl-obcl | |
| | "As for the men, we helped them" | | |
| b. | • al-rijal- u_i | safad-na t_i | |
| | the- men-nom | helped-1pl | |
| | "As for the men, we helped" | | |

(37a) has an object clitic which licences a resumptive pronoun *pro* and the sentence is grammatical. (37b), on the other hand, lacks a clitic; thus a resumptive pronoun is not licensed in the object position. The NP *al-rija:lu* 'the men' in both sentences bears nominative Case. I attributed this Case to a default nominative mechanism available to Arabic (cf. 16 above) to license NPs in Ld'd and right dislocated positions. This mechanism is used in contexts where there is no structural governor, i.e. as a last resort. There is a trace instead and the sentence is ruled out. Since LD is not the result of a movement rule, there cannot exist a trace in (37), and, since there does not exist a resumptive pronoun in (37b), the predication rule cannot operate violating the PFI. This raises the question of why LD can not be derived by movement. Observe that topicalization is derived by movement:

(38) al-rijal-a_i safad-na t_i
 "the men, we helped"

If LD is derived by movement, Case conflict would arise since a Ld'd NP is assigned nominative Case by default and since it would inherit another Case -- accusative in (37b) -- from its source. No Case conflict arises in (38) since the topicalized NP is assigned a single Case.

I can make the Case Filter and hence Case conflict follow from the PFI on the assumption that NPs whether in A-positions or \bar{A} -positions must be Case-marked in order to be visible to the PFI. Visibility can be defined as a one Case chain. PFI filters out structures with no Case or with more than one Case feature. If this is true, then the Case Filter is eliminated as an independent principle of the Government and Binding theory. This approach will be discussed further in chapters 5 and 6.

3.8.1 Null Resumptive Pronouns:

It was suggested in the preceding section that the Ld'd NP is interpreted via a predication rule which uses a resumptive pronoun. If this approach is correct, it does not seem to account for cases in which a subject NP is Ld'd as there is not a resumptive pronoun in the subject site, nor is there a clitic marking it. Although sentences with Ld'd subjects, such as (9a) above, have no overt resumptive pronouns, a unified account of LD can be maintained by assuming that these sentences have null resumptive pronouns. The motivation for null resumptive pronouns comes from the following sentences in non-emphatic contexts. The sentences can optionally contain a lexical resumptive pronoun

huwa :
 (39) al-furat-u_i ya_i-fidu (huwa_i) fi-l-sfta?-i
 the-Euphratese-nom 3sgm-flood it in-the-winter-gen
 "The Euphratese, it floods in the winter"

Notice that (39) can also be introduced by the complementizers *?amma*: 'as for' and *?inna* in (40) and (41) respectively. The latter has an emphatic overtone; thus I shall gloss it as 'that' and translate it as 'it is true that'. The morpheme *fa-* in (40) is an enumerator¹¹ (enum.):

(40) *?amma* al-furat-*u*_i *fa-ya*_i-*fidu* (*huwa*_i) *fi-l-fita?*-*i*
 as for the-Euphratese-nom enum-3sgm-flood it in-the-winter-gen

(41) *?inna* al-furat-*a*_i *ya*_i-*fidu* (*huwa*_i) *fi-l-fita?*-*i*
 that the-Euphratese-acc 3sgm-flood it in-the-winter-gen

huwa is a resumptive pronoun coindexed with the Ld'd NP *al-furat-u* and the third person agreement element *ya-*. On the basis of (39), it is plausible to propose null resumptive pronouns in sentences such as (9a). The presence of null resumptives allows the interpretation of Ld'd subjects by coindexing.

Further support comes from the fact that a Ld'd subject can be linked to a null subject inside a syntactic island. In (42) the NP *at-tula:bu* is Ld'd in an \bar{A} -position, and is linked to the subject pronoun *u:* with which it must agree in person, number and gender. Thus, (43) is ungrammatical since the verb agrees with the Ld'd NP only in gender:

(42) *at-tula:b-u*_i *?a*rifu l-*?usta:ḥ-a*_k *allaḥi qa:bal-u:*_i -*hu*_k
 the-students-nom I know the-teacher-acc whom met-3pl masc-obcl
 "The students, I know the teacher whom they met"

(43) * *at-tula:b-u* *?a*rifu l-*?usta:ḥ-a* *allaḥi* *qa:bal-a-hu*

3.9 On the Notions Definiteness and Specificity:

In section (3.2.4), a semantic prohibition against non-specific NPs was mentioned -- namely, non-specific NPs cannot be Ld'd. Only specific NPs can be Ld'd. I suggested that the term *specific*, rather than *definite*, is more

¹¹ The morpheme *fa-* may be rendered 'and so' or 'thereupon, and consequently'. It is used for conjunction *harf fatif*, or, more accurately, for classification and gradation *harf tartiib* indicating that the objects or clauses enumerated follow one another in time and that they are linked by some factors, such as those of cause and effect.

appropriate for referring to this constraint. However, this type of constraint has yet to be accounted for. In particular, an explanation is needed for the different constraints bearing on the initial NP, as in (44-45):

(44)

a. **ar-rajul-u_i** **qa:bal-tu-hu_i**
the-man-nom **met-1sg-ob cl**
 "As for the man, I met him"

b. * **rajul-un** **qa:bal-tu-hu**
a man-nom **met-1sg-ob cl**
 "**As for any man, I met him"

(45)

a. **at-taqri:r-a_i** **qara?-tu** **t_i**
the report-acc **read-1sg**
 "The report_i, I read t_i"

b. **taqri:r-a_n** **qara?-tu** **t_i**
a report-acc **read-1sg**
 "A report_i, I read t_i"

In (44a-b), the NP (*ar*)-*rajul-u* (*n*) is Ld'd. However, (b) is ungrammatical since the NP is non-specific. In (45), the NP (*at*)-*taqri:r-a*(*n*) is topicalized from the object position occupied by the trace *t*. The two sentences in (45) are grammatical although the topicalized NP in (b) is non-specific. Topicalization will be dealt with in Chapter (4). The question is how can we characterize the feature of specificity in the grammar and, at which level of representation? If I assume the thesis of the autonomy of syntax, then syntactic principles applying prior to LF cannot have access to such semantic information. They can be adequately accounted for only at LF which contains rules assigning scope interpretation, such as quantifier raising (QR) (May, 1977). The approach to the semantic constraints that I will propose is very much compatible with the predication approach outlined in the preceding section.

The account of semantic constraints on LD that has been suggested in the literature has been a functional one, based on the concepts of theme and

rheme of the Prague School of Linguistics (Danesh, 1964, Benesh 1968). The restriction on what can become a Topic is explained in terms of functional considerations. The Prague School was committed to the belief that the structure of sentences is to be analyzed in terms of two functionally-based notions: theme and rheme. Theme is that part of the sentence which indicates information already known to the speaker and the listener from preceding context. The rheme, on the other hand, represents new information which the speaker intends to introduce. The Ld'd NP constitutes old information that is known by both speaker and listener. Thus, "only objects and concepts that have been mentioned and recorded in the registry of the present discourse can become themes of sentences. Nouns of unique reference in this universe of discourse, such as the sun, the moon, my wife, my children, seem to be in the permanent registry. Once their entry in the registry is established, they do not have to be reentered for each discourse" (Kuno, 1973: 39).

Reinhart (1982) argues that topichood cannot be defined as old information, both on theoretical and empirical grounds, nor can the topic role of an expression be identified on referents. The details of Reinhart's arguments are not relevant here, so the discussion will be limited to the following remarks. She points out that indefinite NPs can be used as specific and generic; in which case, they notably behave as referential expressions denoting an individual or a set. She provides examples, such as the following:

(46)

- a. When she was five years old, a child of my acquaintance announced a theory that she was inhabited by rabbits.
- b. He told us about a child of his acquaintance that, when she was five years old, she announced a theory that she was inhabited by rabbits.

By the old information approach, the underlined expression in (a) cannot be a topic since it represents new information. In other words, the referent cannot be assumed to exist in the hearer's immediate awareness.

Now, consider the following sentence of LD¹²:

- (47) rajul-un [_{ADJ} salih-un] ja:ʔa-ni
a man-nom fair-nom came-1sg ob cl
"A fair man came to me"

The sentence is perfectly grammatical and productive in the language. One cannot say that the speaker has already referred to the Ld'd NP such that the listener knows what the speaker is talking about. Of course the adjective is not sufficient to identify the man in question to the extent that he is a particular individual who is known to the listener, but it does specify him in that he is a member of the class of people categorized as being fair. In this sense, it is more specific than the NP in (44b). Notice that neither the NP in (44b), nor the NP in (47) are definite, yet only the latter is left-dislocatable; (44b) is barred.

Furthermore, the Ld'd NP can be specified morphologically. Thus the following sentence is grammatical:

- (48) rujayl-un ja:ʔa-ni
a little man-nom came-me
"a little man came to me"

As the translation indicates, the diminutive morphology has the same force and effect as a syntactic category in the specification of the Ld'd NP.

In some cases, a number of factors make Ld'd NPs specific, such as contrastiveness and belonging to a defined class. Consider the following sentence taken from Sibawayh, P. 87.

¹² The discussion here draws on Ayoub (1981).

(49)
 ?an-na:s-u rajula:ni rajul-un ?akram-ta-hu
 the-people-nom man-dual: a man-nom honoured-2sg-ob cl
 wa-rajul-un ?ahan-ta-hu
 and-a man-nom despised
 "People are of two types: those whom you honour and those whom you despise."

It is clear that the specified character of the two Ld'd NPs is not effected by the internal structure of the NPs themselves but on the global interpretation of the sentence – the relation of the Ld'd NP with the predicate, the contrastive values of the predicates, and the relation of the predicates with the preceding existential predication. With respect to the notion of predication, consider the examples in (50) where the Ld'd NP in (a) is an indefinite specific NP and not a representative of a defined class. The sentences are taken from Ibin Hisham, p.

613.
 (50)
 a. baqarat-un takallam-at
 a cow-nom spoke-3sgf
 "A cow spoke"
 b. *rajul-un ma:t-a
 a man-nom died
 "**any man died"

In (50a and b), the Ld'd NP is indefinite specific. However, only (50a) is grammatical; (50b) is not. The relation between the Ld'd NP and the predicate is revealing for understanding the contrast between the two examples in (50). The oddity and exceptionality of the event denoted by the predicate in (a), and its naturalness in (b), suggest an underlying contrastive value which allows the Ld'd NP in (a) to pick out a more or less determinate object or set of objects. The contrastiveness is between animate non-humans and animate humans. The fact that the former does not possess language makes it unnatural for a cow to speak, which renders the NP specific. In contrast, in (b), death is normal

among humans. Thus, the predicate does not make the NP specific; therefore, the sentence is ruled out.

It follows from the preceding discussion that it is incorrect to say that an NP must be [+definite] to be left-dislocatable. What determines whether an NP is left-dislocatable or not depends on whether the pertinent NP is specific -- not on whether it is definite. I suggest that the feature [α specific] be used and that the term definite be reserved for referring to the syntactic feature that determines the presence or absence of the determiner *?a/* - "the".

The question to ask is, why should the Ld'd NP always be [+specific] ? Is it because of functional constraints on the sentences, or because of grammatical reasons? In what follows I argue in favour of the second hypothesis. Before I proceed, however, I briefly discuss the relevant features of topicalization as they are crucial for the argumentation to follow.

Topicalization in Arabic is obtained in two ways -- with clitics and also without clitics. The latter is illustrated in (45a) above and repeated in (51a):

(51)

- a. **taqrir-an_i** **qara?-tu** **t_i**
 a report-acc **read-1 sg**
 "A report_i I read t_i "
- b. **?at-taqrir-a_i** **qara?-tu-hu_i** **t_i**
 the report-acc **read-1 sg-ob cl**
 "The report_i I read t_i "

The topicalized NP in each case is moved from the complement position of V leaving a trace *t* with which it is coindexed as an automatic result of move- α .

It will be argued in Chapter (4) that this movement is adjunction to IP; (b) has a clitic coindexed with *t*, together coindexed with the topicalized NP.

The example in (44b), repeated below as (52), illustrates a contrast, which has not been hitherto explained, between LD and topicalization with no clitics (51a):

- (52) • rajul-un qa:ɒal-tu-hu
 any man-nom met-1sg-ob cl
 "As for any man, I met him"

It is important to note here that in all examples which illustrate the operation in (51b) (topicalization with clitics), the topicalized NP must be specified. Thus (53), parallel with (51b) but with no determiner attached to the topicalized NP, is barred:

- (53) • taqri:r-an qara?-tu-hu t
 report-acc read-1sg-ob cl
 "Any report I read"

The constraint that the topicalized NP with clitics, as opposed to that without clitics (cf 51a), must be [+specific] has been noted by Ibin Hishaam (1964), p. 783, as follows:

"fartu l-mansu:bi ʔala l-ʔishtiʔa:li ʔan yakuuna qa: bilan
 lir-rafsi bil-l-ibtida:ʔi"

The translation reads as follows: "the condition by which I can assign accusative Case to a noun phrase by **ʔishtiʔa:l** 'Topicalization' can also assign it nominative Case by **ʔibtida:ʔ** 'Left-dislocation'". In other words, the same semantic constraints apply to the Ld'd NP and to the topicalized NP with a clitic. Both must be specified. The topicalized NP with no clitic, on the other hand, is not subject to these constraints. It does not have to be specified. How can this contrast be explained?

Notice that what is common between LD (44a), repeated in (54),

- (54) ar-rajul-u_i qa:bal-tu-hu_i
 the-man-nom met-1sg-ob cl
 "As for the man, I met him"

and topicalization with clitics (51b), is the presence of a clitic that is coindexed (marked coreferential) with the NP. In section (3.9), it was suggested that a clitic is nominal in nature since it possesses the features person, number, and gender which are the required features for licensing the pronominal element *pro*. Let us suggest that clitics and pronominals are also marked [+specific], and that, since their antecedent is assigned the same index, the antecedent must be compatible with them in terms of features (person, number, gender, specificity, etc.). This is a matching condition on nominal elements which are assigned the same index. Thus, a clitic and a pronoun would have the features person, number, gender, and [+specific]. And, by the matching condition, their antecedent could not be unspecified, at least in cases where the antecedent is interpreted by predication -- coindexation with the empty category (ec) *pro* or *trace* that is governed and licensed by the clitic (cf. Al-Bayaty 1989 for details). In (51b) and (54), the lexical NP antecedent is interpreted by coindexation with a Θ -position, which is also coindexed with a clitic. This position is occupied by *t* in (51b) and by *pro* in (54).

This approach has a certain plausibility because, in a sense, the antecedent depends on the clitic coindexed with an ec. The antecedent and the clitic constitute a discontinuous element, a single and same occurrence. This is why there should be an agreement in specificity and in other features between the antecedent and the clitic. Notice that although clitics and pronouns do not have the same properties, clitics do have the same semantic function as pronouns¹³ in that both refer to objects or concepts.¹⁴

¹³ Regarding the differences between clitics and pronouns, cf. Brown and Sempere (1985).

¹⁴ The Arab grammarians considered clitics and pronouns as being [+specific]. The following are also considered [+specific]: proper nouns, nouns bearing the determiner *?al-*, relative pronouns of the *?allađi*-type, demonstratives, and NP's in genitive constructions (construct phrase). The attachment of the determiner *?al-* to a noun is considered the marker, par excellence, of definiteness and specificity.

Assuming this to be the case, the contrast between (51a, topicalization with no clitics) and (52) on one hand, and (51b, topicalization with clitics) and (54, LD) on the other hand, is immediately explained. The semantic constraints bearing on the NP in (53-54) result from the agreement constraints between the values of the clitic and the values of the antecedent. In (51), there is no clitic; hence, there is no pronoun in the Θ -position coindexed with the antecedent. Instead there is *t* in that position. Thus the antecedent is allowed to be unspecified.

As for (52) repeated below:

- (55) * rajul-un qa:bal-tu-hu
 a man-nom met-1sg-ob cl
 "As for any man, I met him"

Note that this utterance is ungrammatical as a sentence but is perfectly grammatical as a complex NP in a relative clause where the complex NP forms a constituent of predication:

- (56)
 a. rajul-un qa:bal-tu-hu fi bardada ja:?-a ?ila: haflati-na
 a man-nom met-1sg-ob cl in Baghdad came-3sgm to party our
 "a man I met in Baghdad came to our party"

- b. ja:?-a rajul-un qa:bal-tu-hu fi bagdada ?ila: haflatina
 came-3sgm a man-nom met-1sg-ob cl in Baghdad to party-our

Notice that the same sentences (56) without clitics are also grammatical. The absence of a clitic is indicated by **0**:

- (57)
 a. rajul-un qa:bal-tu-0 fi bardada ja:?-a ?ila: haflati-na
 a man-nom met-1sg in Baghdad came-3sgm to party our
 b. ja:?-a rajul-un qa:bal-tu-0 fi bardada ?ila: haflati-na
 came-3sgm a man-nom met-1sg in Baghdad to party-our

The sentences in (56-57) are termed indefinite relative clauses because their head is indefinite and their surface form lacks the definite relative

complementizer (?) *allaḥi*. These sentences are interpreted by the rule of predication at LF in a way similar to LD. Their head, although indefinite, is in fact always rendered specific by the rest of the sentence. Thus the sentences do not pose a problem to this analysis of the semantic constraints in LD and topicalization with clitics.

To summarize this section, I argued that it is incorrect to describe the semantic constraints in LD by using the feature [α definite] and that it is implausible to ascribe these constraints to functional considerations (old versus new information). I suggested instead that the feature [α specific] be used and accounted for these semantic constraints in terms of the presence versus absence of a clitic, in line with the predication analysis developed in the preceding section.

Since non-specific NPs are not dislocatable, one would expect that idiom chunks would not be dislocatable since they have no independent reference outside their particular constructions and are, therefore, non-specific. The next section examines idiom chunks.

3.10 Idiom Chunks

Idiom chunks are non-referential and thus non-specific (non-referentiality being a special case of non-specificity). The unacceptability of the sentences in (58) indicates that idiom chunks are not dislocatable. The (a) sentences corresponding to the non-left-dislocation form are grammatical:

(58)

- a. Our goose seems to be cooked.
- b. *Our goose, it seems to be cooked. (We seem to be in trouble)

(59)

- a. rajaḥ-tu bi-ḫufay hunayn
"I returned empty handed"

b. *hunayn-u rafa-tu bi-Xufay-hi
 Hunayn-nom returned-1sg with-slippers-gen-cl
 "**As for empty handed, I returned that way"

(60)

a. darab-a bi-hi farda ?al-ha:?iti
 "He totally rejected/ruined it"

b. *?al-ha:?it-u darab-a bi-hi farda-hu
 the-wall-nom hit-3sgm in-ob cl middle-gen cl
 "As for it, he totally rejected it"

(61)

a. farif-tu-hu haqqa ?al-marifat-i
 "I knew him for sure"

b. *?al-marifat-u farif-tu-hu haqqa-ha
 the-knowledge-nom knew-1sg-ob cl truth-gen cl
 "As for him, I knew him for sure"

(62)

a. la: ya-mla?u fayn-a-hu tura:b-u al-?ard-i
 not 3sgm fill up eye-acc-his soil-nom the-earth-gen
 "The more he gets, the more he wants"

b. *al-?ard-u la: ya-mla?u fayn-a-hu tura:b-u-ha:
 the-earth-nom not 3sgm fill up eye-acc-his soil-nom-its
 "As for the earth, its soil doesn't fill up his eyes"

The reason the (a) sentences are ungrammatical is that the lexical NPs *Hunayn-u* , *?al-ha:?it-u* , and *?al-marifat-u* , are in a Ld'd position which is a non- Θ -position (no Θ -role is assigned to it). These lexical NPs are not referential expressions and hence are non-specific. They are part of a single R-expression to which a single Θ -role is assigned, as in the (b) sentences. No idiomatic interpretation is possible in the (b) sentences since the elements forming the idiom have been split.

The same reason explains the ungrammaticality of (63a) in which the construct phrase --the sequence 'N NP' is a fixed construction:

(63)

a. *?al-Xubz-u ?akal-tu rayif-a-hu
 the-bread-nom ate-1sg loaf-acc-gen cl
 "**As for the bread, I ate its loaf"

- b. ʔakal-tu rayi:f-a ʔal-ʁubz-i
 ate-1sg loaf-acc the-bread-gen
 "I ate the loaf of bread"

The preceding discussion focused on the non-left-dislocatability of non-specific items, including idiom chunks. Left-dislocating a lexical NP which is part of an idiom produces ungrammaticality since the NP will be in a non- Θ -position, and since there will not be a Θ -position available with which the NP can be coindexed.

3.11 LD and the Complementizer *ʔinna*

In what follows I shall examine a few additional sets of data which illustrate an aspect of Arabic LD that I have not yet investigated. In all of the cases of LD previously examined no complementizer appeared in the main clause, and the Ld'd NP was invariably nominative. I suggested that the nominative Case is a default LD Case. Now, I discuss this phenomenon -- main clause LD introduced by the complementizer *ʔinna*.

3.11.1 Introductory Remarks

In sections (3.7), (3.13), (3.15.1), and (3.15.2), I proposed and argued that the Ld'd NP is base-generated in a position adjoined to IP. In the present section, I argue for this proposal by examining the status of the NP that immediately follows the complementizer *ʔinna*.

In Arabic, a lexical [-wh] complementizer can be realized in a single sentence:

- (64) ʔinna Hasan-an_i ya_i-stabtinu
 that Hasan-acc 3sgm-introspect
 " (It is true that) Hasan is introspecting"

In other words, the complementizer *ʔinna* does not only introduce an embedded sentential complement, but can introduce a structure consisting of a

single clause as in (64) above. There are two basic facts to note about this complementizer: first, it must be followed by an NP which bears accusative Case, signalled by *-an*. The NP *Hasan-an* in (64) bears accusative Case. Second, the sentence has the order *?inna-NP- V*. The order *?anna-V-S(subject)-O(object)* is excluded. Thus, while (64) is acceptable, (65a) where *?inna* is followed by a verb, is excluded. (18b) where *?inna* is followed by an NP marked nominative, is also rejected:

- (65)
- a. *?inna ya-stabtinu Hasan-un
 that 3sgm-introspect Hasan-nom
- b. *?inna Hasan-un ya-stabtinu
 nom

One question to raise here concerns whether the NP that obligatorily follows *?inna* is moved or base-generated in the pre-IP position. In the following sections, I will discuss the status of this NP, but first will provide essential data that needs to be considered.

3.11.2 Data Sets:

- (66)
- a. ?inna al-?awlad-a_i na:m-u_i pro_i (subject)
 that the-boys-acc slept-3mpl
 "As for the boys, they slept"
- b. ?inna al-?awlad-a_i sa:ʔad-na-hum_i pro_i (object)
 "As for the boys-acc we helped them"
- c. ?inna Aliy-an_i ja?-at ?umm-u-hu_i pro_i (possessive)
 that Ali-acc came-3sf mother-nom-his
 "As for Ali, his mother came"
- d. ?inna Aliy-an_i ?a-ʔta:-hu_i pro_i Hasan-un al-kita:b-a (indirect obj)
 that Ali-acc 1sg-give-obcl Hasan-nom the-book-acc
 "As for Ali, Hasan gave him the book"
- (obj. of a prep)

- | | | | | |
|----|---------------------------------|--------------|---------------------|------------------|
| e. | ?inna ?ad-diuyuf-a _i | rahib-u: | bi-him _i | pro _i |
| | that the-guests-acc | welcome-2mpl | in-obcl | |
| | "As for guests, welcome them" | | | |

3.11.3 Comments and Analysis:

The only difference between the paradigm (9) and the paradigm (66) lies in the presence versus the absence of the complementizer *?inna*, and in the Case assigned to the initial NP; it is nominative in the former and accusative in the latter. This difference aside for the moment, the paradigm (66) is simply a repetition of (9), as I shall proceed to verify immediately.

3.11.4 Range of Distribution, Specificity and Resumptives

It is easy to show that the NP following *?inna* can be identified with the Ld'd NP with no *?inna* preceding it. First this NP can be coindexed with a wide range of thematic positions. Thus, note the direct parallels between (66) and (9-10) above. Distributionally, the initial NP in the two paradigms functions quite similarly. It has the same range of distribution. This means that it can be coreferent with a pronoun in the position of subject, object of a verb, possessive, indirect object, and object of a preposition, as illustrated in (66). Resumptive pronouns are displayed in the usual manner. The same semantic constraints --- definiteness and specificity --- apply to the NP following *?inna*; thus (67) is excluded since the NP *diuf-an* is not specific:

- | | | | |
|------|-----------------------------------|--------------|----------|
| (67) | *?inna diuf-an | rahib-u: | bi-him |
| | that guests-acc | welcome-2mpl | in-ob cl |
| | "As for the guests, welcome them" | | |

Like the LD structures in (9), the structures in (66) will be ungrammatical if the NP after *?inna* has no coreferential pronoun. The argumentation presented in the preceding sections can be directly applied to the structures in (66). The NP that immediately follows *?inna* is in a pre-IP \bar{A} -position interpreted by coindexation with an element which is, in the above examples, a

pronoun. Similar to LD structures without *?inna* as in (9), the relation between the lexical NP and its coindexed resumptive pronoun can be unbounded as (68) shows:

(68)
 ?inna al-?amirat-a_i dann-at ?anna Hasan-an qa:l-a
 that the-princess-acc thought-3sgf that Hasan-acc said-3sgm
 ?inna Zayd-an zafam-a ?anna-ha_i tu-hibu al-malik-a
 that Zayd-acc claimed-3sgm that-cl3sgf 3sgf-like the-king-acc

"(It is true that) the princess thought that Hasan said that Zayd claimed that she likes the king"

3.12 Subjacency Violations

The behaviour of the structures in (66) vis-a-vis constraints on movement is identical to that of (9). The coreferential linkage between the initial NP and the resumptive pronoun may freely penetrate syntactic islands such as Complex NPs and coordinate NP structures, as shown by (69) and (70) respectively:

(69)
 ?inna al-?amirat-a_i [_{IP} qabal-tu al-malik-a [_{CP} allatði u-hibu-ha_i pro_i]]
 that the-princess-acc met-1sg the-king-acc who 3sgm-like-her
 "As for the princess, I met the king who likes her"

(70)
 ?inna bayda:d-a_i fa:had-tu-ha_i pro_i wa dawa:hi-ha_i pro_i
 that Baghdad-acc saw-1sg-ob cl and suburbs-gen cl
 "As for Baghdad, I saw it and its suburbs"

(64)
 ?inna Zayd-an_i tasa:?al-tu [man [ra?a:-hu_i al-ba:rihata]]
 that Zayd-acc wondered-I who saw-3sgm the-yesterday
 "As for Zayd, I wondered who saw him yesterday"

In (69) the relation between the NP *al-?amirat-u* and the resumptive pronoun holds across a complex NP (two barriers: CP and IP). CP is a barrier since it is not Θ -marked. IP is a BC, and it inherits barrierhood from CP which it

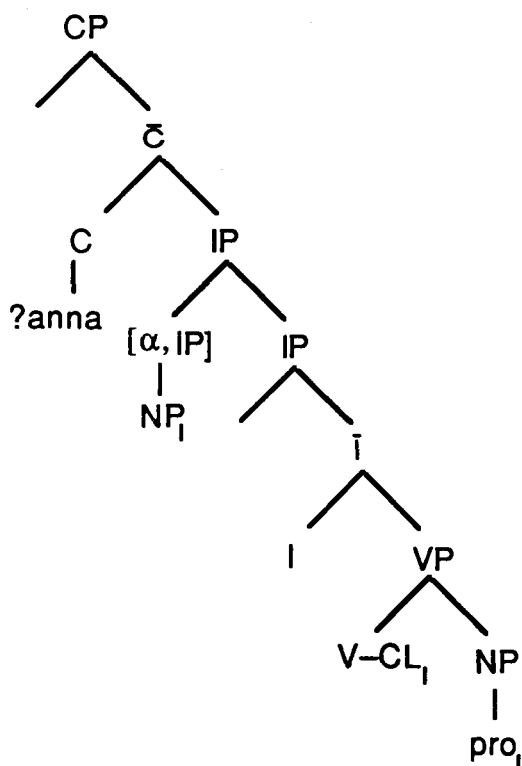
immediately dominates. In (70) the relation between the NP *barda:d-a* and *pro* holds across a coordinate NP, and in (71) the coreference relation holds across a wh-island. From this, one can conclude that movement is not involved and that this NP is base-generated in a position following the complementizer. I suggest that it is adjoined to IP.

3.13 Adjunction to IP

The IP-adjunction of Ld'd NPs that appear after *?inna* is illustrated in

(65):

(72)



Since the structures with *?inna* and those without it are similar in the ways discussed above, a descriptively adequate generalization can be made relating the two structures. Let us hypothesize that the expansion of C(OMP) is optional. In the former structures, C expands and is realized as *?inna*.

Notice that the striking difference between the LD'd NPs in the two structures is that the NP immediately to the right of the complementizer is assigned accusative Case, while the Ld'd NP with no complementizer preceding it is assigned nominative Case. Earlier it was assumed that the nominative Case assigned to the Ld'd NP is not related to the AGR node, but rather it is a default Case assigned by rule (16) of section (3.2.5). Incidentally, this hypothesis is compatible with the indigenous grammatical tradition as expressed by the Basra School of Arabic grammar.

The accusative Case will not be treated in this section, but I will be reviewed in a later section.

3.15 Multiple Left-dislocation:

Arabic allows multiple adjunction of Ld'd NP's to IP. It also allows Ld'd NPs to be adjoined to CP, as I shall proceed to illustrate.

3.15.1 Multiple Adjunction to IP

An Arabic sentence can contain multiple LD'd NPs as long as they are fully licensed and can be interpreted at LF as required by the Principle of Full Interpretation. Both must be assigned a default nominative Case when the structure in which the particular NPs appear does not contain the accusative Case assigning complementizer *?anna*. If the particular NPs appear with accusative Case indicated as *-an*, or, if the Case of either NP is not morphologically realized, the sentences in which they occur are rendered unacceptable. This is shown in (73) below. 0 indicates the absence of Case. Pronouns must be displayed in the usual manner. The absence of pronouns, as indicated by @, leads to ungrammaticality:

(73) $[_{IP} Hasan- \begin{array}{|l} *0 \\ *an \\ un_i \end{array}] [_{IP} ?umm- \begin{array}{|l} *0 \\ *an \\ uk- \end{array}] \begin{array}{|l} *@ \\ hu_i \end{array}] [_{IP} qa:bal-tu \begin{array}{|l} *@ \\ ha_k \\ her \end{array}]$
 Hasan- nom mother- nom- his met-1sg
 "As for Hasan, his mother I met her."

The two pre-verbal NPs in (73) display the typical properties of Ld'd NPs. When the complementizer *?inna* is realized, a sentence structure like that of (74) is derived. Notice that the first Ld'd NP *Hasan-an* must bear accusative Case, and the second Ld'd NP *?umm-u* must bear the default nominative Case:

(74) $?inna [_{IP} Hasan- \begin{array}{|l} *-un \\ an_i \end{array}] [_{IP} ?umm \begin{array}{|l} *-an \\ -uk \end{array}] -hu_i \quad qa:bal-tu-ha_k$
 that Hasan- acc mother- nom -cl met-1sg-obcl
 "As for Hasan, his mother I met her."

(73) and (74) illustrate multiple adjunction to IP.

The possibility of iteration (or recursion) can be deduced from the structure of UG. The assignment of nominative Case to the Ld'd NP is purely non-structural, perhaps similar to *ga*-marking in Japanese. It is non-structural in the sense that it is independent of government and Θ -marking, and in particular it has nothing to do with the syntactic head of IP, I. Roughly speaking, once the head has jettisoned every position in its Case-grid, *un*-marking takes place as a default process assigning *un* to any NP that is a sister to IP or CP in an ungoverned context, hence the possibility of iteration. If this is true, no principle requires the uniqueness of the Ld'd NP and thus it can be repeated like other adjuncts and modifiers as long as other licensing conditions are not violated. does not violate any principle of UG.

Now, adjunction to CP and IP in the same structure will be illustrate.

3.15.2 Adjunction to CP and IP

Arabic also permits a LD'd NP to occur in a position to the left of the complementizer *?inna* (adjoined to CP) with another LD'd NP adjoined to IP simultaneously in a single clause (75a). It is possible to have a base-generated LD'd NP adjoined to CP and base-generated LD'd NPs iteratively adjoined to IP in a single clause, as in (75c). This NP must always be specified; thus (75b) is ungrammatical. The relation between the NP and the resumptive pronoun is unbounded (75c) and violates the CNPC (75d) and the wh-island constraint (75e):

(75)
 a. $[_{CP} \text{al-?amirat-}u_i \quad ?inna \ [_{IP} \text{Hasan-an}_k \ [_{IP} \text{pro}_k \text{ta-zawwaja-ha} \ \text{pro}_i]]]$
 the-princess-nom that Hasan-acc 3sgm-marry-obcl

"As for the princess, It was Hasan who married her"

b. **?amirat-un ?inna Hasan-an ta-zawwaj-a-ha*
 "As for a princess-nom

c. $[_{CP} \text{al-?amirat-}u_i \quad ?inna \ [_{IP} \text{Hasan-an}_k \ [_{IP} \text{pro}_k \ \text{qa:l-a} \quad ?inna \ [_{IP}$
 the-princess-nom that Hasan-acc said-3sgm that

$\text{Zayd-an}_k \quad [_{IP} \text{zafama} \quad ?anna-ha_i \ [_{IP} \text{pro}_i \quad [_{IP} \text{pro}_i \quad \text{tazawwaj-at} \]]]]]]$
 Zayd-acc claimed that-3sgf cl marry-3sf

"As for the princess, (It was) Hasan who said (It was) Zayd who claimed that got married"

d. $[_{CP} \text{al-?amirat-}u_i \quad ?inna \ [_{IP} \text{Hasan-an}_k \ [_{IP} \ \text{pro}_k \ \text{qabal-a} \ [_{NP} \ \text{ar-rajul-a}$
 the-princess-nom that Hasan-acc met-3sgm the-man-acc

$[_{CP} \ \text{alla}\delta i \ [_{IP} \ \text{ta-zawwaj-a-ha}_i \ \text{pro}_i \]]]]]]$
 who 3sgm-marry-acc-her

"As for the princess, (It was) Hasan who met the man who married her"

e. *al-?amirat-u ?inna Hasana-an tasa:?ala [man [tazawwaja-ha]*
 the-princess-nom that Hasan-acc asked who married-her
 "As for the princess, (It was) Hasan who asked who married her"

As I remarked in the preceding sections, and as can be seen from the data given above, the Ld'd NP immediately following the complementizer *?inna* invariably appears in the accusative Case.

3.16 *?inna* is an Accusative Case Assigner

The purpose of the following section is to argue that *?inna* governs the Ld'd NP and assigns it the accusative Case.

3.16.1 Introduction

In this section, I argue that the Ld'd NP which must immediately follow the complementizer *?inna* receives its accusative Case from *?inna*. Notice that the Ld'd NP in this context, in all the preceding examples, is assigned accusative Case. To explain this, I assume that the complementizer *?inna* and the other related complementizers (henceforth *?inna*)¹⁵ is a type of preposition specified for the feature [+V]. As such, it assigns accusative Case to the NP it governs. Structural confirmation of *?inna*'s verbal quality may come from the fact that they can occur with the direct object clitic. A full clitic paradigm attached to *?inna* is given below. The same paradigm can also occur with the other complementizers given above in this section.

(81)

?inna-ni '1sg', ?inna-na '1pl and dual', ?inna-ka '2sgm', ?inna-kuma: '2m dual',
?inna-kum '2mpl', ?inna-hu '3msg', ?inna-huma: '3 dual', ?inna-hum '3mpl',
?inna-ki '2fsg', ?inna-kunna'2fpl', ?inna-haa '3mf', ?inna-hunna '3fpl'

This hypothesis is consistent with the indigenous grammatical tradition where *?inna* is described as **haruf mufabbah b-il-fifl** 'a verb resembling particle' to the extent that it assigns the accusative Case, governs specifically

¹⁵ These complementizers are *?inna*, *?anna*, *la:kinna* "but", and *ka?anna* 'as though/as if'. They all assign accusative Case to a Ld'd NP which they subcategorize.

NPs, precedes the governed NP, invariably ending in the vowel *-a* like past tense verbs, and it is trilateral, quadrilateral and quinquilateral like the number of radicals in verbs.

I further propose that *?inna* subcategorizes for an IP complement requiring an NP to which *?inna* must assign its Case. The NP is Ld'd in an \bar{A} -position adjoined to IP, and the IP, to which the NP is adjoined, is predicated of (says something about) that NP. I use the term Predication here in the sense of "an aboutness relation" with the rest of the sentence. The IP constituent to which the Ld'd NP is adjoined is a statement about the Ld'd NP. This notion of predication ensures that the Ld'd NP is assigned the same index assigned to the Θ -pronoun in the embedded clause (cf. Chomsky, 1982, footnote 11).

In section (3.16.4), I will argue for the notion of Case inheritance and for the view that Case-assignment takes place under government with an adjacency condition imposed on it. The notion of government that I have adopted and will argue for is the one proposed in Chomsky (1986b) which allows a governor to govern into the specifier position of its complement. (See the discussion in chapter one.)

3.16.2 Subcategorization for IP with an adjoined NP

If one accepts the hypothesis that *?inna* subcategorizes for an IP clausal complement which requires an adjoined NP, then one would expect that only NPs can directly follow *?inna*. This prediction is borne out, as shown in (82). (82a) is grammatical since an NP immediately follows *?inna*. (82b) shows that a verb cannot occur in a position immediately following *?inna*. (82c) shows that a PP cannot appear in that position, and (82d) illustrates the same point for an adverb: ¹⁶

¹⁶ Ibn Hishaam notes that *?inna* can be followed by a PP, as in the following case:

(82)

- a. ?inna Hasan-an ya-hlumu
that Hasan-acc 3sgm-dream
"(It is true that) Hasan is dreaming"
- b. *?inna ya-hlumu Hasan-un
nom
- c. *?inna fi l-qaryat-i ya-hlumu Hasan-un
in the-village
- d. *?inna da:?iman ya-hlumu Hasan-un
always

Notice that PPs and adverbs can be ordered after the NP *Hasan*, as shown in (83a-b); they can also appear in sentence-final position, as shown in (84a-b). The PP appears in boldface, and the adverb in italics:

(83)

- a. ?inna Hasan-an **fi l-qaryat-i** ya-hlumu
- b. ?inna Hasan-an *da:?iman* ya-hlumu

(84)

- a. ?inna Hasan-an ya-hlumu **fi l-qaryat-i**
- b. ?inna Hasan-an ya-hlumu *da:?iman*

The subcategorization and Case-assigning properties of *?inna* stated above account for the marked word order after *?inna*. I have already argued cf. chapter (2) that the word order of Arabic is VSO at S-structure -- an order derived from a D-structure SVO. Note that a VSO order is not admitted after *?inna*. (85a) is excluded:

(1)

?inna *ʕinda-ka* Zayd-an ya-na:m-u
with-2msg cl Zayd-acc 3sgm-sleep-ind

"It is with you that Zayd, he sleeps with you"

Notice, in the first place, that this sentence is unproductive and that the grammaticality of the sentence declines if a PP like *fi l-da:r-i* "in the house" which has no clitic, is used instead of *ʕinda-ka* "with-2sgm clitic. This is shown in (2)

(2) ? ?inna fi l-da:r-i Zayd-an ya-na:m-u
in the-house Zayd-acc 3sgm-sleep-ind

"It is in the house that Zayd, he sleeps in the house"

Cases like these can be accounted for if it is assumed that the PPs in (1) and (2) are preposed to the position immediately following *?inna* by a rule of scrambling which operates at PF. Thus, the PPs in question are moved after *?inna* assigns its accusative Case to the NP *Zayd* at S-structure.

(85)

a. *?inna [IP ya-drus-u INFL Hasan-un]
that 3sgm-study-ind Hasan-nom
"(It is true that) Hasan is studying"

b. ?inna [IP Hasan-an_i [IP pro_i INFL ya-drus-u]]
"(It is true that) Hasan, he is studying"

The reason why (85a) is excluded is that *?inna* has no NP following it to which *?inna* can jettison its Case. *?inna* can be treated as an exceptional Case assigner similar to *for* assigning accusative Case to [NP, IP] in situ. This violates the subcategorization properties of *?inna*. (85b) is admitted since the NP *Hasan-an* which bears the Case of *?inna* functions as a licenser for *?inna*'s clausal complement.

The sentence in (85a) can be "rescued" via the insertion of a clitic *-hu*, which appears attached to *?inna* (86), or by the insertion of a lexical NP *ma*: 'it' as in (87). Otherwise, these examples are "unredeemable":

(86) ?inna-hu ya-drus-u Hasan-un
that-expl-cl 3sgm-study-ind Hasan-nom
"(It is true that) Hasan, he is studying"

(87) ?inna ma: ya-drusu Hasan-un
it

The grammaticality of (86), resulting as a consequence of the insertion of the clitic *-hu*, follows at once from the proposed analysis. Recall that I proposed that the clitic in base-generated structures is coindexed with a 'silent' pronoun *pro*. Assuming this analysis, the clitic in (86) is coindexed with *pro*; and, assuming the adjunction to IP analysis of LD (sections (3.7, 3.13) , *pro* appears adjoined to IP as the licenser of the IP predicate subcategorized by *?inna* :

(88)
?inna-hu_i [IP pro_i [IP ya-drus-u Hasan-un]]]
that-expl-cl 3sgm-study-ind Hasan-nom

The clitic in (88) is required to absorb the Case assigned by *?inna* and to license *pro*, which is adjoined to IP. *pro* in (89) is an expletive (non-referential) pronoun¹⁷, as indicated by the fact that it cannot be coreferent with the subject NP *Hasan-un* :

(89) **?inna-hu_i* [_P *pro_i* [_P *ya-drus-u* *Hasan-un_i*]]
 that-expl-cl 3sgm-study-ind Hasan-nom

The occurrence of *pro* in the IP adjoined position, with the only interpretation possible as being pleonastic (non-referential), i.e, does not assume a Θ -role, argues for the non-thematic nature of this position. The IP predicate does not assign a Θ -role to the position adjoined to it as is evidenced by the fact that expletive empty categories *pro* and *ma*: 'it' appear in the subject position.

According to the analysis of clitics which I am still assuming, the clitic governs the empty category (ec) associated with it. Hence, PRO cannot appear in this position since PRO is always ungoverned due to the binding theory. Given the fact that PRO always counts as an argument and thus whenever it appears, it must be the unique argument of a Θ -chain, the Θ -Criterion also excludes PRO from the IP adjoined position since no Θ -role is ever assigned to it.¹⁸ If expletive PRO is non-existent in (88), then the natural candidate is expletive *pro* (locally) governed by the clitic.

The proposal that an empty category subject exists in the IP adjoined position in (88) is entirely consistent with the Extended Projection Principle ---

¹⁷ This pronoun is termed *dami:r al-ja?n* 'the pronoun of the matter' by the Arab Medieval grammarians, and is described as anticipating a whole subsequent clause. However, in those grammarians' view, the clitic *-hu* itself is the NP pronoun that is subcategorized by *?inna* -- not the empty category symbolized as *pro*.

¹⁸ This is so unless we were to assume the existence of another ec with all the properties and distribution of PRO, except that it does not count as an argument with respect to the Θ -Criterion; such an ec would be an expletive PRO as suggested in Chomsky (1981) and which plays a crucial role in his analysis of the PRO-drop phenomenon. I assume that expletive PRO does not exist due to the PRO theorem and the Θ -Criterion.

that in UG the subject position is always obligatory in the base expansion of IP. Since the subject position is independently needed, I am forced to the most natural conclusion with respect to the structures in this section and similar ones that the subject position is governed by the clitic in (88) and by *?inna* in (87). Thus, governed expletive elements *pro* and *maa* 'it' are the elements that appear when an expletive empty element is required to provide a formal subject for an IP predicate.

Notice that when a full referential subject NP is Ld'd in the IP adjoined position, it must agree with the verb, arguing that the NP acts as a subject of its clause. This is also true for Arabic ECM constructions to be examined in chapter 5, where the ECM'd NP is adjoined to CP, receiving Case but not a Θ -role from a higher verb.

To summarize, then, an expletive ec exists in structures like (88). It is not a variable since it is not bound by an operator; it is not PRO since it is in a governed position with no Θ -role assigned to it. *pro* lacks Case whereas *ma:* is assigned Case by *?inna*. Both are governed by a clitic and *?inna* respectively. When there is an expletive clitic, expletive *pro* must exist to fill in the subject position, thus licensing the IP predicate. In the absence of a clitic, *ma:* 'it' is inserted in the subject position, thus meeting the subcategorization requirements of *?inna* and of the Extended Projection Principle.

Other evidence in support of *?inna* as a Case assigner derives from facts concerning topicalization, which will be discussed below.

3.16.3 Topicalization

Arabic does not allow a topicalized NP to occur in a position after *?inna* at S-structure.¹⁹ (90a), in which the NP *kitab* is topicalized, is ungrammatical. However, the same sentence without *?inna* is grammatical (90b):

(90)

a. *?inna kita:b-an_i qara?-a Hasan-un t_i
 That book-acc read-3sgm Hasan-nom
 "Hasan read a book"

b. kita:b-an_i qara?-a Hasan-un t_i

The question is why can a Ld'd NP be adjoined to IP in structures with *?inna* but a topicalized NP cannot in the same structure? In other words, why can *?inna* be followed by a Ld'd NP in a position adjoined to IP but not by a topicalized NP adjoined to the same position? The same question can be raised with respect to the embedded sentences introduced by this complementizer²⁰. (91), in which the object NP *kitab* is topicalized, is also excluded:

(91)

*danan-tu ?anna kita:b-an_i qara?a Hasan-un t_i
 believed-1sg that book-acc read Hasan-nom
 "I believe (it is true)that a book Hasan read"

Note that the ungrammaticality of (90a) and (91) could be attributed to the indefiniteness of the NP *kitab-an_i*; however, both sentences remain ungrammatical even if the pertinent NP is definite. This is demonstrated by (92) in which the NP *al-kitab-a* "the book" is definite:

(92)

a. *?anna al-kita:b-a_i qara?a Hasan-un t_i
 b. *danan-tu ?anna al-kita:b-a_i qara?a Hasan-un t_i

¹⁹ Topicalization will be treated in chapter 4.

²⁰ See section (3. 19) for a discussion and analysis of LD in embedded contexts.

As shall be subsequently argued, the contrast between the sentences in (92) can be explained if the notions of Case inheritance, Case conflict, and *?inna* as being a [+V, -N] Case assigning element are assumed.

3.16.4 Case Inheritance and Case Conflict

It has been generally assumed that Case is uniquely assigned to Case-bearing elements and that Case theory prohibits the assignment of two distinct Cases to a single NP. This has been developed in various forms into a principle known as Case conflict (cf. Vergnaud (1979), Sportiche (1983)) whereby a structure is ruled out if it contains an NP in a position where it could receive two different (i.e. conflicting) Cases:

(93) *NP, if NP has Case_A and Case_B where A is not equal to B.

It is generally assumed, however, that the domain of the principle of Case conflict is restricted to A-chains only -- that is, there cannot be more than one Case feature in an A-chain. I will argue here for a generalized version of this principle which would extend its domain of application to cover A-chains and \bar{A} -chains as well. Secondly, I am proposing that a structure containing an NP (whether in an A-position or in an \bar{A} -position) with a conflicting or identical Case features will be ruled out. Such a generalized version of (93) can be formalized as follows:

(94) *NP, if NP has Case A and Case B, where A = B, or A is not equal to B.

Turning to the examples given in the preceding section, the NP (*?al*) *kitab-an* in (90a), (91) and (92) receives two Cases from two different sources: one from the verb in its D-structure position as a complement of the verb and

one from *?inna* in its S–structure position, governed by *?inna* . This produces Case conflict which consequently rules out these sentences.²¹

Notice that a topicalized object NP can appear after a Ld'd NP governed by *?inna* . Both of them are assigned the accusative Case, but in different fashions. The Ld'd NP *Hasan* in (95) below is governed and assigned Case by *?inna* , and the topicalized NP *Zayd* is assigned Case by inheritance:

(95)

- a. *?inna Hasan-an Zayd-an_i qa:bala t_i*
 that Hasan-acc Zayd-acc met
 "As for Hasan, it was Zayd who he met"
- b. *zaʔam-ta ?anna Hasan-an Zayd-an_i qa:bala t_i*
 claim-2sgm that Hasan-acc Zayd-acc met
 "You claimed as for Hasan, it was Zayd who he met"

The sentences in (95) are grammatical since no Case conflict arises. This indirectly supports an analysis in terms of Case conflict. The view of Case inheritance will be further argued in the next chapter.

²¹ The analysis presented here predicts that topicalization should be possible to a position adjoined to IP with a non-Case assigning complementizer, such as *?an* . Unlike *?anna* and its morphological variant *?inna* , *?an* is not a Case assigner; thus in principle, it should permit a topicalized NP to occur in a position immediately to its right (adjoined to IP) since no Case conflict would arise in this context. The topicalized NP receives only one Case by inheritance from its D–structure site. That is, we should be able to get sentences like (1b and 1c) in which the NP *Zaydan* is topicalized from the non-topicalized form (1a). (1b) and (1c) represent topicalization with and without a clitic, respectively:

- (1)
- a. *?aradtu ?an ?uqa:bi-l-a Zayd-an*
 wanted that meet-subjunctive Zayd-acc
 "I wanted that I would meet Zayd."
- b. **?aradtu [CP ?an [IP Zayd-an_i [IP ?uqa:bi-l-a-hu_i t_i]]]*
 obj cl
- c. **?aradtu [CP ?an [IP Zayd-an_i [IP ?uqa:bi-l-a t_i]]]*

However, this process is unavailable as both (1b) and (1c) are ungrammatical. Although the complementizer *?an* does not assign a Case feature, it does and must assign a subjunctive mood indicated by the morpheme *-a* on the embedded verb *?uqa:bi-l-a* and by the English glossary. As will be argued in chapter 4, the assignment of subjunctive mood, like Case-assignment, requires government and adjacency. The requirements for subjunctive mood-assignment in (1b and c) are violated since the NP *Zaydan* at S–structure intervenes between the mood assigner and the assignee. Thus, the sentence is ruled out. What this case illustrates is that while the adjunction site is open at S-structure, and Case theory does not prevent an NP from being in that position, other licensing conditions intervene to block overgeneration.

The relation between Case features and NPs, like Θ -role, is a unique relation in that for each X^0 with a Case feature A there may be one and only one XP bearing A and for each XP there may be one and only one Case assigner. Thus, this proposal of uniqueness consists of two parts: the idea that a Case assigner may directly assign one Case feature only and that NPs may not have Case via more than one Case assigner.

Taking up our discussion of Θ -theory in chapter 1, I assumed the Θ -Criterion given informally in (96) as a minimal semantic well-formedness on arguments at LF:

(96) Θ -Criterion (Chomsky 1981: 36)

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

(96) ensures that arguments be associated with one and only one Θ -role. Given the Projection Principle which requires lexical properties to be present at all relevant syntactic levels, the Θ -Criterion must hold at both D-structure and S-structure. Notice that the Θ -Criterion rules out two situations: one in which an argument bears more than one Θ -role, and one in which an argument bears no Θ -role. A sentence like (97)

(97) *Mary loved t

cannot mean *Mary loved herself* --- that is it is impossible for *Mary* to simultaneously bear the agent and the patient Θ -roles of the verb *love*. This would be a case of one argument *Mary* with two theta-roles. Likewise, the A-chain consisting of the argument *John* and its trace t is assigned a Θ -role by the matrix predicate *consider* and by the embedded predicate *qualified*:

(98) *We consider $John_i$ [t_i qualified for the job]

Likewise, a single Θ -assigner cannot have two agent arguments. In effect, (99) is not a grammatical sentence:

(99) *Mary hit Nancy by Bill

since the verb *hit*, which assigns a single agent Θ -role has two agent arguments, *Mary* and *Bill*.

A situation in which an argument bears no Θ -role is exemplified by the impossibility of (100a):

(100)

- a. * Mary seems [the peas overcooked]
- b. Mary likes [the peas overcooked]

A lexical property of *seem* is that it takes a clausal complement, and unlike *like*, assigns no Θ -role to its subject. Therefore, *Mary* in (100a) has no Θ -role, and the sentence is barred as a Θ -Criterion violation.

The one-to-one restriction on Θ -roles and arguments is parallel to the relation between Case features and NPs in that both relations are unique. In the domain of Case theory, there is only one Case-assigner for each Case-bearer and vice-versa. Thus, there is only one Case per NP and only one NP per Case.

Consider, now, how an NP may come to bear more than one Case feature. One way is for the NP to appear in a context where it is governed by two Case assigners, as exemplified by (101). The NP *Mary* is assigned Case by the prepositional complementizer *for*, and by AGR/Tense of the embedded clause:

(101)

- a. *We were hoping [_{CP} for [_{IP} Mary would win]]
- b. We were hoping [_{CP} for [_{IP} Mary to win]]

Structures of type (101a) are excluded because of Case conflict. Tensed clauses contain tense and agreement (which cooccur in English), and may not occur with the complementizer *for*, since the subject NP *Mary* would be in a context to receive two distinct Cases -- nominative Case for AGR/Tense and

oblique Case from *for*. Tenseless clauses (101b), on the other hand, need the presence of the Case–assigning complementizer *for* in order to assign Case to the subject of the infinitival clause which cannot be assigned nominative Case since such clauses lack AGR and tense. This can be seen from the fact that the substitution of *for* by *that*, which does not assign Case, redeems (101a) and destroys (101b):

(102)

- a. We were hoping that [Mary would win]
- b. *We were hoping that [Mary to win]

The Case Filter provides a stipulation–free account of the contrast under the natural assumption that the complementizer *that*, unlike *for*, is not a Case assigner.

It is also true that a single Case assigner may not assign the same Case to more than one NP:

(103) *John liked Nancy Bill

To summarize, I argued for the notion of Case conflict and its resemblance to the Θ –Criterion, the latter being a minimal semantic well–formedness on arguments at LF which prohibits two states of affairs: one in which an argument bears more than one Θ –role, and another in which an argument bears no Θ –role. The observed resemblance is put together by a condition that requires the relation between Case assigners and Case bearers, on one hand, and Θ –role assigners and Θ –role bearers, on the other hand, to be one–to–one in character.

3.18 Summary of section (3. 16)

To summarize the preceding discussion, I argued that *?inna* is an accusative Case–assigning complementizer which must assign its Case to an NP. The NP is in an \bar{A} –position external (adjoined) to IP to which no Θ –role can ever be assigned. The arguments are drawn from word order after *?inna*, topicalization, and LD structures. I indirectly defended the notions of Case conflict and Case inheritance and finally, turned to a discussion of the properties of complementizers related to *?inna*.

The remainder of the present chapter will investigate LD in the sentential complements of *believe*–type verbs, *?aftaqidu*, *?adunnu*.

3.19 Embedded Left–Dislocation

LD is usually thought to be a main–clause phenomenon, but in Arabic LD can in fact be introduced in subordinate clauses embedded under *believe*–type verbs. The next sections will focus on the structure of embedded LD and will be guided by our previous proposals concerning their syntactic properties. The similarities which these structures share with main clauses is a point of major concern in the discussion below.

While embedded LD constructions are marginal or ungrammatical in English, the embedding of LD constructions is a fully productive process in Arabic, as the data in (104) below illustrate. In order to be interpreted, the Ld'd NP, being in a $\bar{\Theta}$ –position, must be coindexed with a pronoun which is assigned a Θ –role. As can be seen from the data, embedded LD structures are introduced by the complementizer *?anna*, a phonological variant of the accusative Case assigning complementizer *?inna* of main clauses. As we shall subsequently see, this analysis is essentially an extension of the analysis of non–embedded LD developed in the preceding sections. I will argue that the

initial NP in the sentential complement of *believe*-type verbs in Arabic is base-generated in a position adjoined to IP. The S-initial NP in embedded position always bears accusative Case, as the reader can easily verify from the data given below:

(104)

- a. danan-tu Hasan-an_i safar-a ?aX-u-hu_i pro_i
 believed-1sg Hasan-acc travel-3sgm brother-nom-gen cl
 "I believed that as for Hasan, his brother travelled"
- b. danan-tu Hasan-an_i ra?a-a-hu_i pro_i Zayd-un
 believe-1sg Hasan-acc saw-3sgm-obcl Zayd-nom
 "I believed that as for Hasan, Zayd saw him"
- c. danan-tu Hasan-an_i ?a-fta-hu_i pro_i Zayd-un kita:b-an
 believe-1sg Hasan-acc 3sgm-give-obcl Zayd-nom book-acc
 "I believed that as for Hasan, Zayd gave him a book"
- d. danan-tu Hasan-an_i marr-a bi-hi_i pro_i Zayd-un
 believe-1sg Hasan-acc call-3sgm in-obcl Zayd-nom
 "I believed that as for Hasan, Zayd called on him"

(105)

- a. danan-tu ?anna Hasan-an_i safar-a ?aX-u-hu_i pro_i
 believed-1sg that Hasan-acc travel-3sgm brother-nom-his
 "I believed that as for Hasan, his brother travelled"
- b. danan-tu ?anna Hasan-an_i ra?a-a-hu_i pro_i Zayd-un
 believed-1sg that Hasan-acc saw-3sgm-obcl Zayd-nom
 "I believed that as for Hasan, Zayd saw him"
- c. danan-tu ?anna Hasan-an_i ?a-fta-hu_i pro_i Zayd-un kita:b-an
 believed-1sg that Hasan-acc 3sgm-give-obcl Zayd-nom book-acc
 "I believed that as for Hasan, Zayd gave him a book"
- d. danan-tu ?anna Hasan-an_i marr-a bi-hi_i pro_i Zayd-un
 believed-1sg that Hasan-acc call-3sgm in-obcl Zayd-nom
 "I believed that as for Hasan, Zayd called on him"

3.19.1 Range of Embedded LD

In the same way as a matrix LD, an embedded Ld'd NP can be coindexed with a wide range of thematic positions in the embedded sentence. The Ld'd NP *Hasan* in the paradigms (104) and (105) is coindexed with a

genitive complement of N (a), with a complement of a V (b), and with an indirect object (c), with an object of a preposition (d).

3.19.2 Presence of a Resumptive Pronoun

The NP *Hasan* in the above paradigms is obligatorily coindexed with a resumptive pronoun. Ungrammaticality immediately results in the absence of such a pronoun, as (106) shows, or in the face of a non-coreferential reading between the NP and the pronoun, as (107) shows:

(106) **danan-tu* ?*anna* Hasan-*an_i* safar-*a* ?*aX-u-0*
 believed-1sg that Hasan-acc travel-3sgm brother-nom
 "I believed that Hasan, his brother travelled"

(107) **danan-tu* ?*anna* Hasan-*an_i* safar-*a* ?*aX-u-hu_k* *pro_k*
 believed-1sg that Hasan-acc travel-3sgm brother-nom-his
 "I believed that Hasan, his brother travelled"

3.19.3 Accusative Case

One of the prominent features of the NP that immediately follows the complementizer ?*anna* is that it bears accusative Case. The only difference between the two data sets in (104) and (105) is that the complementizer ?*anna* is overtly specified in (105) but not in (104). The NP *Hasan* appears to the right of the complementizer as shown by the paradigm (105) where ?*anna* is lexically specified. ?*anna* must precede the NP *Hasan* to which it assigns accusative Case; if it follows that NP, the sentences will be ungrammatical. Compare, in this respect, the following with (104a) above:

(108)
 **danan-tu* Hasan-*an_i* ?*anna* safar-*a* ?*aX-u-hu_i* *pro_i*
 believe-1sg Hasan-acc that travel-3sgm brother-nom-his
 "I believed that Hasan, his brother travelled"

The only difference between (105a) and the sentence (108) lies in the position of ?*anna* in the sentence relative to the Ld'd NP *Hasanan*. It is to the left of the

NP in (104a) but it is to the right of the NP in (108), resulting in ungrammaticality in the latter case.

When *?anna* is not lexically realized, as in (104) above, I would assume that it has been deleted at PF after it has assigned its Case to the NP at S-structure. Alternatively, one could assume that there is a null complementizer at both D-structure and S-structure which assigns accusative Case to the NP.

3.19.4 Specificity

Like matrix LD, the embedded Ld'd NP cannot be indefinite, as shown below:

(109)

- a. *ʔalim-tu ʔami:rat-an wasal-at
 knew-1sg princess-acc arrive-3sgf
 "I knew a princess, she arrived"
- b. *ʔalim-tu ʔanna ʔami:rat-an wasal-at
 knew-1sg that princess-acc arrive-3sgf

3.19.5 Island Constraints

Again like matrix LD, the island conditions are also freely violated in these structures. The Ld'd NP is coreferent with a resumptive pronoun that originates inside a complex NP (110a), inside a coordinate NP structure (110b), and inside a genitive NP structure (cf. 104–105a). Theoretically, the amount of material that may separate the Ld'd NP and the resumptive pronoun is unlimited:

(110)

- a. ʔalim-tu (?anna) al-ʔamirat-a; wasal-a ar-rajul-u allaði
 knew-1sg that the-princess-acc arrive-3sgf the-man-nom who
 yu-hib-u-ha;
 3sgm-like-ind-obcl
 "I knew that the princess, the man who likes her arrived"

- b. danan-tu (?anna)Zayd-an_i shahad-tu-hu_i wa sadi:qadt-a-hu_i
 believed-1sg that Zayd-acc saw-1sg-obcl and friend-acc-his
 "I believed that Zayd, I saw him and his brother."

I have already mentioned in connection with main-clause LD and relatives that the ability to reach down into complex NPs is a direct product of the resumptive pronoun strategy. Ungrammaticality immediately results if a resumptive pronoun is not present within the complex NP. This is shown below by the sentences in (111) where a trace *t* rather than a pronoun appears in the complex NP; otherwise, the sentences are exactly the same as the ones in (110):

(111)

- a. *ʔalim-tu (?anna) al-ʔamirat-a wasal-a ar-rajul-u allaʔi yu-hib-u-0
 b. *danan-tu (?anna) Zayd-an shahad-tu-0 wa sadiqadt-a-0

From this, I conclude that the embedded Ld'd NP is base-generated.

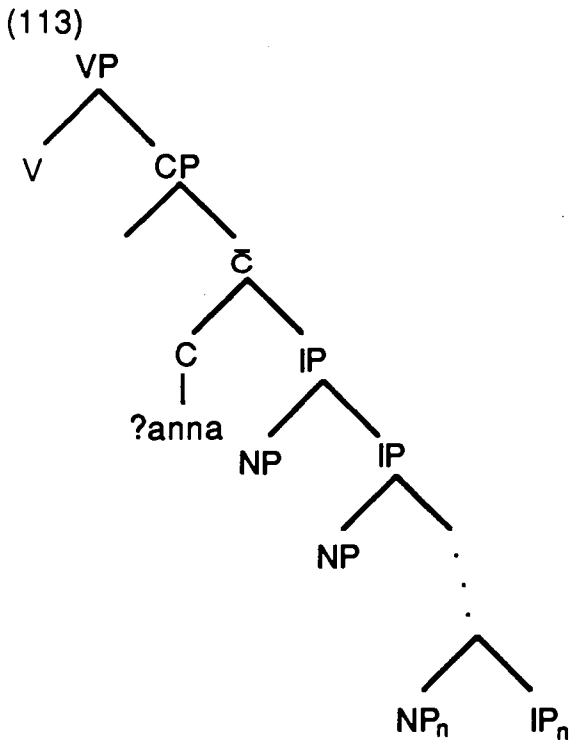
3.19.6 Base-generation Site

My thesis is that in sentences such as (92–93) above, the Ld'd NP is base-generated in a position adjoined to IP and, as in all LD constructions in Arabic, it is associated with a resumptive pronoun in the source clause. Thus, the difference between Arabic and English lies in Arabic's productive use of base-generated adjunction sites. In English LD is mainly restricted to sentence peripheral position as the contrast between (112a) and (112b) illustrates:

(112)

- a. The book, I know that Mary put it on the table.
 b. ? I know (that) the book Mary put it on the table.

In Arabic, however, Ld'd NPs can be base-generated sentence internally (adjunction to IP), as we saw above. This process of adjunction to IP is diagrammed in (113):



3.19.7 Raising-to-Object Analysis

Another possible analysis of the data in (104–105) might be the traditional Raising-to-Object.²² Consider the sentence in (114):

(114)
 dann-a Hasan-un [_{IP} Zayd-an_i [_{IP} yu-safiru pro_i radan]]
 believed-3sgm Hasan-nom Zayd-acc 3sgm travel tomorrow
 "Hasan believed that Zayd will travel tomorrow"

Under my analysis, the NP *Zayd* in (114) is base-generated in the adjoined position and is coindexed with the embedded subject pronoun *pro*.

Salih, (1985), arguing in the framework of Relational Grammar, considers structures of this type and the ones to be discussed in chapter (5) to be cases of Raising-to-Object. Raising-to-Object is a rule that would raise the NP from within the complement clause into the VP of the matrix clause. Such an

²² See Postal (1974) for arguments for a Raising-to-Object analysis and references cited therein to early debates on this topic. These references are Lees, (1960), Rosenbaum, (1967), Ross, (1967), and McCawley, (1970).

analysis is not possible within the Government-binding theory. The allegedly raised NP is in a Θ -position in D-structure, then this NP would be doubly Θ -marked at S-structure and LF, violating the Θ -Criterion. The reason is that the position to which the NP moves is subcategorized, and therefore would be Θ -marked, as each subcategorized position is a Θ -position (subcategorization entails Θ -marking). According to the Raising analysis, the NP *Zayd* would be moved from its D-structure position which could either be the IP adjoined position (115a) or the embedded subject position (115b), to the object position of the matrix verb:

(115)

- a *danna Hasan-un Zayd-an_i* [IP *t_i* [*yu-safir-u pro_i ʔadan*]]
- b. *danna Hasan-un Zayd-an_i* [IP *yu-safir-u* *t_i* *ʔadan*]]

In this dissertation, I am assuming the GB theory and will not attempt to evaluate analyses that are incompatible with this theory, in particular, the class of Raising-to-Object analyses. A raising analysis is not compatible with a restrictive theory of grammar like the GB framework that maintains both the Θ -Criterion and the Projection Principle. At S-structure, the verb *danna* 'believe' would select (directly Θ -mark) the NP *Zayd* but not at the other levels. Hence, I reject Raising-to-Object on theory-internal grounds and reject the structures in (115) as representations of the sentence in (114).

As in main clause LD constructions discussed above, I consider the NP *Zayd* in (115) a Ld'd NP base-generated in a second specifier of IP, following the line of argumentation developed for main clauses.

3.19.8 Multiple Embedded Left–Dislocation

Multiple Ld'd NPs can also be found embedded under *believe* –type verbs, as shown in (116), where the NPs *al-?amirata* and *ar-rajulu* are Ld'd:

(116)
danan-tu (?anna) al-?amirat-a_i ar-rajul-u_k yu_k-hibu-ha_i
believe-1sg that the-princess-acc the-man-nom 3sgm-like-obcl
"I believed that the princess, the man, he likes her"

As for the position in which the embedded Ld'd NP is base-generated, I suggest that it is a position adjoined to IP, following the same line of argumentation given for LD in main clauses. I propose that the Ld'd NP is required to license the IP complement subcategorized by *?anna*. The obligatory coindexation between the Ld'd NP and the Θ -position follows from the principle of full interpretation (PFI) which requires every element in the sentence to be interpreted. The Ld'd NP is an R-expression in an \bar{A} -position to which a Θ -role is never directly (under government) assigned. It is interpreted by coindexation with an embedded pronoun.

To summarize, I have briefly discussed the main properties of LD in embedded contexts. The Ld'd NP is base-generated in a position external to IP, and can be multiple.

In the next section, I will look at possibilities of *wh*-extraction out of various positions in embedded clauses and show that they directly fall out of the general principles of GB theory, specifically Subjacency and the ECP.

3.19.9 Wh-extraction out of Embedded Clauses

As has already been shown, Subjacency explains the impossibility of extraction from a complex NP:

(117)

a. hasib-tu ?anna al-?amirat-a tu-hibu ar-rajul-a
believe-1sg that the-princess-acc 3sgf-like the-man-acc
allathi yu-hibu al-xayl-a
who 3sgm-like the-horses-acc
"I believed that the princess, she likes the man who likes horses"

b. *ma:ða_i hasib-ta ?anna al-?amirat-a tu-hib-u ar-
what believe-1sg that the-princess-acc 3sgf-like-ind the-
rajul-a allaði yu-hib-u-(ha) t_i
man-acc who 3sgm-like-ind

(117b) in its two variants, with or without a clitic, is excluded by Subadjacency.

Again, here, the ECP correctly rules out the extraction of an NP from the complement position of N (118a) and P (118b) since N and P are not proper governors. It correctly rules in extraction from the same positions if a clitic is realized on N and P, as the clitic functions as a proper governor for the trace left by movement. The ECP also correctly predicts the possibility of extraction from the object position of V (118c):

(118)

- a. man_i dana-ta ?anna Hasan-an darab-a sahib-a* (hu_i) t
who think-2sgm that Hasan-acc hit-3sgm associate-acc-him
"Whose associate did you think that Hasan hit?"
- b. man_i danan-ta ?anna Hasan-an marr-a-bi* (hi_i) t
who think-2sgm that Hasan-acc call-3sgm-in-obcl
"Who did you think that Hasan called on?"
- c. man_i danan-ta ?anna Hasan-an darab-a (hu_i) t
who think-2sgm that Hasan-acc hit-3sgm-obcl
"Who did you think that Hasan hit?"

A distinction needs to be made between two types of complementizers which introduce sentential complements of *believe* -type verbs in Arabic, *?anna* and *?an*. Though they both introduce sentential complements of the same class of verbs, the complements have different structures. As argued in this chapter, *?anna* must be followed by a Ld'd NP base-generated in a position adjoined to IP. On the other hand, *?an* is followed by a regular

declarative clause that is a non-Left-dislocation structure, as shown by the fact that it is followed by a verb:

(119)

a. hasiba $\text{\textcircled{f}amr-un}$ (?anna) [_{IP} Zayd-an [_{IP} kata:ba al-taqri:r-a]]
 thought $\text{\textcircled{f}amr-nom}$ that Zayd-acc wrote the-report-acc
 "hasiba thought that as for Zayd, he wrote the report"

b. hasiba $\text{\textcircled{f}amr-un}$?an [_{IP} kata:ba Zayd-un al-taqri:r-a]
 thought $\text{\textcircled{f}amr-nom}$ that wrote Zayd-nom the-report-acc
 "hasiba thought that Zayd wrote the report"

I have assumed that the complementizer *?anna* exists at D-structure and S-structure to assign its accusative Case to the NP it subcategorizes for. Thus, *?anna*'s optional deletion at PF after it has assigned its Case to the NP does not alter the status of the NP; the NP remains a Ld'd NP in an \bar{A} -position and not an A-subject of the embedded IP. The distinction between a Ld'd NP and a subject NP is crucial here because it distinguishes between extraction from a position adjoined to IP, that of a Ld'd NP (120a, cf. 119a), and extraction from an argument position, that of subject of IP (120b, cf. 119b):

(120)

a. $\overbrace{\text{man}_i \text{ hasiba } \text{\textcircled{f}amr-un} [\text{CP } t'_i (*?anna) [\text{IP } t_i [\text{IP } \text{kataba } \text{Itaqri:ra }]]]}$
 who

b. $\overbrace{\text{man}_i \text{ hasiba } \text{\textcircled{f}amr-un} [\text{CP } t'_i ?an [\text{IP } \text{kataba } t_i \text{ al-taqri:r-a }]]}$

Let us now look at more examples illustrating the extraction possibilities of a Ld'd NP from the IP adjoined position. First, consider the sentence in (121) where no NP extraction has taken place yet. The complementizer *?anna* does not appear, although its presence is assumed at S-structure for purposes of Case-assignment to the NP *\text{\textcircled{f}amr}* and also at D-structure for purposes of subcategorization:

(121)
 danna Hasan-un [_{IP} ʔamr-an_i [_{IP} yu-hibu pro_i the-al-ʔayl-a]]
 believe Hasan-nom ʔamr-acc 3sgm-like horses-acc
 "Hasan thinks ʔamr that he likes horses"

Notice that the subject of the embedded predicate *hib* 'like' is a pronoun symbolized as *pro*, and not a trace. It should be emphasized that the Ld'd NP *ʔamr* is not placed in the position adjoined to IP by move- α from the embedded subject position; rather, it is base-generated in the IP adjoined position. This is so since, as argued earlier in this chapter, the Ld'd NP is linked to a pronoun and not to a trace since this linkage goes down into islands. (122) illustrates the extraction possibilities from the IP adjoined position:

(122)

a. $\overbrace{\text{man}_i \text{ dann-a Hasan-un } [\text{IP } t_i \text{ } [\text{IP } \text{yu-hibu } \text{pro}_i \text{ al-ʔayl-a }]]}^{\text{who believe-3sgm Hasan-nom 3sgm-like the-horses-acc}}$
 "Who_i did Hasan think t_i he likes horses?"

b. $\overbrace{\text{man}_i \text{ danna-a-hu}_i \text{ Hasan-un } [\text{IP } t_i \text{ } [\text{IP } \text{yu-hibu } \text{pro}_i \text{ al-ʔayl-a }]]}^{\text{who believe-3sgm-obcl Hasan-nom 3sgm-like the-horses-acc}}$
 "Who_i did Hasan think t_i he likes horses?"

c. * $\overbrace{\text{man}_i \text{ dann-a Hasan-un } \text{?anna } [\text{IP } t_i \text{ } [\text{IP } \text{yu-hibu } \text{pro}_i \text{ al-ʔayl-a }]]}^{\text{who believe-3sgm Hasan-nom that 3sgm-like the-horses-acc}}$
 "Who_i did Hasan think that t_i likes horses"

d. $\overbrace{\text{man}_i \text{ dann-a Hasan-un } \text{?anna-hu} [\text{IP } t_i \text{ } [\text{IP } \text{yu-hibu } \text{pro}_i \text{ al-ʔayl-a }]]}^{\text{who believe-3sgm Hasan-nom that -cl 3sgm-like the-horses-acc}}$

Extraction of the NP adjacent to the complementizer *?anna* requires an obligatory clitic to appear attached to *?anna*; (122d) in which the clitic *-hu* appears is grammatical. If no clitic appears, the derivation is barred. Thus,

(122c) which is the same as (d) but without a clitic, is ungrammatical. If I assume that *?anna*, like *for* in English (cf. 123 below), is not a proper governor (although it is a governor), then the extraction of the particular NP will leave a trace that fails to be properly governed, a violation of the ECP:

(123) * Leslie_i was preferred [_{CP} for [_{IP} t_i to have married Joe]]

Since *for* is not a proper governor, the trace *t_i* is not in a properly governed position. *Leslie* fails to antecedent govern its trace by the Minimality Condition. In effect, the presence of *for*, a closer governor for *t_i*, creates a barrier, blocking this antecedent government. Thus, the derivation is ruled out by the ECP.

Like *for*, *?anna* is not a proper governor for the adjacent trace; hence a clitic is necessary in order to properly govern the trace, in accord with the ECP. Antecedent government of the trace in (122c) by *man* 'who' fails exactly like (123) by the Minimality Condition. The presence of *?anna*, a closer governor and a Case assigner for the trace, blocks antecedent government. The sentence is thus ruled out as an ECP violation. But, then, why is the same sentence redeemable if the complementizer *?anna* is not overtly specified, as in (122a)? The sentence is repeated in (124) with further structure and with *0* (= phonetically empty *?anna*) :

(124)

a. man_i dann-a Hasan-un [_{CP} [c'*0* [_{IP} t_i [_{IP} yu-hibu pro_i al-Xayl-a]]]]

b. * man dann-a Hasan-un [_{CP} [c' ?anna [_{IP} t_i [_{IP} yu-hibu pro_i al-Xayl-a]]]]

In (124b), by virtue of the Minimality Condition, C (= *?anna*) protects *t_i* from antecedent government by *man*; but in (124a), this will not be the Case, if I make the natural assumption that *0* is featureless and therefore not a closer governor for purposes of the ECP. The sentence, then, is not an ECP violation

since t_i is antecedent governed. This becomes clearer by comparing it with

(125):

(125)

a. who_i do you think [_{CP} t_i [₀ [IP t_i will win the race]]]

b. * who_i do you think [_{CP} t_i [_{that} [IP t_i will win the race]]]

(125b) is ruled out for the same reason that rules out (124b); (125a) is ruled in for the same reason that rules in (124a) -- namely, the presence versus the absence of an M-barrier conditioned by the features of COMP.

Furthermore, since *?anna* is a Case assigner and it assigns accusative Case to the adjacent NP, it must jettison its Case. Since Case is generally morphologically realized, I stipulate in the grammar that whenever Case is assigned, it must be realized (cf. chapter 1). Given this assumption then, a clitic must appear for two reasons: to properly govern the trace left by movement and to absorb the Case jettisoned by *?anna*.

The ECP correctly predicts the grammaticality of (122a, b, and d) since the trace t in the IP adjoined position is properly governed in each case: by V in (a) and by the clitic-*hu* in (b and d). The sentence in (c), which is the same as (d) but without a clitic on the complementizer *?anna* is ungrammatical since *?anna* is not a proper governor for t .²³

Finally, compare against (124) extraction of subjects embedded under *believe*-type verbs *hasiba* 'to think'; (120b) is repeated in (126) with a more detailed structure:

²³ On proper government by the clitic cf. chapter 4, section (4.3) dealing with Wh-movement.

other hand, the accusative Case on the Ld'd NP is assigned to it directly by the complementizer *?inna/?anna* under government.

I presented an account of the specificity phenomenon constraining LD and topicalization with clitics by relegating it to the presence of a clitic. The clitic affixed to the head of its construction, is a licenser for two types of empty categories: *pro* in LD and a trace in topicalization. In passing, I discussed topicalization in its two versions, with and without clitics.

The coindexing requirement between the Ld'd NP and the embedded NP position is a way of satisfying the Principle of Full Interpretation (PFI). The coindexing can be viewed as an interpretive rule of predication which assigns the Ld'd NP and its pronoun identical indices. It is predication in the sense of "aboutness relation" with the rest of the sentence; the IP constituent is a statement about the Ld'd NP.

I advanced arguments for the notion of Case inheritance and Case conflict on the basis of the accusative Case assigning complementizer *?inna/?anna*.

The obligatory appearance of a clitic affixed to the complementizer *?inna/?anna* in case the NP to its right is extracted follows straightforwardly from the ECP -- if we accept that this complementizer, like *for*, is not a proper governor. The fact that extraction from the same position is possible in case a clitic is phonetically spelled out on the complementizer also follows automatically from the ECP if we accept that the clitic acts as a proper governor for the trace left by movement.

Chapter 4

Movement Processes

4.1 Overview of chapter 4

In this chapter, I will examine constructions involving extraction. This includes Wh-questions and Topicalization -- both of which may utilize clitics. Wh-questions move to the specifier position of CP, [SPEC, CP]. I assume that this property follows from general conditions pertaining to questions of scope at LF, which require that wh-questions move to [SPEC, CP]. Topicalized elements adjoin to IP. Both of these positions are \bar{A} -positions since no Θ -role can ever be assigned to them and the trace they bind acts like a variable. By the Principle of Full Interpretation (PFI), operators in these positions must be interpreted by binding a variable. PFI requires that every element that appears in a well-formed sentential structure must be licensed by performing a particular function in that structure. The structure is well-formed only if every element in it receives an appropriate interpretation. A wh-operator is interpreted at LF by appearing in the clausal specifier position from which it must bind a variable. Similarly, a topicalized operator in the IP adjoined position is interpreted by binding a variable.

Adapting features of the analysis of Lasnik and Saito (forthcoming), this chapter attempts to account for complement/non-complement asymmetries in Arabic. With the proposal that adjunction to IP creates a barrier blocking antecedent-government, the possibility of extracting subjects from certain positions and not from others will be accounted for in a straightforward manner.

Based on extraction, this chapter also argues for the view of Case inheritance and the notion of Case conflict. As we shall see, extracted elements

bear the Case of their extraction site. The last part of this chapter argues for adjacency as the notion was suggested in Chomsky (1981) and discussed in more detail in Stowell (1981) -- that Case is assigned only to an adjacent element.

I will also examine in detail the various manifestations of syntactic movement in Arabic and the island effects subsumed under Subjacency, focusing on surface violations of these constructions.

4.2 Move- α and Bounding Theory

The postulation of a general rule schema "move- α " illustrates the attempt to reduce the expressive power of transformations and to shift the descriptive burden from construction-specific transformations to highly general universal principles that are optimally simple in form. It is an interesting hypothesis about the core of the syntactic component of UG -- that it contains no individual language-specific or construction-specific transformations, but a single general rule "move- α " which says "to D-structure, move anything anywhere to create S-structure". As a result of the modular nature of UG, however, the principles within the various subtheories of UG interact to impose severe limitations on where move- α may move a category to, what category it may move and what happens when move- α occurs. The Projection Principle and the Θ -Criterion restrict many logically possible cases of movement. Given the Projection Principle, once an argument position exists in a certain structural configuration at one level, it must continue to exist at all relevant levels; thus, movement must leave a trace in the original position of the moved argument and create a chain between the trace and the moved element. The Projection Principle and the Θ -Criterion restrict movement to \bar{E} -positions only (1); movement to a Θ -position is ruled out (2) since it violates the requirements of the Θ -Criterion, which by the

Projection Principle must apply at the relevant syntactic levels. The verb *?ara:da* 'wanted' in (2) indirectly (through its VP) assigns an experiencer Θ -role to its subject:

- (1) *?asbaha* $\text{\textcircled{f}amr-un}_i$ [t_i *mari:d-an*]
 became $\text{\textcircled{f}amr-nom}$ sick-acc
 "f $\text{\textcircled{f}amr}$ became sick"
- (2) **?arada* $\text{\textcircled{f}amr-un}_i$ [t_i *mari:d-an*]
 wanted $\text{\textcircled{f}amr-nom}$ sick-acc
 "f $\text{\textcircled{f}amr}$ wanted sick"

Movement to an \bar{A} -position is always permitted, while movement to an A-position is allowed only if the position is a $\bar{\Theta}$ -position. This results in two "types" of movement: "wh-movement" and "NP-movement". Movement to an \bar{A} -position is typically to a peripheral position such as [SPEC, CP]. This position may serve as an "escape hatch" for movement allowing for apparently "unbounded dependencies" between the wh-phrase and its trace by virtue of successive cyclic movement:

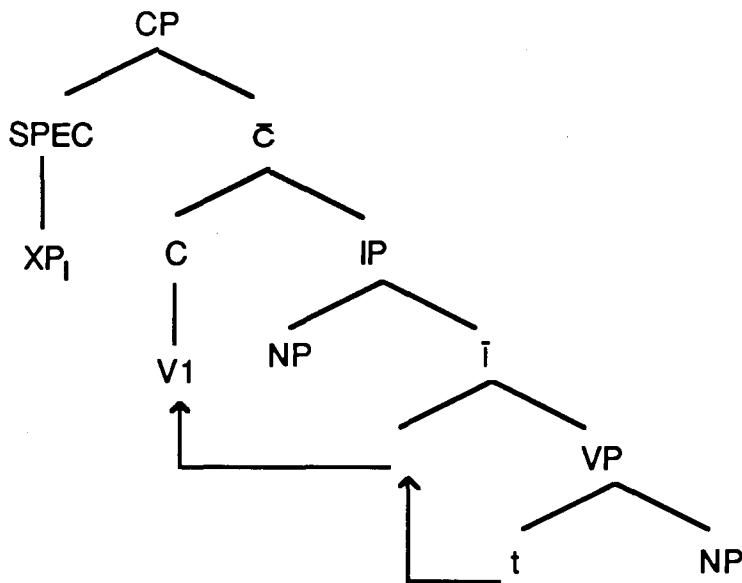
- (3)
 [_{CP} *man* *yuridu* $\text{\textcircled{f}amrun}$ [_{CP} t_4 *?an* *yadda**fiya* *Hasanun* [_{CP} t_3 *?an*
 who want $\text{\textcircled{f}amr}$ that claim Hasan that
yadinna *\text{\textcircled{Xa:lidun}}* [_{CP} t_2 *?an* *tazawwajat* *Hindun* t_1]]]]
 think *\text{\textcircled{Xa:lid}}* that married Hind
 "who does $\text{\textcircled{f}amr}$ want that Hasan would claim that *\text{\textcircled{Xa:lid}}* thinks that Hind married"

The relation between the trace and the wh-phrase is that of variable-binding, the wh-phrase being interpreted as an operator-like element at LF. NP movement is always to an A-position, that of [SPEC, IP], establishing an anaphor-like relation between the moved NP and its trace.

Suppose that move- α is restricted, as suggested in Chomsky (1986b), so that maximal projections may be moved only to specifier positions and heads only to head (X^0) positions. Further suppose that scope is expressed at LF by the C-command restriction (May, 1977). It then follows that wh-phrases and

focused constituents land in [SPEC, CP], while INFL lands in COMP, head of CP:

(4)



Suppose that there is a semantic feature FOCUS in UG and that wh-phrases must receive this feature in order to be interpreted as non-echo questions at LF. Suppose that in Arabic the feature FOCUS is assigned only to [SPEC, CP] such that only phrases appearing in this position will bear this feature:

(5)

a. *ra?ay-ta man
saw-2sgm who
"you saw who"

b. *man ra?a: ma:ða:
"who saw what"

In other languages, such as English, which allow in situ wh-constructions to be questioned, the feature FOCUS may be freely assigned to any category.

4.2.1 Syntactic Movement in Arabic

There are several constructions in Arabic which display the properties of wh-movement: they contain a gap, movement may be from SPEC to SPEC,

and as will be shown in sections (4.2.5 and 4.8.1), conditions on movement (Subjacency) are obeyed. Wh–interrogation (3), relativization, and topicalization in Arabic are all clear examples of wh–movement. The latter two are illustrated in (5) and (6), respectively:

(5)
 ?al-dulaaru allaði_i faqad-tu t_i alyauma ka:na
 the dollar which lost-1sg today was

ʕazi:zun ʕalayya kathi:ran
 dear to me very
 "The dollar which I lost today was very dear to me"

(6)
 ?al-dula:r-a_i faqad-tu t_i alyawma
 the-dollar-acc lost1sg today
 "The dollar I lost today"

Wh–interrogatives can be derived as involving movement of a questioned word from its D–structure argument position to [SPEC, CP]. Relative clauses can be given the same description, though notice that the form of the wh–phrase in relatives *allaði* is different from that found in wh–interrogatives (compare (5) with (3) above).

4.2.3 Bounding Theory

In the following subsections, I will look in detail at the properties of these constructions, providing an analysis of the locality conditions on move– α in Arabic as compared with other languages. After further discussion of the way bounding theory works, the relevant array of data in Arabic will be considered. The peculiarities of relativization (versus other types of movement) with respect to Subjacency will be one major focus of the succeeding discussion of Arabic. It will be shown that a seemingly odd and conflicting set of data is in fact quite orderly once the relevant subtheories of UG and parameters of Arabic grammar are taken into account.

4.2.3.1 Outline

Bounding nodes have traditionally been accepted to be NP for all languages and either CP or IP. Thus, research in languages such as Italian (Rizzi, 1982, first published 1978), French (Sportiche, 1981) and Arabic (Al-Bayaty, 1985) has parameterized the set of bounding nodes for Subjacency in these languages.

Note that CP does not act like a bounding node to block movement when governed by a specific set of verbs called bridge verbs, such as *think* or *say*.

Compare (7) with (8):

- (7) who [did you think [CP (that) [Bill saw t]]]
 (8) *who [did you whisper [CP (that) [Bill saw t]]]

The facts are exactly the same in Arabic as (9) versus (10) shows:

- (9) man [yadunnu famrun [CP (?an) [qa:balat Hindun t]]]
 who think famr that met Hind
 "who does famr think that Hind met"
 (10) *man [yahmisu famrun [CP (?an) [qa:balat Hindun t]]]
 who whisper famr that met Hind

Stowell (1981) proposed that bridge verbs assign a Θ -role to their object complements, whereas non-bridge verbs do not.¹ Assuming that this is the case, then clauses embedded under non-bridge verbs are like adjuncts in that they are islands to extraction.

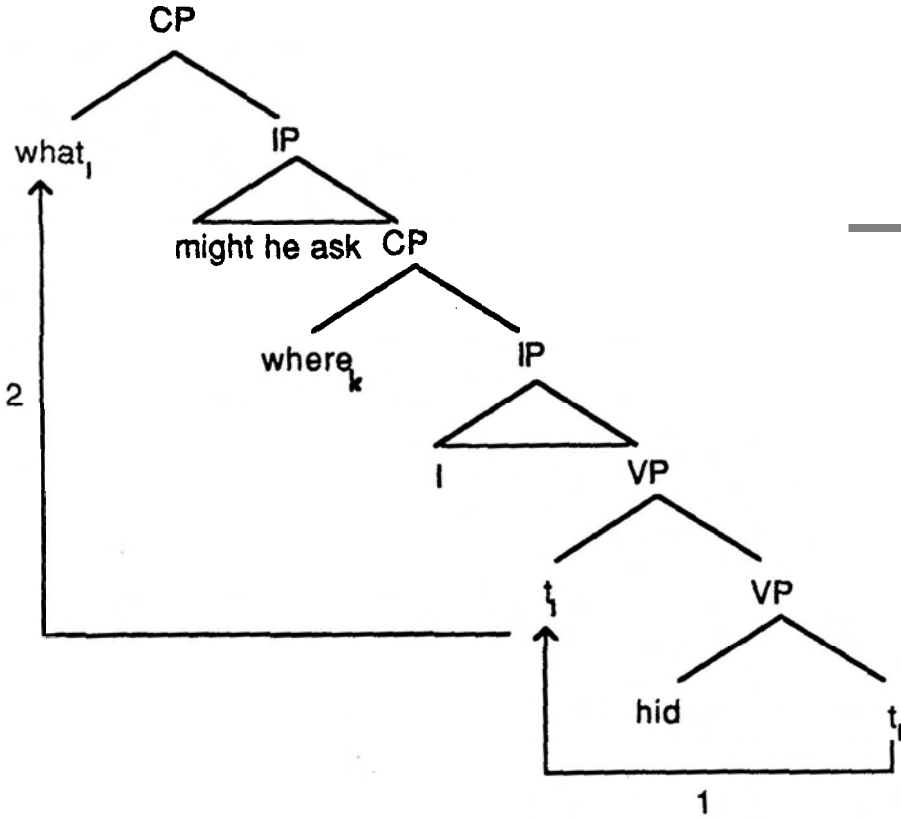
Chomsky (1986b) develops a formal definition of barrier which integrates bounding theory and binding theory (see chapter 1 for discussion). The idea is that the presence of a single barrier blocks government of α by β , while the presence of more than one barrier (bounding node) blocks extraction from position α to position β . The definition entails that in all languages maximal

¹ This explanation does not seem to be correct, as *whisper* must assign a theme Θ -role (that which is whispered) to the CP complement. It is unclear to me why non-bridge verbs behave this way.

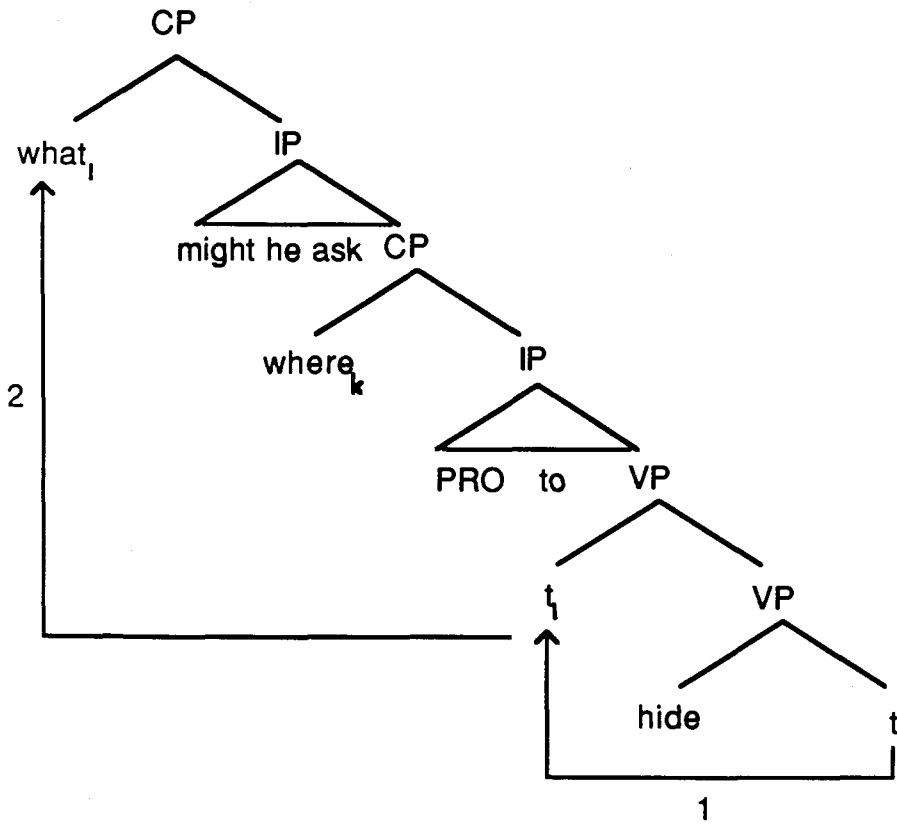
projections not governed by a lexical head (not L–marked) such as NP, VP, PP, etc., are barriers. IP can never be an inherent barrier, and when immediately dominated by the projection of comp, can never be Θ –marked. It is CP which bears the clausal Θ –role. Among other things, this allows a coindexed antecedent in [SPEC, IP] to govern a subject trace. And, in general this means that the head and the specifier of a Θ –marked X^{\max} may be governed from "the outside". Comp may thus be governed by a verb if this verb Θ –marks CP, the projection of comp. Likewise, [NP, IP], the specifier of IP and INFL, the head of IP may be governed by a verb if this verb subcategorizes, hence Θ –marks IP. Maximal projections which are potential barriers are barriers wherever they immediately dominate a barrier. So, for example, since CP is a barrier, NP in a complex noun phrase is also a barrier since it immediately dominates CP. This is so regardless of the fact that NP may be lexically governed.

The parametric variation may involve distinctions of tense versus infinitive, or indicative versus infinitive–subjunctive, or perhaps some factor involving phonologically unrealized subjects. Consider the following wh–island violations:

(11) what might he ask where I hid



(12) what might he ask where to hide



For many speakers (11) is less acceptable than (12). IP is a blocking category (BC), and it makes the CP immediately dominating it a barrier. Movement of *what* in both examples out of the embedded CP crosses one barrier. The marginal acceptability of wh-island violations in some idiolects of English can be attributed to the status of tensed IP as a bounding node, a parameter restricted to the bottommost tensed IP. Thus, I assume with Chomsky (1986b) that the deeply embedded tensed IP in English is an inherent barrier (possibly weak) to wh-movement over and above the system of barriers outlined above. Under this assumption, movement 2 in (11) will cross two barriers (IP and CP) whereas in (12) it crosses one barrier (CP).

The intuitive idea is that judgements become worse as more barriers are crossed in each link of move- α . Lessened acceptability suggests that violations have cumulative effects; such cases will be shown shortly below.

The traditional approach envisaged wh-movement as being movement to Comp, which serves as an "escape hatch" (allowing for successive cyclic movement) whether or not the complementizer *that* is phonetically present. Stowell (1981) and Lasnik and Saito (1984) suggest that this is due to free insertion/deletion of *that* (7-8) which have no intrinsic semantic content and hence are not required by the Projection Principle to be present at D-structure. This fact falls out from the X-bar system, proposed in Chomsky (1986b) and assumed here, in which complementizers head CP while wh-phrases move to the specifier slot of CP. Cyclic movement, then, allows for movement out of an embedded clause without crossing two barriers (bounding nodes).

The core cases that can be deduced from the Subjacency condition are those involving extraction out of relative clauses and other complex NPs (the complex NP constraint):

(13) * $[_{CP} [\text{which book}]_i \text{ did John visit } [_{NP} \text{the store } [_{CP} \text{that } [_{IP} \text{had } t_i \text{ in stock}]]]]$

those involving extraction out of sentential subjects (the sentential subject constraint):

(14) * $\text{who}_i \text{ did } [_{IP} [_{NP} [_{CP} \text{that } [_{IP} \text{Mary was going out with } t_i \text{ [bothered John}]]]]$

and those involving extraction out of embedded questions (Wh-Island Constraint in 12 above). These facts are accounted for in terms of Subjacency as tightly knitted into the theory of government by appealing to the notion of barrier with CP, NP, and the most deeply embedded tensed IP as being bounding for movement. A tensed IP is the English value of the parameter, with the lowest tensed IP adding a barrier.

Research on other languages within the earlier framework has established the parameters of Subjacency for those languages (cf. Rizzi, 1982 for Italian, Sportiche, 1981, for French). Rizzi has argued that Italian systematically violates the Wh–Island Constraint, and hence Subjacency. Thus, Italian freely allows wh–movement out of embedded indirect questions, as will be shown shortly below. Similar violations have been noted by Sportiche and have been used to parametrize the bounding nodes for Subjacency as including NP and CP, but not IP. Based on data from relativization, I shall argue that Arabic, like Italian and French, tolerates certain violations of the Wh-Island Constraint and that the configuration of complex data considered can be adequately accounted for by the fact that movement in Arabic, like English, Italian and French, does obey Subjacency. I will attempt to show that the parametrization of CP and IP, the projections of the non–lexical categories in Arabic, is to be deduced from the notion of barrier.

4.2.4 Relativization

The arguments here are modelled on Rizzi (1982). As (15) shows Arabic, like Italian (16), French (17), and other languages, is subject to the Complex NP Constraint:

(15) *_{[CP ma:ʃa:ɪ raʔayta _{[NP al-rajula _{[CP allaʃi² _[IP kasara t_i]]]]]]}}}

what saw the-man who broke

“*what did you see the man who broke”

(16) (Rizzi 1982: 51)

*Questo incarico, che non sapevo la novita che ovrebbero affidato a te, ...

“*This task, that I did not know the news that they would entrust to you, ...”

² The relative pronouns of Arabic are morphologically distinct from the regular personal or demonstrative pronouns of the language, just like English. Furthermore, the form of relative pronouns is also distinct from the set of interrogative pronouns, unlike English.

(17) (Sportiche 1981: 222)

*Qui croit-il l'histoire que tu as vu

"*Who does he believe the story that you saw"

Movement of the NPs, *ma:ʕa:* (15), *Questo inarico* (16), *Qui* and (17), from their D-structure positions in the lowest IP will have to cross two barriers, CP and NP. CP dominates IP, which is a BC; thus CP becomes bounding and so does NP since it inherits a bounding feature by virtue of dominating CP.

Arabic also patterns with Italian and French in that it exhibits examples violating wh-island constraint:

(18)

aldularu	allaʕi	la	?ataʕakaru	liman	?aʕtaytu	ka:na
the dollar	which	not	I remember	to whom	I gave	was
ʕazi:zan	ʕalayya					
dear	to me					

"The dollar which I do not remember to whom I gave was dear to me"

(19)

La nuova idea di Giorgio, di cui immagino che cosa pensi, diverra presto di pubblico cominio.

"Giorgio's new idea, of which I imagine what you think, will soon become known to everybody."

(20) C'est a mon cousin que je sais lequel offrir.

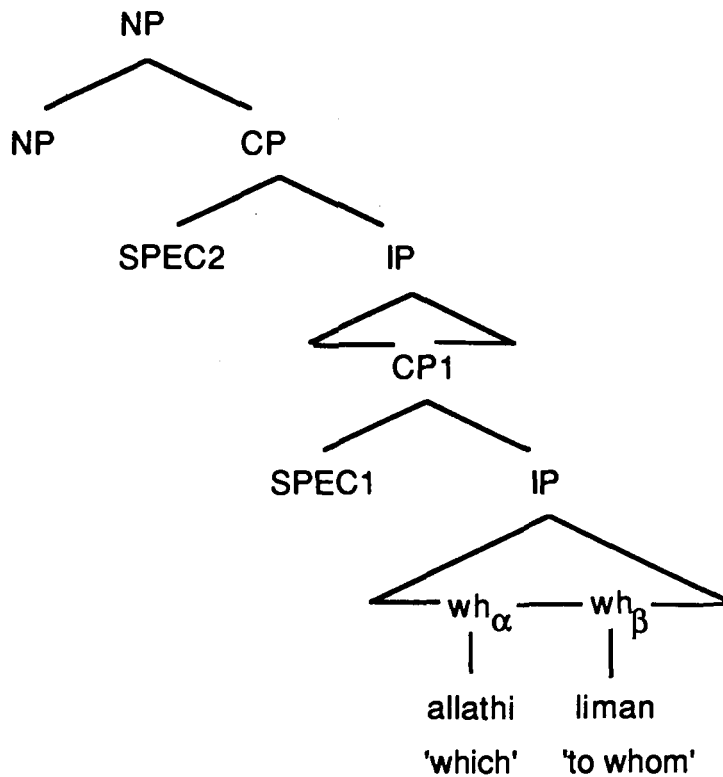
"It is to my cousin that I know which one to offer."

Now, consider the S-structure (21) of (18) with its corresponding D-structure (22):

(21) S-structure:

$[_{NP} \text{aldula:ru } [_{CP2} \text{allaʕi}_i \text{ } [_{IP2} \text{la ?ataʕakkaru } [_{CP1} \text{liman}_k \text{ } [_{IP1} \text{?aʕtaytu } \text{ka:n } \text{ʕazizun } \text{ʕalayya } \text{t}_i \text{ } \text{t}_k \text{ }]]]]]]]]]$

(22) D-structure:



Given the D-structure (22), how can (21) be derived? In other words, how can wh_α 'allathi' end up in SPEC₁, and wh_β 'liman' in SPEC₂?

Let us consider two possibilities for deriving (21):

- A. Allowing a SPEC position to contain more than one wh-phrase at some stage in the derivation.
- B. Not IP (as in English), but CP is the bounding node for Subjacency in Arabic.

According to (A), both wh_α and wh_β move simultaneously into SPEC₁, on the lower cycle, the wh_α 'allathi' moves up alone into SPEC₂ the higher cycle without violating Subjacency. According to (b), which I will adopt, wh_α moves directly into SPEC₂ without violating Subjacency since only one CP node is crossed, and wh_β moves into SPEC₁. If the English value of the parameter is taken with the lowest IP as a barrier, the movement wh_α would be ill-formed as

two bounding nodes would be crossed; this prediction is incorrect since the sentence is perfectly acceptable.

There is empirical evidence that leads to rejecting hypothesis (A):

(23)

a. la ?aʃrifu man saʔala liman ?aʃtaytu Idula:ra
 not I know who asked to whom I gave the dollar
 "I do not know who asked to whom I gave the dollar."

b. *aldullaru allaði la ?aʃrifu man saʔa laliman ?aʃtaytu
 the dollar which not I know who asked to whom I gave
 kaana ʃazizan ʃalayya
 was dear to me
 "The dollar which I do not know who asked to whom I gave was dear to me"

(24)

a. la ?aʃrifu kam min almuʃalimi:na yaʃrifu:n ?ayna
 not I know how many teachers know where
 yaʔkulu ʃamrun altaʃa:ma
 eat ʃamr the food
 "I do not know how many of the teachers know where ʃamr will eat food."

b. *altaʃamu allaði la ?aʃrifu kam min almuʃalimi:na
 the food which not I know how many teachers
 yaʃrifu:n ?ayna yaʔkulu ʃamrun laði:ʃun
 know where eat ʃamr delicious

"The food which I do not know how many of the teachers know where ʃamr will eat is delicious."

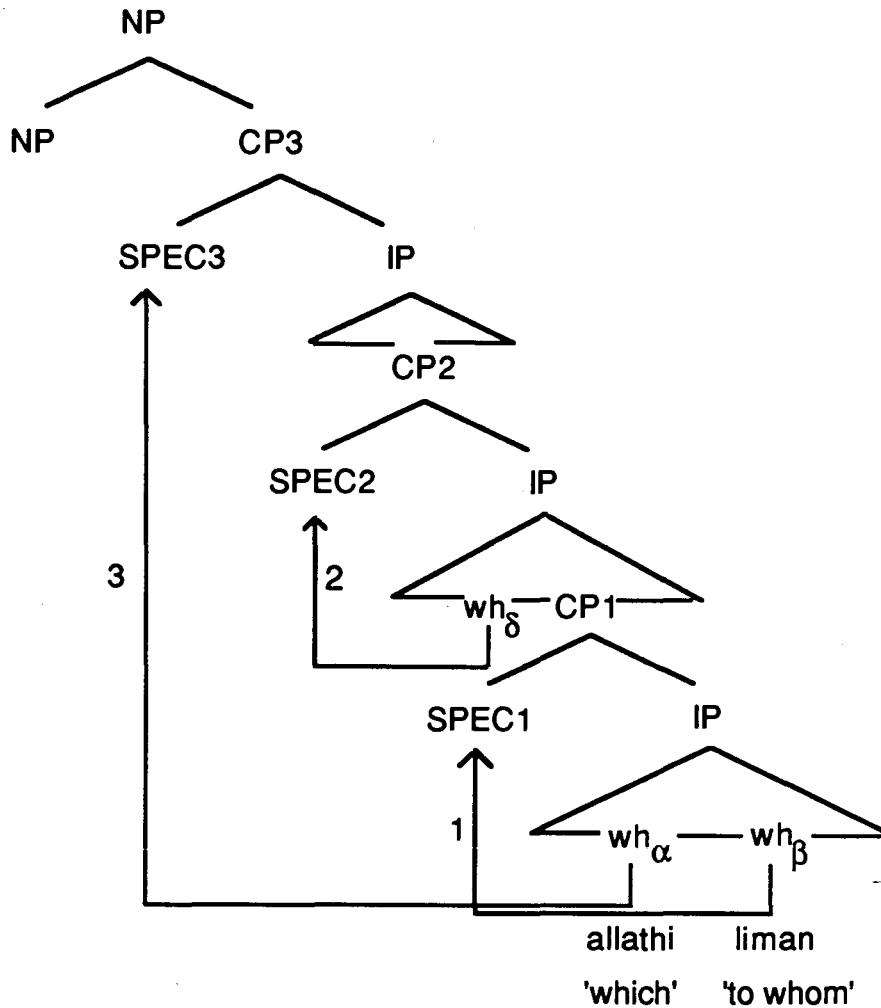
(25)

a. yufakkiru ʃamrun man yasʔalu mata: rakiba almuʃalimu
 think ʃamr who ask when rode the teacher
 alfarasa
 the horse
 "ʃamr is thinking who to ask when the teacher rode the horse."

b. *alfarasu allati yufakkiru ʃamrun man yasʔalu mata: rakiba
 the horse which think ʃamr who ask when rode
 almuʃalimu sarifaton
 the teacher fast

"The horse which ʃamr is thinking who to ask when the teacher rode is fast."

(26)



The grammatical status of the (a) sentences of (23-25) show that the predictions of hypothesis (A) are incorrect, whereas those of hypothesis (b) are correct. The (b) sentences of (23-25) have exactly the D-structure (26) and can be derived from (26) by assuming, as in hypothesis (A), that [SPEC, CP] can be doubly filled. The fact that the sentences are ungrammatical means that hypothesis (A) should be rejected. Hence, the only way to derive the (b) sentences would be to move wh_{α} which stands for the relative pronoun *allathi* directly into SPEC₃, thereby crossing two CP nodes. If CP is a barrier (= bounding node) for

Subjacency in Arabic, then the (b) sentences violate this principle and are therefore correctly ruled out.

The counterpart of the (b) sentences, where null resumptive pronouns rather than traces occur in the most deeply embedded sentences, is much better although the complex nature of these sentences makes them somewhat difficult to process perceptually:

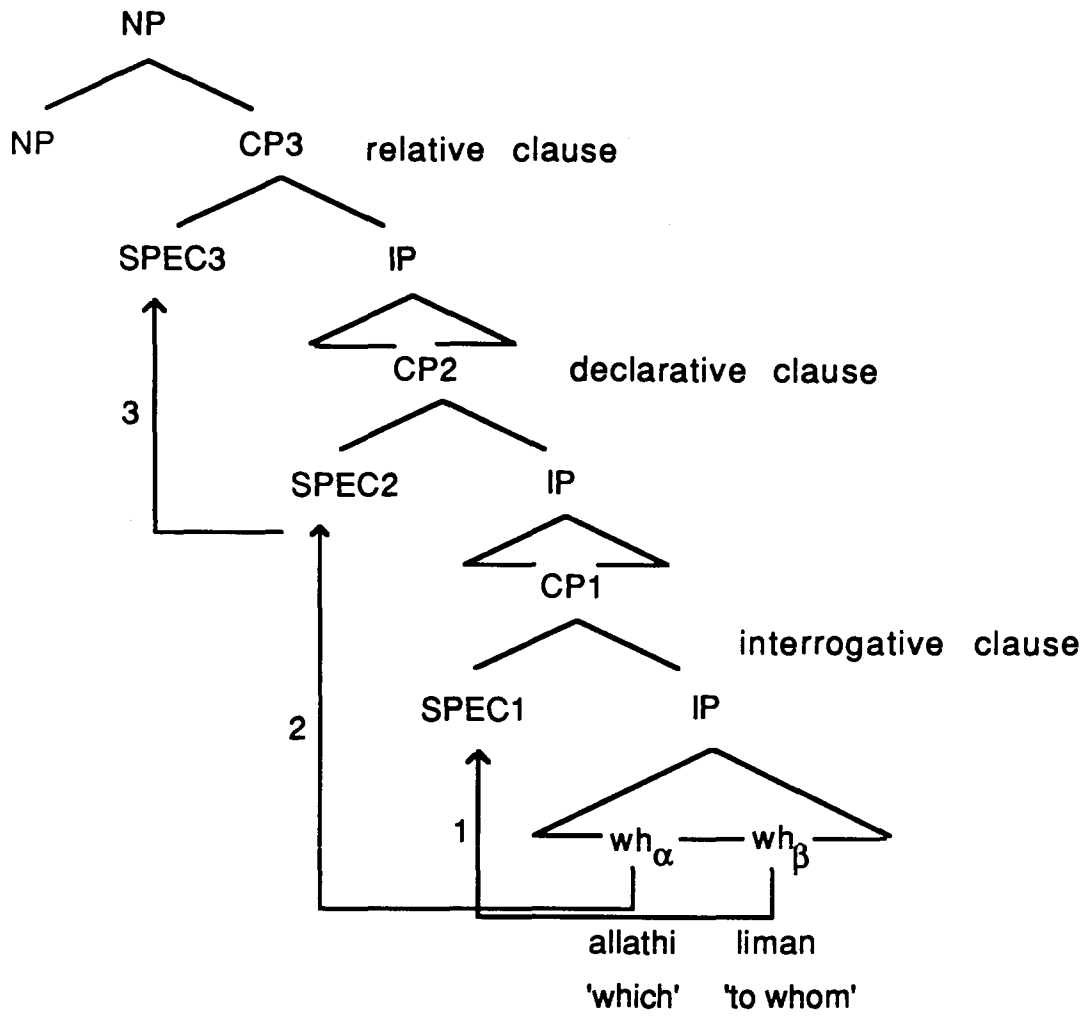
(27)

- a. aldullaru allathi la ?aʕrifu man saʕala liman ?aʕtaytuhu ka:na
ʕazi:zan ʕalayya
- b. altaʕamu allaʕi la ?aʕrifu kam min almuʕalimiina yaʕrifu:n ?ayna
yaʕkuluhu ʕamrun laʕi:ʕun
- c. alfarasu allati yufakkiru ʕamrun man yasʕalu mata: rakibaha
almuʕalimu sariʕatun

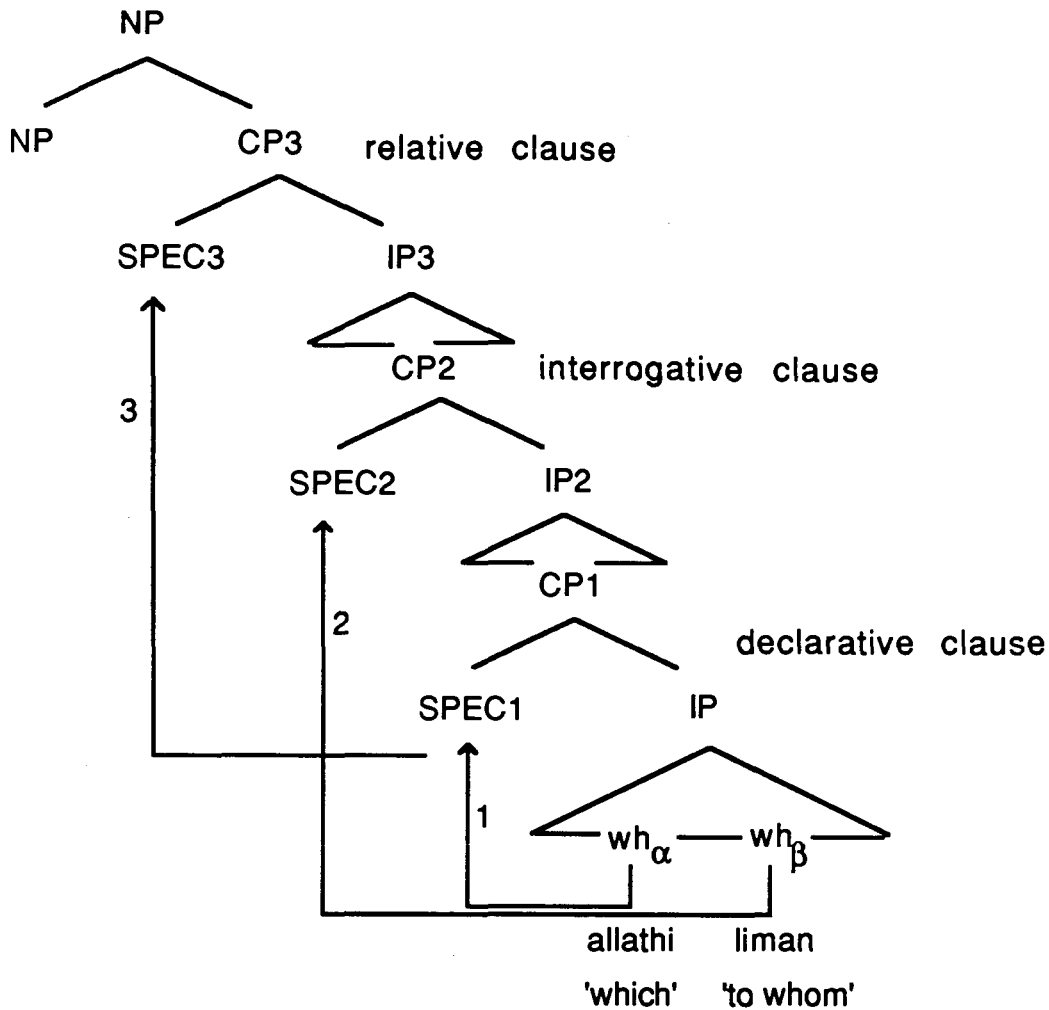
It is not uncommon for languages to have two relativization strategies, one which involves resumptive pronouns and violates Subjacency, and one which involves traces and obeys Subjacency. See, for example, Chomsky (1977) and Borer (1984) for Hebrew. English, as has often been noted, also has a resumptive pronoun strategy for relativization, though it is considered marginal. It should be pointed out that the resumptive pronoun in Arabic is null and is (locally) identified by a clitic. Recall that Arabic is a null argument language: subject and object pronouns are null. Thus, one expects that resumptive pronouns to be null in Arabic, as all pronouns may be null. The Subjacency violations of relativization structures in Arabic, then, follow from the assumption that relativization structures may be base-generated and the fact that Arabic allows null subjects and objects.

There is a class of structures which give more empirical support for hypothesis (B). The structures are represented in (28a) and (28b), which differ minimally in the order in which the declarative and interrogative clauses are embedded:

(28a)



(28b)



(29)

- a. aldula:ru [_{CP} allaði_i ?adunnu [_{CP} t_i yaʔrifu ʔamrun [_{CP}
the dollar which I think know ʔamr
liman_k [_P ?aʔartu t_i t_k ka:na jadi:dan]]]]
to whom I lent was new
"The dollar which I think ʔamr knows to whom I lent was new."
- b. *aldu:laru [_{CP} allaði_i ?aʔrifu [_{CP} liman_k yadunnu
the dollar which I know to whom thinks
ʔamru [_{CP} t_i [_P ?aʔartu t_i t_k ka:na jaidan]]]]]
ʔamr-nom I lent was new
"The dollar which I know to whom ʔamr thinks I lent was new."

(30)

a. alkita:bu [CP allaði_i hasibtu [CP yufakkiru ɣamrun [CP mata:k_k
the book which I believe thinking ɣamr when
[IP yaqra?u t_i t_k mufi:dun]]]]
read useful

"The book which I believe ɣamr is thinking when he will read is useful."

b. *alkita:bu [CP allaði_i ?ufakkiru [CP mata:k_k yahsibu ɣamrun
the book which I think when believe ɣamr
[CP t_i [IP yaqra?u t_i t_k mufi:dun]]]]
read useful

"The book which I think when ɣamr believes he will read is useful."

(31)

a. almuɣalimu [CP allathi_i ?adunnu [CP yaɣrifu ɣamrun [CP ma:k_k [IP
the teacher who think know ɣamr what
sa?uɣti t_k t_i yaqu:mu al?a:na]]]]
will give stand now

"The teacher who I think ɣamr knows what I will give will stand up now."

b. *almuɣalimu [CP allaði_i ?aɣrifu [CP ma:k_k yadunnu ɣamrun [CP
the teacher who I know what thinks ɣamr
t_i [IP sa?uɣti t_k t_i yaqu:mu al?a:na]]]]
will give stand up now

"The teacher who I know what ɣamr thinks I will give will stand up now."

(32)

a. alsaya:ratu [CP allati_i ?axbarani ɣamrun [CP laa yatathakkaru [CP
the car which told-me ɣamr not remember
liman_k [IP ?aɣa:ra t_i t_k kabi:ratun]]]]
to whom lent big

"The car which ɣamr told me that he does not remember to whom he lent is big."

b. *alsaya:ratu [CP allti_i ?axbarani ɣamrun [CP liman_k la
the car which told me ɣamr to-whom not
yatathakkaru [CP t_i [IP ?aɣa:ra t_i t_k kabiratun]]]]
remember lent big

"The car which ɣamr told me to whom he does not remember he lent was big."

Hypothesis (A), which allows a specifier position to be doubly filled at a given link of movement, predicts that the sentences in (b) are derivable, and falsely predicts that they would be grammatical. Since they are not, hypothesis (A) is

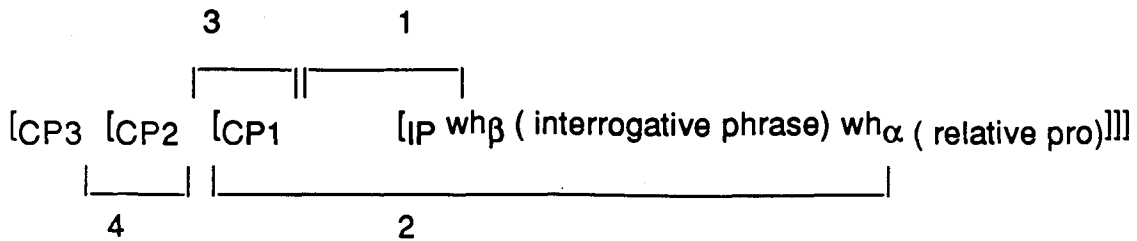
not a viable solution and is thus rejected. I now pursue the other alternative, hypothesis (B).

The derivation of the (a) sentences is consistent with structure (28a). The element wh_{β} , representing the interrogative pronoun, moves into $SPEC_1$ (movement 1); the element wh_{α} representing the relative pronoun moves directly into $SPEC_2$ (movement 2), and then climbs up to $SPEC_3$ (movement 3). Movement 2 crosses one barrier, namely CP_1 , whose specifier position is occupied by wh_{β} . The (a) sentences derived in this manner are grammatical, though they do not involve the best case of movement the crossing of zero barriers.

Now, consider the derivation of the ungrammatical sentences in (b) which are consistent with the the structure (28b). wh_{α} (the relative pronoun) moves into $SPEC_1$ (movement 1) and wh_{β} (the interrogative pronoun) moves directly into $SPEC_2$ (movement 2) and continues to move from $SPEC_1$ into $SPEC_3$ (movement 3). Under this mode of derivation, movement 2 crosses CP_1 , a barrier by virtue of dominating a BC, IP_1 , from which it inherits barrierhood. Movement 3 adds a second barrier by crossing CP_2 , which inherits barrierhood from the non-L-marked IP_2 . Then there are two links of movement crossing a total of two barriers, suggesting that Subjacency effects gradually increase in severity by successive additions. The degraded nature of the (b) sentences, compared to the acceptable (a) sentences is presumably due to the gradual building up of the effects of Subjacency. This is expected if we view Subjacency as a processing constraint applying at S-structure.

Another mode of movement is possible which is shown in (33), and that is to move wh_{β} to $SPEC_1$ (movement 1), and wh_{α} to $SPEC_2$ (movement 2) from the bottommost IP:

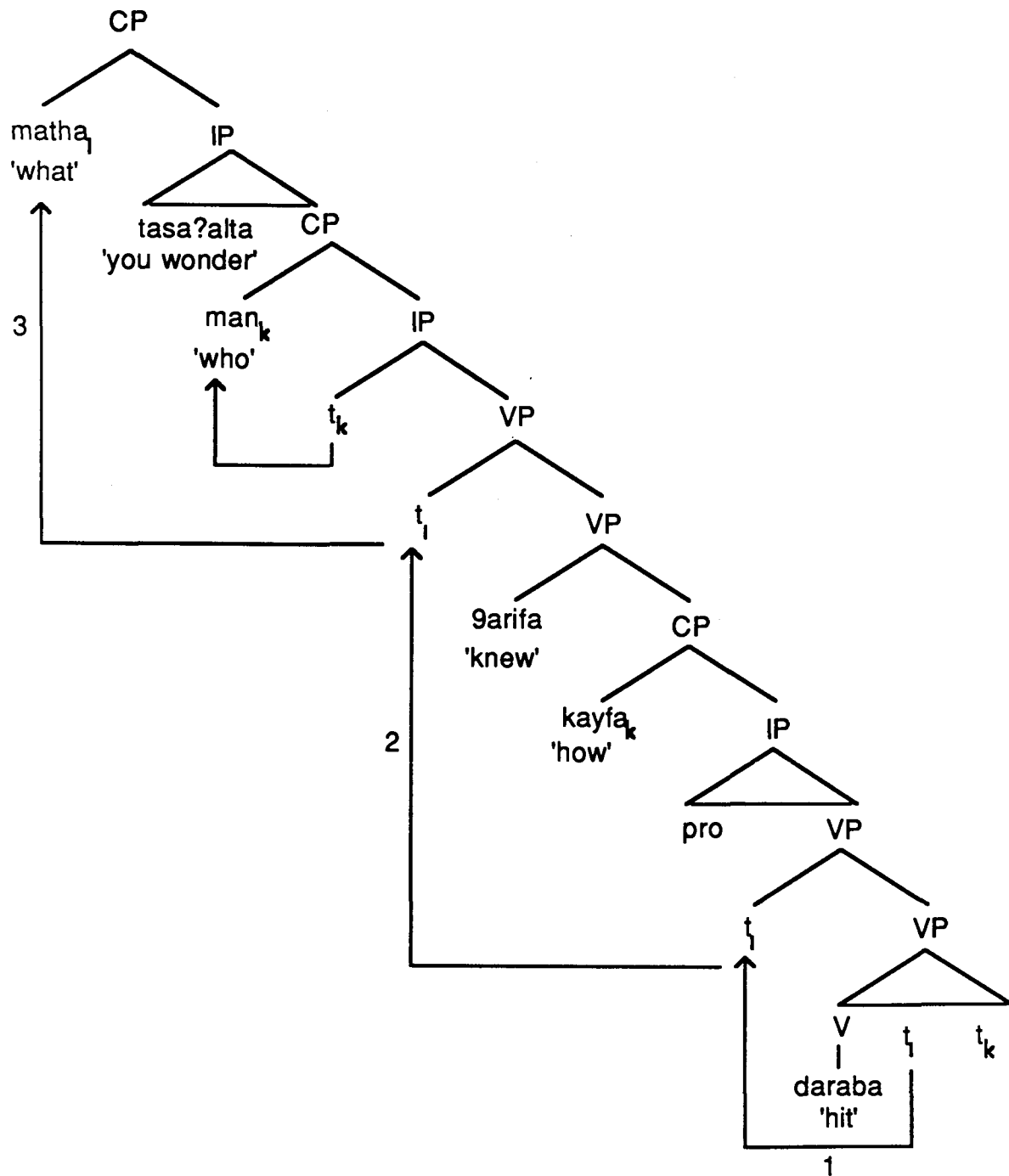
(33)



Then move wh_b from $SPEC_1$ to $SPEC_2$ (movement 3), and once again move wh_a from $SPEC_2$ to its goal $SPEC_3$ (movement 4). Link two crosses CP_1 which inherits barrierhood from the non-L-marked IP. Therefore, one barrier is crossed. The degraded sentences in (b) suggest that a barrier is crossed more than once under (33). Suppose, then, that the bottommost CP, CP_1 , is an inherent barrier to wh-movement over and above the barrier system outlined above and in Chomsky (1986b). Then link 3 also crosses CP_1 , yielding degraded sentences. This suggests that the parametric difference between Arabic and English relates to the choice of the deeply embedded CP versus IP; that is, in Arabic the "additional barrier" is the lowest CP, and in English it is the lowest tensed IP. In both languages the parameter is restricted to the lowest clause in the structure. It should be emphasized that choice of CP rather than IP as the value of the parameter adds no new barrier to the system in cases (28a) and (28b) since the lowest CP is already a barrier by inheritance from a non-L-marked IP, a BC. This is generally supported by the facts of Arabic.

Consider the example in (34) in which a wh-island is violated twice, yielding an ungrammatical sentence:

(34)



"what did you wonder who knew how hit"

(34) is formed by movement of *matha* 'what' from t_i to VP (movement 1), then by movement 2 to VP, and finally by movement 3 to the matrix specifier of CP obviously through adjunction to VP again. There are two links of movement that

cross a single barrier: link 2, which crosses CP (a barrier by inheritance since it dominates IP), link 3 crosses CP (a barrier for the same reason that makes the lower CP a barrier). This provides additional support for the idea that violations are cumulative. Note that considering the lowest CP a barrier, being the value of the parameter in Arabic, adds no extra barrier in (34) since CP is already a barrier. If the English value of the parameter is taken with the lowest tensed IP adding a barrier, link 2 would cross two barriers namely, IP and CP.

Since Arabic allows both null subjects and null objects, one should expect that both subjects and objects should be available for relativization out of a syntactic island. This is verified by the following data. While *wh*-questions out of relative clauses are disallowed, relativization of both subjects and objects out of relative clauses is permitted. It is perhaps worth noting at this point that variation in judgement might exist over the array of data considered here due to its complex nature. This is not surprising for Subjacency violations, as it is known that Subjacency violations are weak --- Subjacency being an S-structure processing constraint in comparison with the severe ECP violations ---ECP being an LF (logical) constraint. The relevant contrast here is that between (35) and (36):

(35)

a.
 **man_i qa:balta [_{NP} al?ami:rata [_{CP} allati taʕrifu Layla [_{NP} albinta [_{CP}allati la
 who met the woman who know Layla the girl who not

tatasawaru [_{CP} kayfa_k sariqa t_i alfarasa t_k]]]]]
 imagine how stole the horse

"who did you meet the woman who Layla knows the girl who does not imagine how stole the horse"

b.
 **matha_i qa:balta [_{NP} al?ami:rata [_{CP} allati taʕrifu Layla [_{NP}
 what met the woman who know Layla
 [_{CP} albinta allati la tatasawaru [_{CP} kayfa_k [_{IP} sariqa alrajul_i t_k]]]]]
 the girl who not imagine how stole the man
 "what did you meet the princess who Layla knows the girl who does not imagine
 how the man stole"

(36)

a.
 ? qa:baltu [_{NP} alrajula [_{CP} allaʕi taʕrifu Layla [_{NP} albinta [_{CP}
 met the man who know Layla the girl
 allati la tatasawaru [_{CP} kayfa_k [_{IP} sariqa alfarasa t_k]]]]]
 who not imagine how stole the horse
 "I met the man who Layla knows the girl who does not imagine how he stole the
 horse"

b.
 ? ra?aytu alfarasa [_{CP} allaʕi taʕrifu Layla [_{NP} albinta [_{CP} allati la
 saw the horse which know Layla the woman who not
 tatasawaru [_{CP} kayfa_k [_{IP} sariqa-ha alrajulu t_k]]]]
 imagine how stole it the man
 "I saw the horse which Layla knows the girl who does not imagine how the
 man stole it"

One should also expect that relativization of arguments other than subjects out of a syntactic island should be prohibited unless there is an overt clitic. The sentences in (37) show that relativization of complements of V, N, and P must obey Subjacency and that Subjacency violations can be "saved" if a clitic is attached to the head of the construction, (cf. also 36b):

(37)

a.
 ?istaqa:la al?amiiru [_{CP} allaʕi [_{IP} ʕtaqalat alʕurtatu [_{NP} almar?ata
 resigned the prince who arrested the police the woman
 [_{CP} allati [_P darabat*(hu)]]]]
 who hit (ob cl)
 "The prince who the police arrested the woman who hit (him) resigned"

b.
 ja:?a [_{NP} alsuhufiyu [_{CP} allaħi [_{IP} naġarat almadrasatu
 came the journalist who published the school
 [_{NP} maqa:la-_{[NP}*(hu)]]]]]
 article (his)

"The journalist whose article the school published came"

c.
 kasar řamrun almindadata [_{CP} allati wadařat alkita:ba [_{PP} řalay-_{[NP}*(ha:)]]]
 broke řamr the table which put the book on (it)
 "řamr broke the table which I put the book on *(it)"

The Subjacency facts within relativization receive a natural and systematic explanation given the possibility of base-generation of relatives with null resumptive pronouns and the fact that we independently know that pronouns in Arabic may be null.

We see then that the complex constructions of relativization provide strong support for the principle of Subjacency as the principle is extended to seemingly conflicting and very different data in Arabic.

4.2.5 Wh-questions in Arabic

Arabic utilizes two strategies of forming wh-constructions: one employs clitics while the other does not. The two possibilities are given below in (38–39) where the (a) sentences illustrate the no-clitic strategy and the (b) sentences the clitic strategy:

(38)
 a man_i ra?a Hasan-un t_i
 who saw-3sgm Hasan-nom
 "Who did Hasan see?"

b. man_i ra?a-hu_i Hasan-un
 who saw-obcl Hasan-nom
 "Who did Hasan see?"

(39)
 a. man_i qa:l-at Zaynab-un ?anna Hasan-an ra?a t_i
 who said-3sgf Zaynab-nom that Hasan-acc saw-3sgm
 "Who did Zaynab say that Hasan saw?"

- b. man_i qa:l-at Zaynab-un ʔanna Hasan-an raʔa-hu_i
 who said-3sgf Zanab-nom that Hasan-acc saw-obcl
 "Who did Zaynab say that Hasan saw?"

The two strategies are subject to Subjacency, as seen from the fact that the use of a clitic in (40b) does not save the structure where extraction has taken place from a complex NP (cf. also section (4.8.1)) below for similar facts in Topicalization).

(40)

- a. *man_i raʔay-ta al-marʔat-a allati tu-hib-u t_i
 who saw-2sgm the-woman-acc who 3sgf-like-ind
 "Who did you see the woman who loves?"
- b. *man_i raʔay-ta al-marʔat-a allati tu-hib-u-hu_i
 "Who did you see the woman who loves?"

It is also useful to note that the strategy with clitics patterns with the one without clitics in that the distance between the wh-phrase and its extraction site can theoretically be infinite. This is illustrated in (41) where the accusative clitic *-hu* indicates third person singular masculine object:

(41)

- a. man_i danan-ta ʔanna Zayd-an qa:la ʔanna Hind-an
 who believed-2sgm that Zayd-acc said that Hind-acc
 zafam-at ʔanna Hasan-an daraba(-hu) t_i
 claim-3sgf that Hasan-acc hit (obj cl)
 "Who did you believe that Zayd said that Hind claimed that Hasan hit"

The alternation between clitics and no-clitics is consistent and free. Prima facie, one would assume that the two versions would behave differently with respect to Subjacency. One would expect that the presence of a clitic makes extraction out of a complex NP possible as it allowed a Ld'd NP to have a coreferent linkage with a resumptive pronoun across a complex NP. However, this does not seem to be the case, as the two strategies are governed by the CNPC, as demonstrated by the ungrammaticality of the sentences in (40) where the extraction has taken place from inside a complex NP. The crucial point is

that the utilization of a clitic does not rescue the structure, as (40b) shows. This raises questions regarding the role of the clitic in Wh-constructions. We observed cases where its insertion makes the structure grammatical and cases where this insertion does not have such an effect. If it is assumed that Wh-formation is derived via move- α where the category α leaves a wh-trace in its original position, we would predict that extraction out of syntactic islands is prohibited. This prediction is born out as shown in (40). In effect, I am assuming that what we have in (40b) is a trace sensitive to the CNPC and not a base-generated resumptive pronoun. This assumption correctly predicts the ungrammaticality of (40b) in which a clitic does not regularize the derivation.³

I now consider Subjacency effects on Wh-questions.

4.2.5.1 Wh-questions and Subjacency

Wh-question constructions with *man* 'who', in its two forms --- with and without clitics obey Subjacency, the CNPC (42) below, and the wh-island constraint (43). I conclude that their derivation is obtained via movement:

(42)
 a. * man_i [_{IP} $ra?ay-ta$ [_{NP} $al-malik-a$ [_{CP} $alla\delta i$ [_{IP} $qa:bala$ t_i]]]]
 who saw-2sgm the-king-acc who met
 "Who did you see the king who met ?"

b. * man_i [_{IP} $ra?ay-ta$ [_{NP} $al-malik-a$ [_{CP} $alla\delta i$ [_{IP} $qa:bala-hu_i$ t_i]]]]
 -obj cl

(43)
 a. ?? man_i [_{IP} $la: ta\text{rifu}$ [_{CP} $lima:\delta a$ [_{IP} $qa:bala$ $al-malik-u$ t_i]]]]
 who not know why met the-king-nom
 "Who don't you know why the king met ?"

³ It has been observed in a number of languages that resumptive pronouns behave like overt wh-traces cf. Engdahl (1980), Engdahl et al (1981), Maling and Zaenen (1983) for Swedish and other Scandinavian languages; cf. also McCloskey (1979) for Irish, and Koopman and Sportiche (1982) for Vata.

(47)

a. * ʕamr-an ʔakram-tu al-fata:t-a allati ʕallam-att t al-qira:ʔata
 ʕama-acc honored-1sg the-girl-acc who taught-3sgf the-reading
 "ʕamr, I honored the girl who taught t how to read"

b. * ʕamr-an ʔakram-tu al-fata:t-a allati ʕallam-att-hu tal- qira:ʔat-a
 -obj cl

The base-generation of interrogatives with *ʔayy* and clefted questions with clitics is supported by the facts of Case. The interrogative element always bears the nominative Case, as we will see in the following subsection.

4.2.5.3 Base-generated Wh-phrases and Nominative Case

In this respect, consider (48) and (49). In (48) *ʔayy* binds an object clitic. *ʔayy* in (48a) bears the nominative Case. In (48b), however, it bears accusative Case inherited from its trace in spite of the presence of a clitic. In (49) *ʔayy* binds a trace. In (49a) it bears nominative Case and the sentence is ungrammatical. It bears accusative Case in (49b) but the sentence is grammatical:

(48)

a. ʔayy-u maqa:l-in nafarta-hu
 which-nom article-gen publish-obj cl
 "Which article did you publish?"

b. ʔayy-a maqa:l-in nafarta-hu
 acc

(49)

a. *ʔayy-u maqa:l-in nafarta t
 b. ʔayy-a maqa:l-in nafarta t

allɪi in clefted constructions must bear nominative Case (50a), and it cannot bear accusative Case, as evidenced by the ungrammaticality of (50b):

(50)

a. man allaʕ-a:-ni ʔahanta-huma:
 who they-nom-dual insulted-them(dual)
 "Who are those whom you insulted?"

- b. * man allað-ay-ni ?ahanta-huma:
acc

One way to ensure that the moved Wh–NP receives its accusative Case is to assume that Case is assigned to the NP before it is moved to [Spec, CP] so that it carries Case along. The Wh–NP in (49b) is moved from an object position, thus inheriting the accusative Case assigned by V. Notice that if the Wh–NP is not moved from an object position but is base-generated in [Spec, CP], as in (48a) (cf. the discussion around 45), it will not bear the Case assigned to that position. This is precisely the case in base-generated constructions utilizing resumptive pronouns, such as LD. Since the Ld'd NP is not moved, it does not bind a trace from which it can inherit Case. Thus, conforming to the default rule of nominative Case assignment (chapter 3) repeated below in (51), it always bears nominative Case, even if it refers to an object position: ⁴

(51) Nominative Case Assignment:

Assign nominative Case to an NP iff:

- i. NP is not in the government domain of a Case marker
- ii. NP cannot inherit Case.⁵

Notice that if the constructions in (48a) and (50) are derived by move- α , the clitic would not absorb the accusative Case but would transmit it to the clitic's antecedent, as in topicalization (52a) and wh-questions (52b). Both sentences include object clitics: ⁶

⁴ Topicalization, discussed in the following section, provides further empirical support for Case inheritance.

⁵ On Case inheritance cf. section (4.8.6) of this chapter, cf. also chapter (3), section (3.16.4).

⁶ I shall subject topicalization to further investigation in section (4. 8) below in an attempt to determine how they are interpreted and the extent to which they are related to the other constructions discussed in this thesis.

(52)

- a. ʔamr-an_i daraba-hu Zayd-un t_i
 ʔamr-acc hit-obj cl Zayd-nom
 " ʔamr_i , Zayd hit t_i "
- b. ʔayy-a rajulin darab-ta-hu
 which-acc man hit-1sgm-obj cl
 " Which_i man did you hit t_i "

In order for the moved NP in these constructions to receive Case, Case must be released from absorption by the clitic. The clitic need not absorb the Case feature of the head to which it is affixed. Case can thus be inherited by the moved NP. Recall that based on the analysis of the clitic–doubling data where the grammatical features of a lexical NP in argument position are reproduced by a coindexed clitic, I argued that clitics absorb Case. Thus, the Lexical NP is left without Case in violation of the Case Filter. The semantically empty preposition *li* 'of' is inserted to Case–mark that NP, and thus the Case Filter is satisfied. Topicalization and *wh*–questions with clitics, however, suggest that Case absorption by clitics needs to be parameterized language–internally, or perhaps cross–linguistically.

(53) Case absorption parametrized:

A clitic may absorb Case

based on some data, the language learner narrows down the possibilities open to him and sets the value for (53). That is based on whether the construction encountered is derived by movement or by base–generation, the learner determines the value of (53)

I conclude with a distinction between two empty categories: a base–generated resumptive pronoun and a trace. Both may occur as arguments of lexical heads. Their property, among others, is to be assigned Case (cf. 48 and 50). Since the pronoun is null its features must be identified by the clitic through

coindexing, and since the pronoun and the trace are arguments they need to be Case-marked to be visible to the PFI at LF. The constructions in which these arguments are not a clitic doubling context, therefore *li-insertion* -- the equivalence of *of-insertion* in English -- is not available to assign Case to the arguments. Thus the only option available is for the clitic to transmit the Case assigned by the head to the complement. The trace transmits the Case to its antecedent (the head -- i.e. the highest member -- of the \bar{A} -chain) in lines with Case theory (cf. 52). In chapter 6, I will extend the notion of chain to cover A-chains (whose head is in an A-position) and as well as \bar{A} -chains (whose head is in an \bar{A} -position). On the other hand, the pronoun does not transmit Case to its antecedent since the two elements are not in a single chain that is formed by move-alpha. Thus, the wh-word *?ayy-u* in (48a) and *?allaḏa:ni* in (50a) are in the nominative Case despite the fact that they refer to object sites. This is so since the construction in which they appear is base-generated and therefore Case transfer does not apply. The presence of both, the pronoun and the trace, is forced by the Projection Principle to satisfy the complementation requirements of the head of the construction.

With respect to the role of the clitic, it is pertinent to point out an important difference between wh-extraction and relative clauses. Like wh-extraction, two strategies are available for effecting relatives in Arabic, as will be elaborated upon in the following section.

4.2.6 Relative Clauses:⁷

Relative clauses in Arabic can be derived in two ways: one utilizes resumptive pronouns coindexed with the head of the relative construction, and the other utilizes gaps.⁸ The occurrence of resumptive pronouns and gaps are illustrated in the following examples of non-subject relatives:

Consider the sentences in (54):

(54)

a. *fahad-tu* [_{NP} *al-ʔahram-a_i* [_{CP} *allati_i* *tu-hibu-ha_i* *pro_i*]]
 saw-1sg the-pyramids-acc which(fem) 2sgm-like-obcl
 "I saw the pyramids_i that you like them_i "

b. *fahad-tu* [_{NP} *al-ʔahram-a_i* [_{CP} *allati_i* *tu-hibu* *t_i*]]
 saw-1sg the-pyramids-acc which (fem) 2sgm-like
 "I saw the pyramids_i that you like t_i "

c. *ʔaqabal-a* [_{CP} *allaʔi_i* *tu-hib-u-hu_i* *pro_i*]
 came-3sgm who(masc) 3sgf-like-ind ob cl
 "The one whom_i she likes him_i came"

d. *ʔaqabal-a* [_{CP} *allaʔi_i* *tu-hib-u* *t_i*]
 came-3sgm who(masc) 3sgf-like-ind
 "The one whom_i she likes t_i came"

In each of the sentences above, an object NP has been relativized. In (a and c), the relativized site is marked by a resumptive pronoun *pro*, displaying the grammatical features of the head NP, which is lexical in (a) and empty in (c). In (b and d), however, the resumptive pronoun is missing. In other words the slot of the relativized NP appears as a gap *t*.

One may assume that the utilization of the two strategies in relatives is similar to that in wh-extraction. In fact, this similarity is only apparent. Notice, in

⁷ There is no intention to discuss relative clauses in any detail. The discussion here will aim to establish that whenever a clitic is present the gap of the relativized NP is filled with a base-generated resumptive pronoun. For an indepth analysis of relative clauses within an EST model, the reader is referred to Suaieh (1980) and Awwad (1973).

⁸ One of the major differences between Standard Arabic in one hand and Iraqi Arabic dialects and most of the other Arabic dialects on the other hand is that the dialects have lost the option of a trace instead of a clitic in relatives and topicalization.

this respect, the derivation of the (a and c) sentences of (54); the version with clitics, under further embedding, is not subject to Subjacency while that of the (b and d) sentences, the version with a trace, is subject to Subjacency:

(55)

a. sahad-tu al-ʔahram-a_i allati saddaq-tu zaʔma Zayd-
 saw-1sg the-pyramids-acc which(fem) believed-1sg claim Zayd-
 in ʔanna al-malik-a yu-hib-u-ha_i pro_i/ *t
 gen that the-king-acc 3sgm-like-ind-ob cl
 "I saw the pyramids which I believed Zayd's claim that the king liked them/*t"

b. ʔaqabal-a allaʔi_i saddaq-tu zaʔma Zayd-in ʔanna
 came-3sgm who(fem) believed-1sg claim Zayd-gen that
 al-ʔamirat-a tu-hib-u-hu_i pro_i/ *t
 the-princess 3sgf-like-ind-ob cl
 "The one who I believed Zayd's claim that the princes like him/t came"

The sentences in (55) show that relative clauses in Arabic can be obtained via base-generation and via movement.⁹ The function of the clitic in (54a and 54c), on one hand, and in wh-questions, on the other hand, is not the same. In the first case, the clitic licenses (identifies in terms of features such as person, number and gender) and governs a base-generated resumptive pronoun.¹⁰ In the second case, the clitic properly governs a trace.¹¹

⁹ See Borer (1984) for a similar analysis of Modern Hebrew relatives. Borer reports that Modern Hebrew does not have a relative pronoun. Relative clauses in Modern Hebrew display resumptive pronouns in a way similar to relatives in Arabic. Unlike Arabic, however, resumptive pronouns in Hebrew relatives are fronted and later optionally deleted from the COMP position as Borer argues.

¹⁰ For a development of these ideas, cf. among others Jaeggli (1982), and Hurtado (1985).

¹¹ The early Arab grammarians analyzed the object gap in relatives as the result of an optional process of deletion which they termed *ʔal-ʔa:ʔid* deletion, the deletion of the resumptive pronoun. Similarly, Bresnan and Grimshaw (1978) accounted for the gap in relatives in terms of controlled pro-deletion rules which delete overt pronouns.

It should be recalled from chapter (3) that I assume with Williams (1980), and Chomsky (1982) that the relation between the head of the relative clause and its modifying phrase is one of predication and that this is formalized by coindexing between the wh-operator and the head of the relative which is the result of an interpretation rule of LF'.

4.3 The ECP and Clitics:

In what follows, I provide an account in terms of the Empty Category Principle (ECP) of the extraction possibilities from the complement position of the lexical categories N(oun), P(reposition) and V(erb).

The principle of Subjacency, as we have seen, imposes a locality condition on empty categories whereby the distance crossed at S-structure by the element originating in the position of the empty category may not include more than one barrier. Subjacency ensures then that the distance between a trace and its antecedent will be sufficiently "close". Further study of the properties of empty categories has led to the suggestion that the presence of a trace must be sanctioned in other ways as well. The ECP is intended to sanction the occurrence of traces in this way

The ECP states that a non-pronominal empty category must be properly governed, where proper government is defined as follows:

(56) α properly governs β iff α Θ -governs or antecedent governs β (Chomsky, 1986b: 17)

Antecedent government holds of a link (α , β) of a chain, where a governs b . A simplified version of government is given in (57), cf. chapter 1 for a more detailed definition:

(57) Government:

α governs β iff α c-commands β , and β is not protected by a barrier. α is an X^0 .

In particular, an object is properly governed by V, head of VP, but a subject or adjunct can only be properly governed in a chain by antecedent government.

Arabic has a recourse to the use of clitics to regularize derivations which are in violation of the ECP. Thus, and in accord with the ECP, the clitic which appears in boldface is obligatory in (58–60), where movement is effected from

non-properly governed positions: from a complement position of a noun (N) (58), from an object position of a preposition (P) (59), and from the position adjacent to the complementizer *?anna* in (60). Movement from an object position of a verb (V) is possible with or without a clitic (61):

(58)

a. * man ?a-kram-ta ?aX-a t
 who reward-2sgm brother-acc
 "whose brother did you reward ?"

b. man_i ?a-kram-ta ?aX-a-hu_i t_i

(59)

a. * man sallam-ta ʔal t
 who greeted-2sgm on
 "who did you give greetings to ?"

b. man_i sallam-ta ʔal-hi_i t_i

(60)

a. * man tadunnu ?anna t ?akram Zayd-an
 who believe-2sgm that honored Zayd-acc
 "Who do you believe that honored Zayd ?"

b. man tadunnu ?anna-hu_i t_i ?akram Zayd-an

(61)

a. man_i ?a-kram-ta t_i
 who 2sg-reward-2sgm
 "who did you reward ?"

b. man_i ?a-kram-ta-hu_i t_i

The ECP will correctly predict the ungrammaticality of the (a) sentences in (58–60) if I propose that the categories N, P, and the complementizer *?anna* are not proper governors. The empty category trace in these sentences is not properly governed in violation of the ECP. The (b) sentences, which are parallel to those in (a) except that they contain a clitic, are grammatical. The ECP can also account for the grammaticality of these sentences if I propose that the clitic is a proper governor for the trace of the moved NP *man*. Extraction from the complement position of V (cf. 61) is possible with or without a clitic

since the trace in that position is always properly governed by V. Thus (61a) is grammatical.¹²

The ECP, with the hypothesis that the clitic is a proper governor for the trace of the extracted NP, also accounts for the contrast between the following sentences in which the subject of a gerund is extracted:

(62)

- a. [_{IP} [_{NP} kita:bat-u ʃamr-in at-taqri:r-a] [_{VP} tuʃjibu-ka]]
 writing-nom ʃamr-gen the-report-acc please-you
 "ʃamr's writing the report pleases you."
- b. *man_i [_{IP} [_{NP} kita:bat-u t_i at-taqri:r-a] [_{VP} tuʃjibu-ka]]
 who writing-nom the-report-acc please-you
- c. man_i [_{IP} [_{NP} kita:bat-u-hu_i t_i at-taqri:r-a] [_{VP} tuʃjibu-ka]]
 who writing-nom-gencl the-report-acc please-you
 "Whose writing the report pleases you?"

Movement of *man* in (b) to the matrix specifier position of CP crosses NP, a barrier since it is not L-marked, and IP, also a barrier by inheritance from NP. Thus, *man* fails to antecedent-govern its trace. Since the gerund is specified for the feature [+N], and since nouns are not proper governors, it cannot properly govern the trace of its subject. Hence (62b) is ungrammatical. The movement also violates Subjacency since it crosses two barriers, however, the possibility of the same movement but with a clitic in (c) shows that the ECP is at work here rather than Subjacency. This explains the obligatory presence of a clitic in (62c), which is to satisfy the ECP. In other words, the clitic in (62c) properly governs the trace of the subject, conforming to the ECP.

The same phenomenon can be found in the context of topicalization to be discussed in section (4.8.2) below. While topicalization of a complement of V generates a well-formed structure with or without a clitic (63), topicalization of

¹² The facts are strictly the same in Iraqi Arabic where the categories N, P, and the complementizer *?innu* are not possible proper governors.

a possessor (64) and of a complement of P (65) without the presence of a clitic yields an ill-formed structure. In effect, the empty category left by movement will not be properly governed:

- (63)
- a. ʔamr-an_i ʔakram-tu t_i
 ʔamr-acc honored-1sg
 "ʔamr I honored"
- b. ʔamr-an_i ʔakram-tu-hu t_i
- (64)
- a. * ʔamr-an qa:bal-tu sadi:q-a t
 ʔamr-acc met-1sg friend-acc
 "ʔamr I met friend"
- b. * ʔamr-in qa:bal-tu sadi:q-a t
 -gen
- c. ʔamr-an_i qa:bal-tu sadi:q-a-hu_i t_i
- (65)
- a. * ʔamr-an ji?-tu maʔ t
 ʔamr-acc came with
 "ʔamr I came with"
- b. ʔamr-an_i ji?-tu maʔ-hu_i t_i

The preceding discussion shows that the impossibility of movement of the object of N, P, and of the NP adjacent to *ʔanna* follows uniformly from the same general principle, ECP.

4.4 Subject/Object Asymmetries

In Arabic the agreement element (AGR) can be rich enough for the identification of the null subject in terms of the features person, number and gender. Thus (66b) is a grammatical sentence:

- (66)
- a. ʔakrama ʔamr-un Zayd-an
 honored ʔamr-nom Zayd-acc
 "ʔamr honored Zayd"
- b. ʔakrama Zayd-an
 honored Zayd-acc
 "He honored Zayd"

Arabic seems to share another property with null argument languages --- that of a violation of the [**that e*] filter of Chomsky and Lasnik (1977). This filter

is subsequently reduced to the ECP, which correctly blocks subject extraction in (67a) and correctly allows object extraction in (67b):

(67)

- a. What do you believe [_{CP} t' [_C that [_{IP} Leslie would win t]]]
 b. *Who do you believe [_{CP} t' [_C that [_{IP} t would win]]]

In (67b) the *wh*-trace *t* in the embedded subject position is not properly governed by INFL since INFL is not lexical and, hence, not a proper governor.¹³ It is not governed by the embedded verb either, which does not *m*-command it, nor by the matrix verb since CP, a barrier by inheritance from the BC IP, intervenes between the two. Finally, by the Minimality Condition, the presence of the complementizer *that*, a closer governor, creates an *M*-barrier preventing *t'* from antecedent-governing *t*. In contrast, in (67a), *t* is properly governed by both the embedded verb *win* and through antecedent government by *t'*.

The contrast illustrated in (67) does not seem to be pertinent in Arabic since both (68a) and (68b) are equally grammatical:

(68)

- a. man_i ?arad-ta ?an yadriba t_i Hind-an ?
 who wanted-2sg that hit-3sgm Hind-acc
 "Who_i did you want that t_i would hit Hind?"
- b. ma:ða_i ?arad-ta ?an tadriba Hind-un t_i ?
 what wanted-2sg that hit-3sgf Hind-nom
 "What_i did you want that Hind would hit t_i?"

This could lead to the following conclusion:

(69)

Argument traces in subject and object positions are equally properly governed.

¹³ Huang (1982) assumes that INFL is a proper governor for the subject position in Chinese because of the lexical nature of INFL in this language. The fact that Chinese displays no *that*-trace, no ... *personne*, or superiority condition effects, although it does display other ECP effects, is taken to be a result of the fact that 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" (Huang, 1982: 482). For example, aspect markers are derived from lexical categories in Chinese and may appear as independent words.

Evidence from embedded LD will show that the subject of a finite clause is unextractable across a Ld'd NP in contradistinction to the object since the subject trace cannot be properly governed. To see whether (69) holds in Arabic, I need to examine another type of complement --- that which is optionally introduced by the complementizer *?anna*. As has been mentioned in chapter (2), there are two types of [-wh] complementizers in Arabic: *?anna* / *?inna* and *?an*. Their occurrence is determined by matrix predicates. *Believe*-type verbs (*yadunnu*, *yafstaqidu*, etc.) require *?anna*; *want*-type verbs (*yuriidu*, *yatamanna*;, etc.) generally require *?an*. *?an* assigns a subjunctive mood *muda:riḥ mansu:b*, a mood that is assigned to an adjacent verb. Like for in English, *?anna* assigns accusative Case to a Ld'd NP which must be adjacent to it. This NP is base-generated and is always coindexed with an embedded pronoun in various thematic positions (cf. chapter (3) for discussion and argumentation). In (70), the Ld'd NP (boldfaced) is coreferential with a pronominal subject, AGR of INFL (70a), a direct object (70b), an object of a preposition (70c), and a complement of a noun (possessor) (70d):

(70)

- a. ?adinnu ?anna **Hind-an_i** darab-at_i Zayd-an
 believe that Hind-acc hit-3sgf Zayd-acc
 "I believe that as for Hind, she hit Zayd"
- b. ?adinnu ?anna **Zayd-an_i** darab-at-hu_i Hind-un
 believe that Zayd-acc hit-3sgf-obcl Hind-nom
 "I believe that as for Zayd, Hind hit him"
- c. ?adinnu ?anna **Zayd-an_i** wasal-at Hind-un mafa-hu_i
 believe that Zayd-acc arrived-3sgf Hind-nom with-obcl
 "I believe that as for Zayd, Hind arrived with him"
- d. ?adinnu ?anna **Zayd-an_i** darab-at Hind-un zamil-a-hu_i
 believe that Zayd-acc hit-3sgf Hind-nom colleague-acc-gen cl
 "I believe that as for Zayd, Hind hit his colleague"

If (69) is a true generalization, the extraction of the subject NP from complements introduced by the complementizer *?anna* should be possible. However, this is not the case, as the sentences in (71) are ungrammatical:

(71)

- a. * man_i danna ʔamr-un ?anna Zayd-an_k ya-dribu-hu_k t_i
 who_i believed ʔamr-nom that [_{IP} Zayd-acc_k [_{IP} t_i sgm-hit-him_k]]
 "Who_i did ʔamr believe that as for Zayd_k t_i hit him_k ?"
- b. * man_i hasib-ta ?anna Hind-an_k qa:bala-ha_k t_i
 who_i believed-2sgm that [_{IP} Hind-acc_k [_{IP} t_i met-3sgm-her_k]]
 "**Who_i did you believe that as for Hind_k t_i has met her_k ?"
- c. * man_i danna ʔamr-un ?anna Hind-an_k qa:bala sadi:qat-a-ha_k t_i
 who_i believed ʔamr-nom that [_{IP} Hind-acc_k [_{IP} t_i met3sgm friend-acc-her_k]]
 "**Who_i did ʔamr believe that as for Hind_k t_i met her_k friend?"
- e. * man_i danna ʔamr-un ?anna l-rija:l-a_k ja:?a
 who_i believed ʔamr-nom that [_{IP} the-men-acc_k [_{IP} t_i came-3sgm]]
 maʔa-hum_k t_i
 with-them_k]
 "**Who_i did ʔamr believe that as for the men_k t_i came with them_k ?"

(71a), for example, is ungrammatical because the trace is in subject position. The sentence would be grammatical if the trace were in object position with *man* and *-hu* coindexed, in which case the assignment of indices would be as (72a). The sentence would be interpreted as (72b):

(72)

- a. man_i ʔamr-un_m Zayd-an_k hu_i t_i
 b. ʔamr believed that as for Zayd , who did Zayd hit ?

The interpretation that is not obtainable is (73):

- (73) ʔamr believed that as for Zayd , who hit Zayd ?

It is interesting to note that wh-movement from positions other than subjects over a Ld'd NP is always possible:

(74)

- a. man_i tadinnu ?anna [_{IP} Hind-an_k [_{IP} tazawwaj-at_k t_i]]
who believe that Hind-acc married-3sgf
"Who_i do you think that as for Hind, she married t_i ?"
- b. ma:ða_i tadinnu ?anna [_{IP} ʕamr-an_k [_{IP} ?aʕta:-hu_k Zayd-un t_i]]
what believe that ʕamr-acc gave-him Zayd-nom
"What_i do you believe that as for ʕamr_k, Zayd gave t_i to him_k ?"
- c. mata_i hasib-ta ?anna [_{IP} ʕamr-an_k [_{IP} daraba-hu_k Zayd-un] t_i]¹⁴
when think-2sg that ʕamr-acc hit-him Zayd-nom
"When_i do you think that as for ʕamr_k, Zayd hit him_k t_i ?"
- d. lima:ða_i tadinnu ?anna [_{IP} Hind-an_k [_{IP} ja:?a ʕamr-un maʕa-ha_k] t_i]
why believe that Hind-acc came ʕamr-nom with-her
"Why_i do you believe that as for Hind_k, ʕamr came with her_k t_i ?"

That the NP in the IP–adjoined position is a Ld'd NP is confirmed by the general properties of Left–dislocation examined in chapter (3). The NP is obligatorily [+specific]. The sentences in (75) corresponding to paradigm (74), and in which the NP is non–specific, are excluded:

(75)

- a. * man_i tadinnu ?anna [_{IP} ?imraʔat-an_k [_{IP} tazawwaj-at_k t_i]]
a woman-acc
- b. * ma:ða_i tadinnu ?anna [_{IP} rajul-an_k [_{IP} ?aʕta:-hu_k Zayd-un t_i]]
a man-acc
- c. * mata_i hasib-ta ?anna [_{IP} jamal-an_k [_{IP} daraba-hu_k Zayd-un] t_i]
a camel-acc
- d. * lima:ða_i tadinnu ?anna [_{IP} da:bit-an_k [_{IP} ja:?a ʕamr-un maʕa-ha_k] t_i]
an officer

Moreover, as indicated above, the NP adjacent to ?anna is obligatorily coreferent with a pronominal in the interior of the embedded IP. In effect, (76),

¹⁴ Here, I assume crucially that the trace of the adjunct is hanging from the first specified IP node in the structure, rather than from the one immediately below it. Let us assume that this structure is possible as an option. The reason for this will become relevant only in section (4.6). See also Chomsky (1986a : 19) who applies the same reasoning and proposes as an option that the D–structure of the adjunct is not within VP.

which corresponds to (74b), is ungrammatical since the NP adjacent to *?anna* is not coreferent with any pronoun in the embedded IP. This will be the same for all sentences which correspond to the rest of the sentences in (74) and in which such a pronoun does not occur:

(76)
 * ma:ða_i tadinnu ?anna [_{IP} al-raja:l-a [_{IP} ?aŋta: Zayd-un t_i]]
 the-men-acc gave

It seems that it is precisely the presence of a Ld'd NP that makes the difference between (71) and (68a). Similarly, in Iraqi Arabic, the extraction of an embedded subject over a Ld'd NP optionally preceded by the complementizer *?innu* is excluded:

- (77)
- a. *minu_i tdin ?innu [_{IP} al-beyt_i [_{IP} ra:yð t_i yi-ʃtari-i_i b-ha:ð a-as-sifir]]
 who believe that the-house want 3sgm-buy-it in-this the-price
 "**Who_i do you believe that as for the house_k, t_i wants to buy it_k at this price?"
- b. *minu_i tiʃtaqid ?innu [_{IP} mihfaddt-ak_k [_{IP} siraqq-ha_k t_i]]
 who believe that wallet-your stole-it
 "**Who_i do you believe that, as for your wallet_k, t_i stole it_k?"
- c. *minu_i tiʃtakir ?innu [_{IP} hal kita:b_k [_{IP} mazzaq t_i xila:f-a_k]]
 who think that this book tore cover-its
 "**Who_i did you think that as for this book_k, t_i tore its_k cover?"
- d. *minu_i gilit-l-i ?innu [_{IP} al-ʃimara_k [_{IP} ziraʃ t_i xalf-ha_k ʃijar]]
 who said-to-me that the-building planted behind-it trees
 "**Who_i did you tell me that as for the building_k, t_i planted trees behind it_k?"

Once more, the contrast between (77a-b) and (78a-b) is clear:

- (78)
- a. kef_i tdin ?innu [_{IP} al-beyt [_{IP} ra:yð yi-ʃtari-i] t_i]
 how believe that the-house want 3sgm-buy-it
 "How_i do you believe that as for the house, he wants to buy it t_i?"
- b. šinu_i tiʃtaqid ?innu [_{IP} Ali [_{IP} ?ab-u: siraq t_i]]
 what believe that Ali father-his stole
 "What_i do you believe that as for Ali, his father stole t_i?"

The only possible way to question the subject is to effect extraction from the IP adjoined position. In this process a clitic obligatorily surfaces attached to the complementizer and is coindexed with the wh-trace t , which it properly governs:

(79)

a. minu t_{di} ?inna-hu_i [_{IP} t_i [_{IP} raayd y-shtari al-beyt b-ha:ða as-sifir]]
 who believe that-cl want 3sgmbuy the-house in-this the-price
 "Who do you believe that he wants to buy the house at this price ?"

b. minu tiftaqid ?inna-hu_i [_{IP} t_i [_{IP} siraq mihfadt-ak]]
 who believe that-cl stole wallet-your
 "Who do you believe that he stole your wallet ?"

c. minu tiftakir ?inna-hu_i [_{IP} t_i [_{IP} mazzaq xila:f halkitaab]]
 who think that-cl tore cover this book
 "Who do think that t tore the cover of this book ?"

d. minu gilit-l-i ?inna-hu_i [_{IP} t_i [_{IP} ziraʕ shijar Xalfa l-fimara]]
 who said-to-me that-cl planted trees behind the-building
 "Who did you tell me that he planted trees behind the building ?"

The question that I need to answer next is the following: why does the presence of a Ld'd NP block extraction uniquely from subject position but not from complement position? This phenomenon can be explained in terms of the ECP.

The ECP is a principle that deals with non-pronominal empty categories requiring them to be properly governed. Its formulation, given in (56) above and repeated in (80) below, consists of two disjoined conditions: ¹⁵

¹⁵ It should be noted that there are ways to unite the two forms of proper government, at least technically. One way to achieve this unification is suggested in Lasnik and Saito (forthcoming) where lexical government and antecedent government are defined identically. Assuming, following Stowell (1981), that θ -role assignment and Case assignment result in coindexation between the Case assigner and the element that is assigned Case, they state lexical government as in (1) and define proper government as in (2):

(1) Lexical government

α lexically governs β if

a. α binds β , and

b. there is no γ (γ an NP or S') such that α c-commands γ and γ dominates β , unless β is the head of γ

(2) Proper Government

(80)

α properly governs β iff α Θ -governs or antecedent governs β (Chomsky, 1986b: 17)

Antecedent government holds of a link (α, β) of a chain, where α governs β . In particular an object is properly governed by V, head of VP, but a subject or adjunct can only be properly governed in a chain by antecedent government.

The subject/object asymmetry, illustrated by the contrast between (71) and (74), and between (77) and (78), can be accounted for in terms of the ECP, if I can show that the embedded subject in these cases is not properly governed, lexically nor through antecedent government.

4.4.1 The Position of Subject

Subjects in main clauses are governed by INFL, which is not a lexical category, and therefore are never lexically governed. Assuming that verbs properly govern an element only when they also assign a Θ -role to that particular element (hence Θ -govern), a subject position will never be lexically governed either.¹⁶ This is because subjects are assigned a Θ -role by VP, AP, or NP, but never by a lexical element. Returning to the data in (71, 74, 77, and

α properly governs β if

a. α binds β , and

b. there is no γ (γ an NP or S') such that α c-commands γ and γ dominates β , unless β is the head of γ .

By (2), NP and S' are absolute barriers to antecedent government. This definition makes proper government totally independent of the notion of government. The definition of proper government implies that the locality requirement for proper government resembles Subjacency and that it is independent of government.

Another approach to unify the two forms of proper government is pursued in Chomsky (1986b), where he takes the definition of lexical government (3) as basic and attempts to modify the definition of antecedent government:

(3) Lexical government

α lexically governs β if

a. α governs β , and

b. α is a lexical category, X^0 ($X = [+/-N, +/-V]$), and

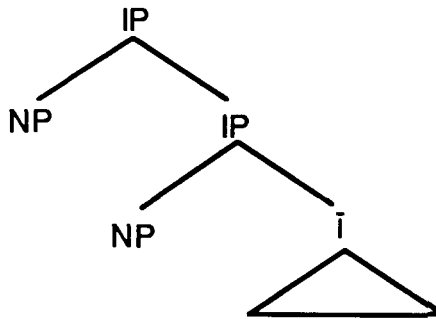
c. α assigns Case or a Θ -role to β .

Chomsky attempts to unify antecedent government and lexical government under a strict locality condition similar to government, and proposes that the same locality is needed for Subjacency.

¹⁶ This idea was originally put forward by Stowell (1981:383).

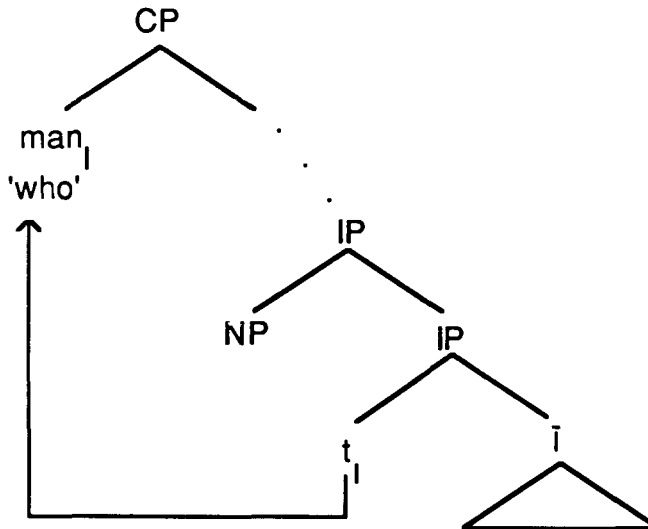
78), I propose that adjunction to IP, as in (81), creates a barrier for antecedent government. The initial NP is the Ld'd NP adjoined to IP:

(81)



Thus, extraction of an element that is dominated by the configuration in (81) will leave a trace that is not antecedent governed from outside this configuration. In this light, consider the sub-structure (82) showing subject extraction in the data (71) and (77):

(82)



t in (82) is the trace of the extracted subject. Given that adjunction to the X^{\max} IP creates a barrier which blocks antecedent government, *t* is not antecedent governed by *man*. *t* is not lexically governed by INFL (*I*) either since *I* is non-

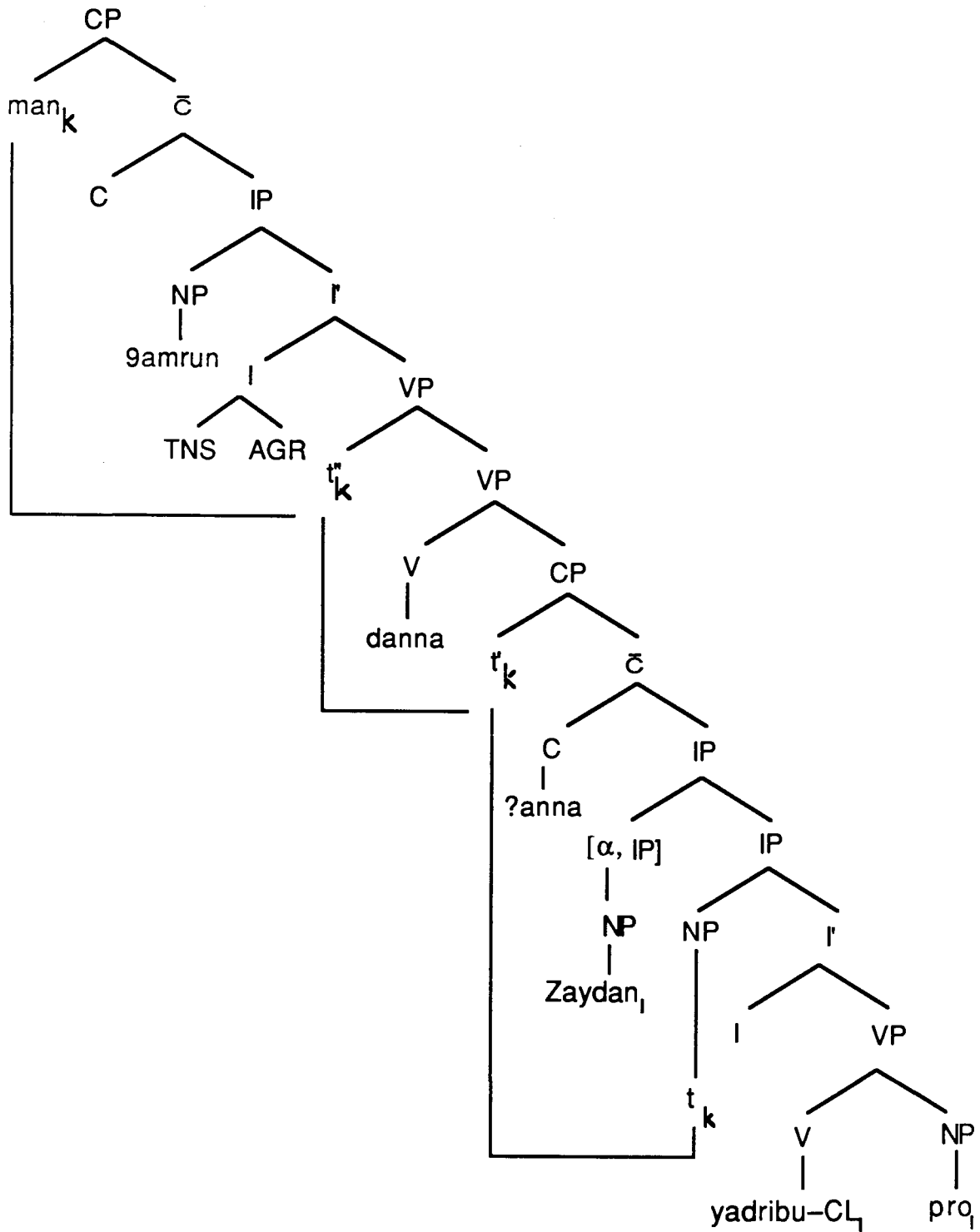
lexical. This is a violation of the ECP.¹⁷ (71a), for example, is now directly excluded. The embedded subject in (71a) repeated in (83):

(83) * man danna ʔamr-un ʔanna Zayd-an ya-dribu-hu t ʔ

is dominated by the barrier $[_{IP} [_{IP}]]$, and its extraction will cross this barrier. Thus, the antecedent fails to properly govern its trace. The structure of (83) roughly corresponds to (84), suppressing V movement to I and possibly subsequently to C :

¹⁷ Given that adjunction to IP blocks antecedent government, the ECP will remain violated even if another trace t' is created in the specifier of the embedded CP since t' will also fail to antecedent govern t .

(84)



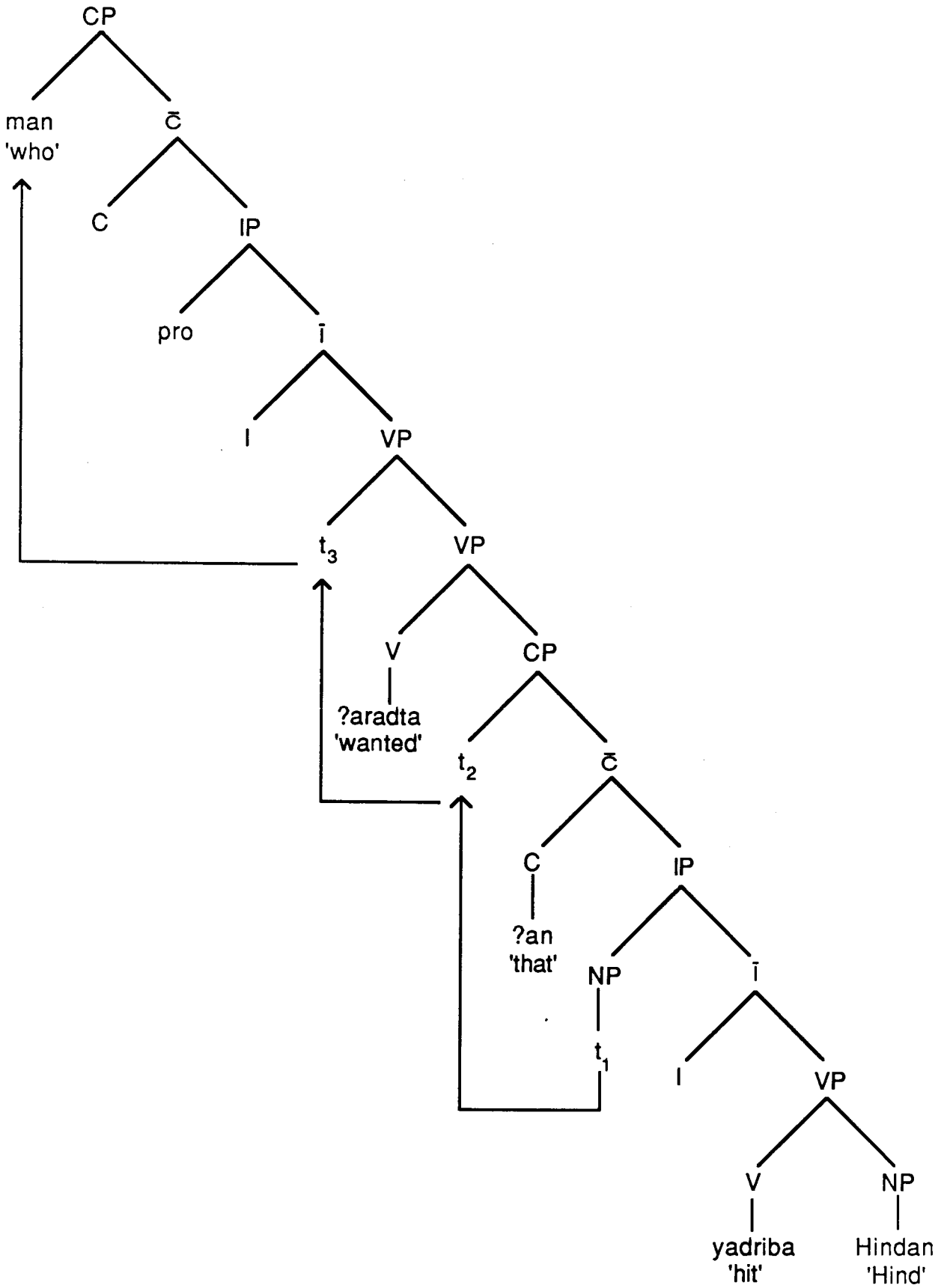
Now the ungrammaticality of (83) follows automatically from the ECP. The empty category t_k in subject position is not properly governed. INFL, being

non-lexical, cannot serve as a proper governor for t_k . The intermediate trace t_k' in the specifier position of CP is separated from t_k by the barrier $[_{IP} [_{IP}]]$. Hence antecedent government fails in this case. Government of t_k by the matrix verb also fails for the same reason, namely the intervention of the barrier $[_{IP} [_{IP}]]$. t_k' on the other hand, is antecedent governed by t_k'' , and, similarly, the latter trace is also antecedent governed by the *wh*-element *man* 'who' in the matrix specifier of CP since no barrier intervenes. Thus, t_k must be the offending trace barring (83).

Turn now to the application of the ECP to sentences like (68a), repeated in (85) in which it is possible to extract an embedded subject, in contrast with (83) which prohibits it:

(85)
 man_i ?arad-ta ?an yadriba t_i Hind-an ?
 who wanted-2sg that hit-3sgm Hind-acc
 "Who_i did you want that t_i would hit Hind ?"

(85) is grammatical in spite of the fact that the embedded subject has been moved with t as the trace of the moved subject NP. The question is why is (85) grammatical and (83) not ? I accounted for the ungrammaticality of (83) by suggesting that the adjunction to IP structure is a barrier for proper government. Movement of an embedded subject across this barrier leaves a trace that is not properly governed, violating the ECP. If such a movement does not cross any barrier, no ECP violation would be incurred and the sentence would be predicted to be grammatical. This is precisely the case in (85). Consider its S-structure (86) below with head movement suppressed:



The initial trace clearly satisfies the ECP by virtue of Θ -government by the embedded verb, and it is also antecedent governed by t_2 in the most deeply embedded VP adjoined position. t_2 must be antecedent governed if intermediate traces are subject to the ECP. But, this is clearly impossible if t_2 is created in the derivation of the sentence because the barrier $[_{IP} [_{IP}]]$ intervenes, blocking antecedent government of t_2 by t_3 . Thus, if intermediate traces are subject to the ECP, (87a) should be ruled out by this principle, an incorrect result since the sentence is grammatical. This derivation must be prevented.¹⁸

Note that what makes the S-structure representation (88) ECP violation is the intermediate trace t_2 , if it is present. An intermediate trace is required in order to satisfy the ECP by antecedent governing the nearest downstairs trace which it c-commands. t_4 for instance, is required to antecedent govern (hence properly govern) t_3 . If t_4 is not present, then t_3 will be the offending trace in violation of the ECP. If t_2 , however, is not present, no ECP violation is incurred since the initial trace t is Θ -governed (hence properly) governed by V, and the sentence in (87a) will be predicted to be grammatical, as desired. A viable solution along this line of reasoning is embedded in the analysis of Lasnik and Saito (forthcoming). The relevant features of their analysis are summarized below.

4.5 Lasnik and Saito's Analysis

I assume the mechanism proposed by Lasnik and Saito (1984) for determining satisfaction of the ECP: a assigns the feature $[+\gamma]$ to b (b is a trace)

¹⁸ Note that t_3 is in a configuration of proper government, being antecedent governed by t_4 , which is, in turn, antecedent governed by the wh-phrase *man* 'who' in the specifier position of CP. t_2 . However, it is not properly governed, since it is separated from its nearest antecedent t_3 by a barrier. The sentence in (87b) receives precisely the same analysis in relevant respects.

if it properly governs *b*, and *b* receives [- γ] if it is not properly governed. Lasnik and Saito distinguish between arguments and non-arguments and assume the following:

(89)

- i. γ -assignment applies at S-structure and LF.
- ii. At S-structure, γ -assignment applies only to arguments.
- iii. At LF, γ -assignment applies only to adjuncts.

To satisfy the ECP a non-pronominal empty category must be marked [+ γ] at LF.

Lasnik and Saito offer an interpretation of the ECP in terms of the assignment of a feature [+ γ] under certain circumstances and the assignment of [- γ] otherwise. A trace *t* is [+ γ] when lexically or antecedent governed, but is [- γ] otherwise. Representations containing traces that are assigned [- γ], that is, for which proper government did not obtain, are barred. They further assume that only argument traces receive γ -features at S-structure. γ -marking will apply to the S-structure (90) to give (91):

(90)

Who [_{IP} do you believe [_{NP} the claim [_{CP} that [_{IP} John said [_{CP} *t*₂ [_{IP} *t*₁ saw Mary]]]]]]

(91)

Who [_{IP} do you believe [_{NP} the claim [_{CP} that [_{IP} John said [_{CP} *t*₂ [_{IP} *t*₁ saw Mary]]]]]] [+ γ]

The subject trace *t*₁, being an argument trace, is assigned [+ γ] as it is antecedent governed by *t*₂. If *t*₂ remains at LF, then it is assigned [- γ] at this level, and consequently, violates the ECP. This predicts that the sentence is ungrammatical, which is an incorrect result. Notice that if another trace is created in the specifier position of the second higher CP, then *t*₂ will not receive [+ γ] features since it is an intermediate trace. Since the subject trace received its [+ γ] features at S-structure, there is no reason for the presence of *t*₂

at LF. Hence, it must delete as it is no longer required by independent principles. After deletion of t_2 , we obtain the representation (92) which conforms to the ECP:

(92)
 Who_[IP] do you believe [_{NP} the claim [_{CP} that [_{IP} John said [_{CP} [_{IP} t_1 saw Mary]]]]]]]
[+γ]

Following Lasnik and Saito (forthcoming), I assume that move- α need not produce a trace unless that trace is required by independent principles --- e.g., the ECP and the Projection Principle.

Now, let us return from our slight digression to the examples that most interest us here, the examples in (87), illustrating object extraction across two instances of IP nodes. The representative example (87a) is repeated as (93) with its structure in (94):

(93) man_i tadinnu ?anna [_{IP} Hind-an_k [_{IP} tazawwaj-at_k t_i]]
 who believe that Hind-acc married-3sgf
 "Who do you think that Hind married?"

(94)

$$\begin{array}{ccccccc}
 \hline
 | & | & | & | & | & | & | \\
 \hline
 [_{CP} man [_{C'} [_{IP} [_{I'} [_{VP} t_4 & [_{VP} [_{CP} t_3 & [_{C'} ?anna [_{IP} [_{IP} & [_{VP} t_2 & [_{VP} t \\
 \hline
]]]]]]]]]]
 \end{array}$$

Given this assumption, move- α need not leave the intermediate trace t_2 in the bottom-most VP adjoined position in structure (94) as it is not required by any principle. Indeed, the initial trace t does not need the presence of t_2 for antecedent government since it satisfies the ECP by virtue of being properly governed by V. In fact, its presence serves nothing other than yielding a representation not conforming to the ECP. Here, I adopt Stowell's (1981) proposal that intermediate traces can freely delete. Under this proposal, while deletion itself is unconstrained, the result of such deletion is ultimately

constrained by general principles, among them, the ECP. This means that if an intermediate trace is required for proper government of a lower trace, the intermediate trace must of course be present or an ECP violation will ensue. We will see an example of this case in (99). Given this assumption — that intermediate traces can freely delete — (93) is no longer an ECP violation. Its LF representation is shown in (95):

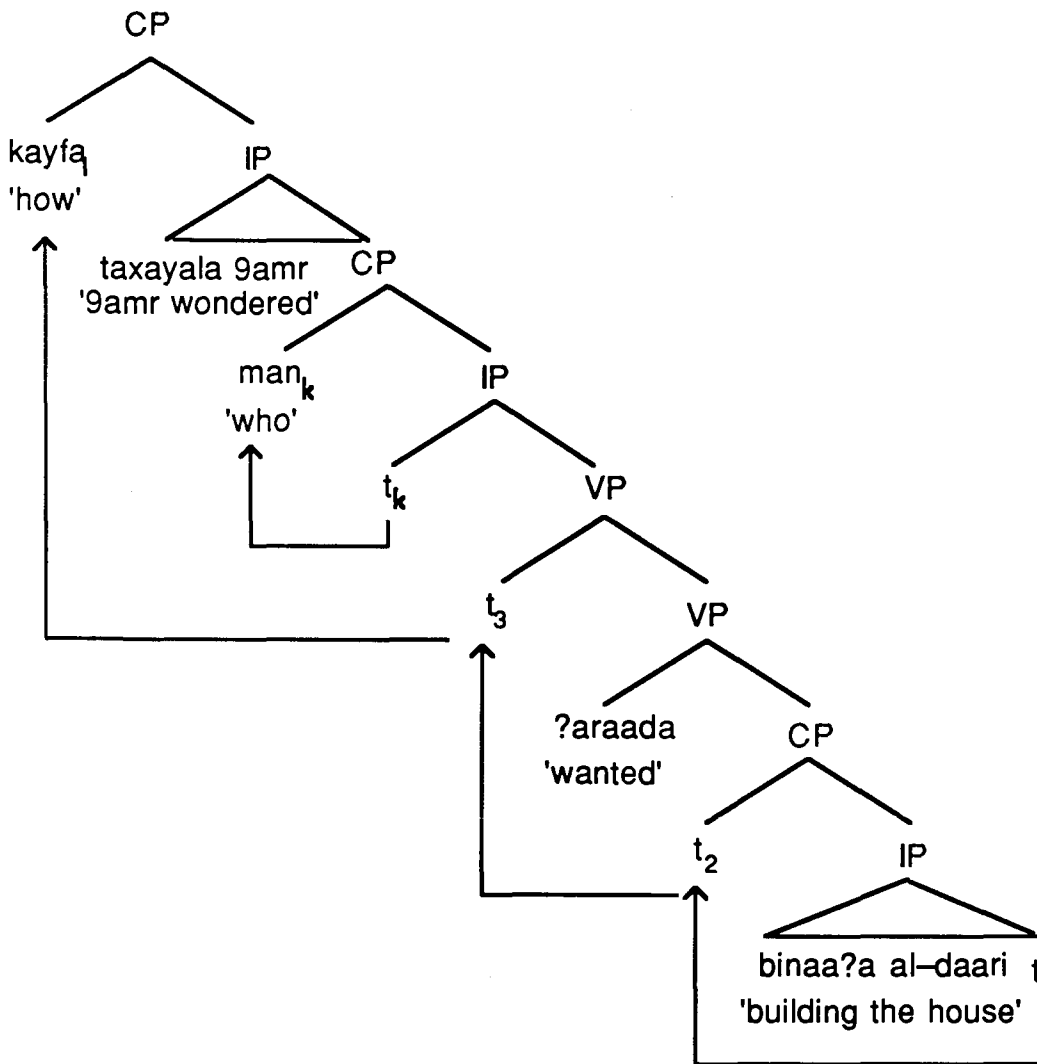
(95)

$[_{CP} \text{man } [_{C'} [_{IP} [_{I'} [_{VP} t_3 [_{VP} [_{CP} t_2 [_{C'} ?\text{anna} [_{IP} [_{IP} [_{VP} [_{VP} t \]]]]]]]]]]]]]]$

There is no trace in the lowest VP adjoined position in (95), and the ECP is satisfied. Now consider the S-structure (96) illustrating adjunct movement:

(96)

*



*How did 9amr wonder [_{CP} who [_{IP} t' [_{VP} t₃ [_{VP} wanted [_{CP} t₂ [_{IP} to build the house t
]]]]

Recall that under Lasnik and Saito's analysis, which I have assumed, for adjuncts, γ -assignment takes place at LF; whereas, for arguments it takes place at S-structure. Thus, while argument traces can freely delete at LF after being subjected to the ECP (receive γ -marking) at S-structure, all intermediate adjunct traces must be present at LF to properly govern the traces of the adjunct. In (96), the initial trace t is an adjunct (not an argument) trace. Hence,

it is not assigned a γ -feature at S-structure, but is assigned a γ -feature by the intermediate trace t_2 at LF. If t_2 did not exist at this level, the initial trace would be $[-\gamma]$. t_2 , in turn, would be marked $[\gamma]$, since it has an antecedent governor t_3 . But now, t_3 is not antecedent governed by *kayfa* 'how', CP being a barrier by inheritance from IP; and hence must be assigned $[-\gamma]$. Thus, (96) violates the ECP at LF, and the sentence is ruled out.

4.6 Movement of Adjuncts

In the ECP analysis of the complement/non-complement asymmetry discussed above, I assumed that traces in object positions are Θ -governed while subject traces and adjunct traces are not and, hence must be antecedent governed. This implies that adjunct traces, like object and subject traces, fall under the ECP. However, as noted by Huang (1982), adjuncts do not display that-trace effects. For example, (98a) and (98b) do not contrast:

- (97) a. Who [do you think [t' [t left early]]
 b. *Who [do you think [t' [that [t left early]]]

- (98) a. Why [do you think [t' [he left early t]]
 b. Why [do you think [t' [that [he left early t]]]

Similarly in Arabic, subject extraction in (99) contrasts (99a is grammatical, but 99b is not), while adjunct extraction in (100) does not (both sentences in (100) are grammatical):

- (99)
 a. ma:ʃa_i trudu [_{CP} t'_i [?an [_{IP} yahdutθa t_i I-ʃamr-in]]]
 what want that happen to-ʃamr
 "What do you want that would happen to ʃamr?"
 b. *ma:ʃa_i tadunnu [_{CP} t'_i [?anna [_{IP} ʃamr-an [_{IP} hadaθa t_i la-hu]]]]
 what believe that ʃamr-acc happened to-him
 "**What_i do you believe that as for ʃamr happened to him t_i ?"

(100)

a.
 lima:ða_i ?arad-ta [_{CP} t_i [?an [_{IP} yahduθa l-ʕamr-in ma: hadaθ t_i]]]
 why wanted-2sg that happen to-ʕamr-gen what happened
 "Why did you want that whatever happened to ʕamr to happen?"

b.
 lima:ða_i tadunnu [_{CP} t_i [?anna [_{IP} ʕamr-an [_{IP} hadaθa la-hu ma: hadaθ t_i]]]]
 why believe that ʕamr-acc happened to-him what happened
 "Why_i do you believe that as for ʕamr, whatever happened to him happened t_i
 ?"

Since movement of subjects over the barrier [_{IP} [_{IP}]] is prohibited (99b), whereas, that of adjuncts is permitted, one might assume that, unlike subject traces, adjunct traces lack ECP effects and thus do not fall under the ECP. This is, however, not the correct conclusion, as indicated by the contrast in (101) which is attributed to the ECP:

(101)

a. *lima:tha la taʕrifu [_{CP} fimaa?iða [_{IP} fa:za ʕamr-un al-siba:q-a t]]
 why not know whether won ʕamr-nom the-race-acc
 "Why don't you know whether ʕamr won the race?"

b. man_i la taʕrifu [_{CP} fima:?iða [_{IP} daraba t_i ʕamr-un]]
 who not know whether hit ʕamr-nom
 "**Whom don't you know whether ʕamr hit?"

In (101a), extraction of the adjunct is blocked because antecedent government of *t* is blocked by the wh-island, violating the ECP. Extraction of object in (101b) is possible, because *t* is lexically governed by V, conforming to the ECP. Thus, I must assume that both subject traces and adjunct traces fall under the ECP.

That traces of adjuncts are not exempt from the ECP is further confirmed by the impossibility of adjunct extraction across two instances of IP nodes, which I have taken to be a barrier. This is demonstrated by the examples in (102):

(102)

a.* [_{CP} kayfa [_{IP} Zayd-un [_{IP} darabta-hu t]]]
 how Zayd-nom hit- obcl
 "How as for Zayd, did you hit him"

b.* [_{CP} mata: [_{IP} Zayd-un [_{IP} darabta-hu t]]]
 when Zayd-nom hit- obcl
 "When as for Zayd, did you hit him"

c.* [_{CP} ?ayna [_{IP} Zayd-un [_{IP} darabta-hu t]]]
 where Zayd-nom hit- obcl
 "Where as for Zayd, did you hit him"

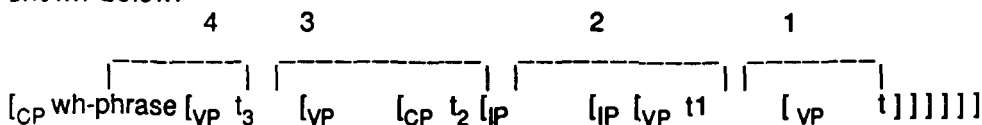
The ungrammaticality of the sentences in (102) demonstrate that movement of adjuncts over a Ld'd NP is generally excluded.

I argued that adjunct traces are not exempt from the ECP requirements. With this in mind, let us consider examples (74a), (74d), and (78a), illustrating adjunct trace. These sentences are grammatical, but they would be otherwise, if the D-structure of the adjunct were within VP or hanging from the lower IP node, such that the trace at S-structure is exclusively dominated by a barrier as follows:

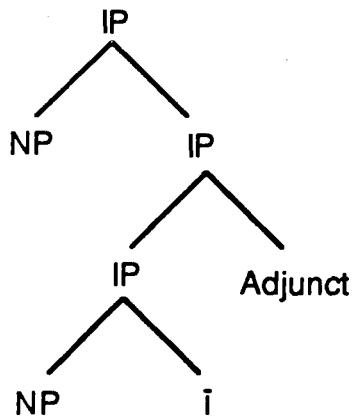
[_{IP} [_{IP} t]]

As the structure of (74a), (74d) and (78a) shows, I crucially assumed the trace of the adjunct to be adjoined to the IP node and not to the VP node.¹⁹ That is, I assume structure (103) and not (104) (irrelevant details omitted):

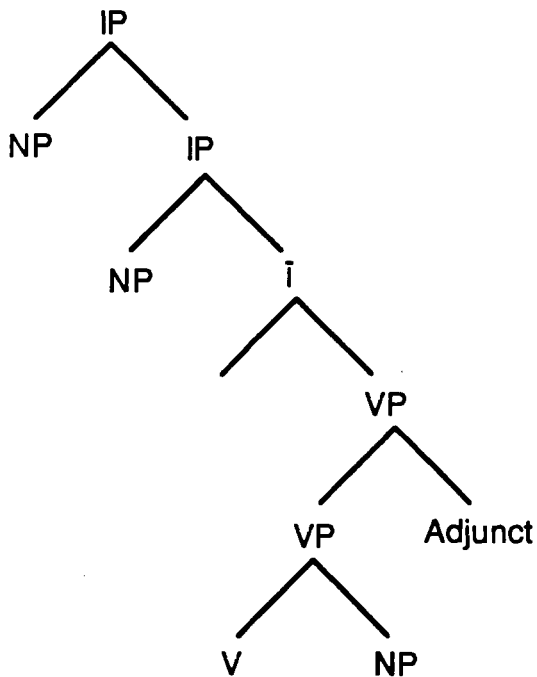
¹⁹ I further assume that the adjunct in such cases is not generated under the lowest VP at D-structure since movement of adjunct to the matrix specifier position through adjunction to VP would still leave a trace in the lowest VP adjoined position which fails to be antecedent governed by the higher trace. This is because the two would be separated by two IP nodes as shown below:



(103)



(104)



Movement of the adjunct in (103) from its D-structure position does not cross the category IP to which it is adjoined (though it does cross one segment of IP)

Since the IP to which the adjunct is adjoined does not exclude the site of the adjunct, it does not count as a barrier for the purpose of Subjacency. This is so since categories are defined in terms of segments, and domination by a category is defined as domination by every segment of this category. The relevant clause from the definition of dominance is as follows:

(105) α is dominated by β if it is dominated by every segment of β .

Extraction of the adjunct in (103) will leave a trace that is antecedent governed since extraction will cross one IP node, which, not being a barrier, allows the adjunct to properly govern its trace, conforming to the ECP, the desired result. On the other hand, adjunct extraction in (104) will cross two IP nodes, which I have taken to be a barrier blocking antecedent government. Thus, if (104) is the proper sub-structure of the sentences in (74c), (74d) and (78a), adjunct extraction would induce ECP violation, and the sentences would be predicted to be ungrammatical. Surely, this is incorrect since the sentences are grammatical. The structure (103), however, yields the correct result with respect to the ECP; I thus have opted to generate the adjunct in these cases in a position adjoined to the lower IP node.²⁰ The structure in (104) corresponds to the sentences in (102) and gives the desired result that adjunct movement is blocked by the ECP (cf. footnotes 19 and 20).

4.7 Summary

To summarize, I presented the general properties of Wh-questions in Arabic and discussed them with respect to the ECP and Subjacency. Wh-questions are derived by movement only, except for the construction with *?ayy*, meaning "which", which is base-generated when assigned nominative Case, but derived by movement when assigned accusative Case. I argued that the

²⁰ For similar reasons, Chomsky (1986b) assumes that the D-structure position of the adjunct *how* in the sentences in (1) is not within VP but outside it, dominated directly by the IP:

- (1)
a. How did [IP you [VP ix the car] t]
b. How does John think [CP t [IP you [VP fixed the car] t]]

In (1a), the adjunct moves to the specifier of CP. In (1b), the adjunct moves to the specifier of the lower CP, then to the matrix specifier of CP through the matrix VP. In each case, there is only one relevant BC that includes the trace but not its antecedent --- namely, IP, but this is not a barrier. Note that it is crucial that the D-structure position of *how* is not within VP; otherwise, movement would cross VP, which, not being L-marked, is a barrier to government and hence to proper government.

clitic in Wh–constructions does not appear to license a base-generated resumptive pronoun, but to properly govern and identify a trace. This correctly predicts the impossibility of extraction out of syntactic islands. The array of Subjacency facts appeared rather complicated at first glance, it was shown, however, that they are quite systematic when considered within the context of the wider range of parameters of Arabic grammar. This will be further supported by facts of topicalization structures to be discussed in the next sections.

I proposed an account in terms of the ECP of the impossibility of subject extraction from within an IP adjunction configuration, as opposed to the possibility of subject extraction from contexts lacking such an adjunction configuration. In this regard, I suggested that adjunction to IP results in the formation of a barrier blocking antecedent–government of the trace of the extracted subject. Extraction of objects in constructions containing an IP adjunction configuration is correctly allowed, as an object trace will be properly governed by the verb. I allowed generation of adjuncts outside the domain of the barrier arising from adjunction to IP, and thus an adjunct trace can be properly governed through antecedent–government.

4.8 Topicalization

Now, I turn to topicalization. In this section, I shall distinguish between LD constructions examined in chapter 3 and constructions which involve extraction, such as topicalization. Although there is never an overt wh–phrase in Topicalization structures, they display all the typical properties of wh–movement and are particularly distinguishable from left–dislocation structures which do not have the same properties.

The most obvious surface difference between the two constructions is that, while the Ld'd NP always has nominative Case regardless of the argument position to which it is related, the topicalized NP has the Case of its extraction site. Secondly, a Ld'd NP must be specific, whereas, a topicalized NP may be non-specific. Thirdly, while LD needs not obey Subjacency, Topicalization does. The first two differences are illustrated in (105-106):

(105)

a. Hasan-un_i tu-hib-u-hu_i al-bint-u
 Hasan-nom 3sgf-like-ind-ob cl the-girl-nom
 "Hasan, the girl likes him"

b. Hasan-an_i tu-hib-u al-bint-u t_i
 Hasan-acc 3sgf-like-ind the-girl-nom
 "Hasan, the girl likes"

(106)

a. ?al-faras-u rakiba-ha Hasan-un
 the-horse-nom rode-ob cl Hasan-nom
 "As for the horse, Hasan rode it"

b. faras-an_i rakib Hasan-un t_i
 horse-acc rode Hasan-nom
 "a horse, Hasan rode"

Another distinguishing factor is that the use of clitics to license resumptive pronouns is obligatory in left-dislocation but optional in topicalization. It should be noted, however, that since Arabic is a pro-drop language (null argument language), resumptive pronouns in subject and object positions are null, just like non-resumptive pronouns are null.

Finally, while the left-dislocated NP must be definite/specific, there is no such restriction on the topicalized NP with a non-clitic version.

The above sentences illustrate some of the properties which differentiate the two constructions. There is a difference in Case: the NP *Hasan* in (105a) and (106a) is marked nominative, while the same NP in (105b) and (106b) is marked accusative. A resumptive pronoun is present in (105a) and (106a), but

absent in (105b) and (106b). A further difference is that the NP in LD can only be specific (106a), whereas, in topicalization, it can also be non-specific (106b).

I accounted for the difference in specificity in terms of the presence versus the absence of a clitic, in line with the rule of predication developed in chapter 3. A clitic is marked for the features person, number, gender and specificity. Since the clitic is coindexed with its antecedent, its values must agree with that of its antecedent and hence the antecedent must be specific. When there is no clitic, the antecedent can be non-specific.

In the following section, I argue for a movement analysis of topicalization. As I indicated in section (4.3), topicalization in Arabic can be effected in two ways -- with clitics and without clitics. I shall subsequently argue that both are the product of $\text{move-}\alpha$. In contrast, LD is base-generated and hence may violate Subjacency (cf. chapter (3) for argumentation).

The difference in Case between LD and Topicalization will be the subject matter of section (4.14) below. This difference will be accounted for by appealing to the notion of Case inheritance, which operates only in constructions involving extraction (Wh-Movement and Topicalization), but not in constructions which involve no movement (LD).

4.8.1 Topicalization is Movement

Notice that the process of Topicalization illustrated in (105b) and (106b) is a syntactic process operating at the level of S-structure and is not a purely stylistic one whose input is the configuration obtained at S-structure. To this effect, consider (107):

(107)

- a. * tu-hib-u ?um-u-ha_i al-bint-a_i
3sgf-love-ind mother-nom-gencl the-daughter-acc
" Her mother loves the daughter"
- b. al-bint-a_i tu-hibu ?um-u-ha_i
"The daughter, her mother loves"

In (107a), the coreferential reading between the genitive clitic on the subject and the object NP renders the sentence ungrammatical. In contrast, this coreferential reading is grammatical in (107b). This supports a movement analysis of topicalization because the binding theory requires a pronominal to be free in its local domain, which is the IP node in (107). (107a) is barred since the pronominal is bound in IP. Thus, it follows from the binding theory that the NP *al-bint-a* "the daughter" must be outside IP in an \bar{A} -position. This position is adjoined to IP (cf. 4.8.3 for argumentation).

This movement appears to be governed by the CNPC, as illustrated by the ill-formedness of (108b):

(108)

- a. ja:had-tu [_{NP}ar-rajul-a [_{CP}allaði yu-hibu al-?ami:rat-a]]
saw-1sg the-man-acc who 3sgm-love the-princess-acc
" I saw the man who loves the princess"
- b. ??al-?amirat-a_i ja:had-tu [_{NP}ar-rajula [_{CP}allaði yu-hib-u t_i]]
"The princess_i, I saw the man who likes t_i"

In (108), the relative clause CP is a BC and a barrier, and the NP, though not a BC because it is Θ -governed by the verb *ja:hada*, inherits barrierhood from CP. Thus, two barriers are crossed, and a Subjacency violation results²¹. The intermediate status of the sentence however suggests that Subjacency effects are weaker and more variable when compared with the more severe ECP

²¹ Recall that I analyze Topicalization as movement that proceeds through adjunction to IP. (108) and (109) do not include the IP adjunction sites. I have eliminated these positions purely for simplicity; no theoretical claim is implicit in this omission.

violations. Moreover, Subjacency effects are S-structure effects which presumably do not arise in LF.

Wh-Island Condition violations produce similar effects in the following case:

(109)

a. $t_{as}a:ʔal-tu$ [_{CP} man_i [_{IP} $yazu:ru$ t_i Hind-an kulla masa:ʔin]]
 askeded-1sgm who visit Hind-acc every evening
 "I wondered who visits Hind every evening"

b. ?? Hind-an_i [_{IP} $t_{as}a:ʔal-tu$ [_{CP} man [_{IP} $yazu:ru$ t_i kulla masa:ʔin]]]

Arabic also allows a clitic to mark the topicalized site, as in (110) which forms a minimal pair with (105b), and which is also derived by movement:

(110) Hasan-an_i tu-hib-u-hu_i t_i al-bint-u
 Hasan-acc 3sgf-like-ind-obcl the-girl-nom
 "Hasan_i, the girl likes t_i "

The occurrence of a clitic, however, does not save the structure in cases of extraction from inside an island, as demonstrated in (111), which forms a minimal pair with (108b):

(111) ?? al-ʔamirat-a_i ʃa:had-tu ar-rajula allaʃi yu-hib-u-ha_i
 obcl
 "The princess_i, I saw the man who likes t_i "

This situation is reminiscent of the occurrence of a clitic in Wh-constructions discussed in (4.2.5.1) where the clitic did not change the grammaticality of the sentence in contexts violating the CNPC. I analyzed that construction as having no resumptive pronouns. The clitic there licensed a Wh-trace rather than a resumptive pronoun. I extend this analysis to the topicalization structures with clitics in (110–111). In other words, the topicalized NP is coindexed with a trace, sensitive to Subjacency, and not with a base-generated resumptive pronoun. I take these properties and those discussed in

the preceding sections to indicate that both Wh-constructions and topicalization in their two versions, with clitics and no-clitics, are instances of the gap-producing rule move- α .

4.8.2 Proper Government By Clitic

In what follows I examine the possibility of topicalization from positions governed by N and P.

Recall the assumption that N and P are not proper governors; hence, the following sentences are excluded by the ECP:

(112)

- a. * Hasan- an_i ?a-kram-tu ?ax-a t_i
 Hasan-acc 1sg-honored-1sgm brother-acc
 "Hasan, I honored brother t"
- b. * Hasan- an_i sallam-tu ʔal t_i
 Hasan-acc greet-1sgm to
 "Hasan, I gave greetings to"

(112a) and (112b) illustrate extraction of an NP from a position governed by the lexical heads N and P, respectively. The same sentences, however, will be grammatical if a clitic appears attached to the lexical heads:

(113)

- a. Hasan- an_i ?a-kram-tu ?ax-a- hu_i t_i
 Hassan-acc honored-1sgm brother-acc-obcl
 "Hasan, I honored his brother"
- b. Hasan- an_i sallam-tu ʔalay- hi_i t_i
 Hasan-acc greet-1sgm to-obcl
 "Hasan, I gave greetings to"

I argued previously that topicalization with clitics, where the topicalized NP is moved from a complement position of V, involves movement as this process obeys Subjacency. In the same way, the cases in (114), which involve clitics, obey Subjacency:

(114)

a. *Hasan-an ?a-kram-tu ar-rajul-a allađi qabal ?aX-a-hu_i t_i
Hasan-acc reward-1sgm the-man-acc who saw brother-acc-his
"Hasan, I rewarded the man who met his brother"

b. *Hasan-an_i ?a-kram-tu ar-rajul-a allađi sallam
Hasan-acc rewarded-1sgm the-man-acc who greet-1sgm
ʔalay-hi_i t_i
to-obcl
"Hasan, I rewarded the man who gave greetings to"

The ungrammaticality of the sentences in (114) suggests that sentences such as (113) involve movement.

To summarize, I argued for a movement analysis of topicalization with its two strategies, clitics and no-clitics. When extraction takes place from the complement position of V, the trace will be properly governed by V. As N and P are not proper governors, a clitic must appear attached to them to properly govern the trace in cases of extraction from complement position of N and P.

4.8.3 Topicalization is Adjunction to IP

Having argued for a movement analysis of Topicalization, the question that arises is: where does the topicalized NP move to? Is it adjoined to IP, to CP? or is it moving to COMP?, and what is the nature of that position? Is it an A-position or an \bar{A} -position? I shall argue that it is adjoined to IP. In this section, I argue for the last hypothesis – i.e., adjunction to IP.

The approach that I assume to determine the position that the extracted NP moves to at S-structure is that movement is never determined by specific rules, but rather results from the interaction of general principles and various sub-theories of UG.

Notice, in the first place, that the S-structure position of the extracted NP can never be a Θ -position. This is excluded by the Projection Principle and the Θ -Criterion. Following Chomsky (1986), and in line with the Structure

Preserving Constraint as in Emonds (1985), only X^0 can move to the head position. One major case of such movement is that of V to INFL, forming the inflected verb V_i , which then possibly moves to COMP, head of CP. A maximal projection, such as a topicalized NP, cannot be in COMP which is a head position. Since a topicalized NP is a maximal projection, and since COMP is the head of CP, a topicalized NP cannot be in COMP.

I further assume that the specifier of CP is reserved as a landing site for Wh-operators (Chomsky, 1986b). There is empirical support for this assumption, as we will see in chapter (5). The support comes from the fact that along with a wh-phrase, an NP can appear adjoined to CP receiving Case from a higher verb. It is possible to state this as a condition on LF interpretation — that is, Wh-phrases and other elements of this type are not adjoined to IP but are in the pre-IP position, specifically in the specifier of CP [SPEC, CP] with scope over IP (cf. Chomsky, 1986 for further discussion of this topic). Since the topicalized NP is a non-Wh-operator, it then follows that it cannot be moved to [SPEC, CP].

It is of interest that when a topicalized NP appears in embedded contexts, it may occur with an overt relative pronoun or a complementizer to its left only. The topicalized NP's *?aXahu* "his-brother-acc." in (115a) below, *Hasanan* "Hasan-acc." in (115b) and *Zaydan* "Zayd-acc" in (115c) appear after *allađi*, *man* and *mima* respectively (the complementizer appears in Italics):

(115)

- a. ja?a ar-rajul-u; *allađi* ?aX-a-hu; ?a-kram-ta t;
 came-3sgm the-man-nom who brother-acc-his honored-2sgm
 "The man whose brother you honored came"
- b. qabal-tu *man* Hasan-an; qabala t;
 met-1sg who Hasan-acc met
 "I met whoever met Hasan"

- c. dami?-tu fasharib-tu Xamr-an ?aktara *mima* **Zayd-an_i**
 thirsty-1sg drank-1sg wine-acc more what Zayd-acc
- ?a-9tay-tu t_i ma?-an
 1sg-gave-1sg water-acc
 "I became thirsty and drank wine more than what I gave Zayd
 water"

The sentences will be ungrammatical if the topicalized NPs are placed in a position preceding the complementizers (again the complementizer appears in *Italics*) :

(116)

- a. *ja?a ar-rajul-u_i ?aX-a-hu_i *allaði* ?a-kram-ta t_i
 b. *qabal-tu Hasan-an_i *man* qabala t_i
 c. *dami?-tu fa-sharib-tu Xamr-an ?aktara **Zayd-an_i** *mima*

Topicalization in English also behaves in a similar way in that the topicalized NP in embedded contexts shows up after the complementizer only:²²

(117)

- a. John says that Mary, Paul doesn't love.
 b. *John says Mary, that Paul doesn't love.

I propose, therefore, that adjunction of a topicalized NP to CP in the cases above are generally ruled out by the following restriction adapted from Chomsky (1986a: 6); cf. also 19, chapter 3:

(118)

adjunction is possible only to a maximal projection NP, VP, IP, CP that are not L-marked, where L-marking is defined as follows: (cf. chapter 1)

(119) L-marking:

α L-marks β only if α is a lexical category that directly Θ -marks β , and α directly Θ -marks β if β is the complement of α in the sense of X-bar theory.²³

²² Many speakers find the same sentence without an overt complementizer to be ill-formed; compare (a) and (1):

(1) *John says Mary, Paul does not love.

²³ This definition of L-marking is based on the discussion in Chomsky (1986a :13 ff.).

Consider also the following sentence where the topicalized NP can only appear in a position following the complementizer *?amma* at S-structure:

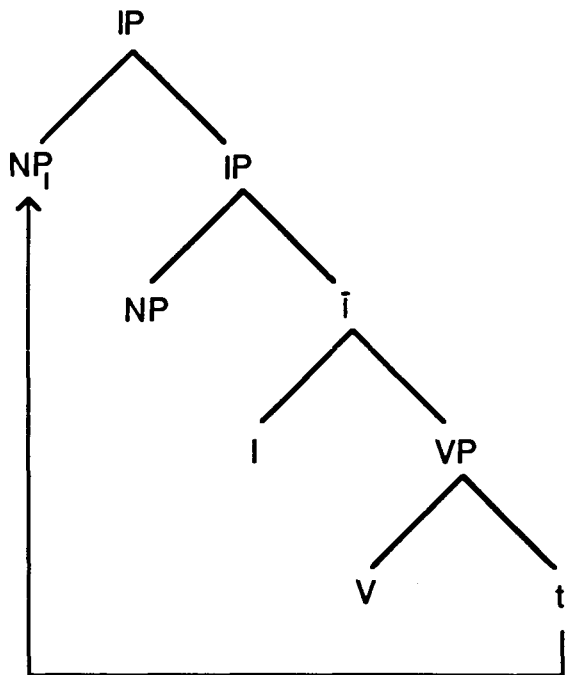
(120)

a. *?amma* al-yatim-a_i fala ta-qhar t_i
 pertaining the-orphan-acc don't 2sgm-oppress
 "Pertaining to the orphan, don't oppress"

b. *al-yatim-a *?amma* fala ta-qhar t²⁴

(120b) is ungrammatical since the topicalized NP *al-yatim-a* follows the complementizer, which leads me to conclude that topicalization arises from adjunction of elements to IP as in (121):

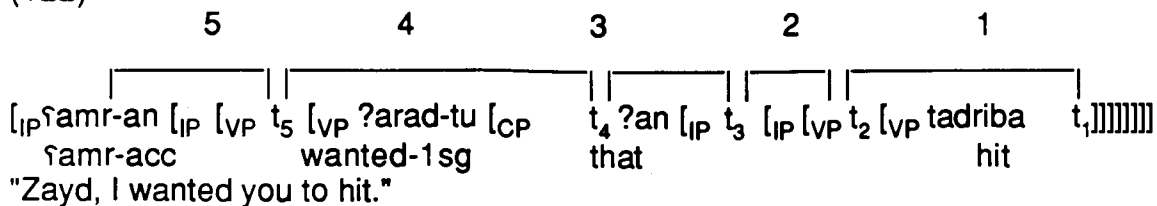
(121)



The movement can be iterated (from adjunction site to adjunction site), and each movement is governed by Subjacency. (122) illustrates iterative movement:

²⁴ This derivation cannot be ruled out by the restriction on adjunction in (118). I have nothing to say about this sentence, but simply note that this construction involving *?amma* 'as for' might have some properties different from other topicalization constructions. It does, however, arise by movement since the moved NP binds a trace, and it has inherited accusative Case, as all topicalized NPs do.

(122)

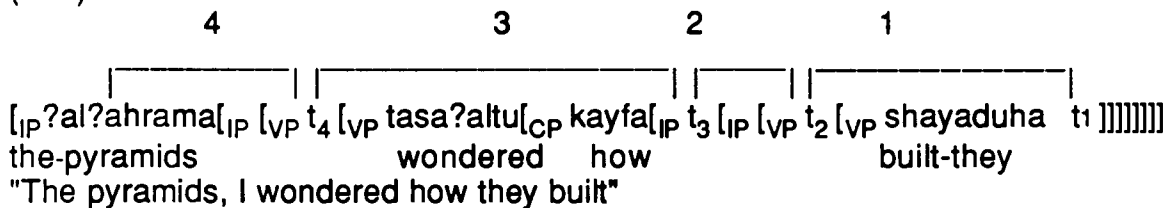


IP is no longer a BC, since it does not exclude the landing site of link 2, just like VP does not exclude the landing site of link 1. Since IP is not a BC in this case, CP cannot inherit barrierhood from IP, and CP, being L-marked by the matrix verb, is not an inherent barrier. Thus, each link in (122) conforms to 0-Subjacency, and the sentence is correctly predicted as fully grammatical.

If Topicalization is to be analyzed as adjunction to IP, then the following derivation will be permitted with every link satisfying 0-Subjacency, exactly like

(123):

(123)



This is true since the sentence is fully grammatical, although it is a Wh-Island Constraint violation.

In the following subsection, I examine the interaction of topicalization with Wh-movement more precisely, movement across a topicalized NP. It will be seen that this movement results in ungrammaticality, providing further support that extraction over two instances of IP is excluded.

4.8.4 Wh movement across a Topic

Recall in section (4.5), it was seen that adjunction to IP results in a barrier blocking subject and adjunct extraction. If we accept the IP adjunction analysis for Topicalization, we would expect it to block wh-movement. This

prediction is verified in the grammar as it is not possible to have a topicalized NP (with or without a clitic) adjoined to IP and a *wh*-phrase moved across the IP adjunction structure to the specifier position of CP simultaneously in a single clause. This is illustrated by the ungrammaticality of the sentences in (124) where the NP *ʃamr* is topicalized:

- (124)
- a. * [CP man [IP ʃamr-an [IP daraba-(hu) t t]]]
 who ʃamr-acc hit-(him)
- b. * [CP man [IP ʃamr-an [IP ja:ʔ-at t maʃa-(hu) t]]]
 who ʃamr-acc came-3sgf with-(him)
- c. * [CP man [IP ʃamr-an [IP daraba t ʔax-aa:(hu) t]]]
 who ʃamr-acc hit brother-acc-(his)
- d. * [CP kafa [IP ʃamr-an [IP darab-ta-(hu) t t]]]
 how ʃamr-acc hit-2sg-(him)
- e. * [CP mata: [IP ʃamr-an [IP daraba-(hu) t Zayd-un t]]]
 when ʃamr-acc hit-(him) Zayd-nom

As argued in the previous chapter, the presence of a *Ld'd* NP, which is base-generated in the IP-adjoined position (cf. chapter 3 for argumentation) also blocks *wh*-extraction. Thus, parallel to (124), we have (125):

- (125)
- a. * [CP man [IP ʃamr-un [IP daraba-hu t]]]
 who ʃamr-nom hit-him
- b. * [CP man [IP ʃamr-un [IP jaaʔ-at t maʃa-hu]]]
 who ʃamr-nom came-3sgf with-him
- c. * [CP man [IP ʃamr-un [IP daraba t ʔax-aa-hu]]]
 who ʃamr-nom hit brother-acc-his
- d. * [CP kafa [IP ʃamr-un [IP darab-ta-hu t]]]
 how ʃamr-nom hit-2sg-him
- e. * [CP mata: [IP ʃamr-un [IP daraba-hu Zayd-un t]]]
 when ʃamr-nom hit-him Zayd-nom

If LD is adjunction to IP, then the adjunction resulting from LD will correctly block *wh*-movement; the *wh*-phrase would have to move over two IPs to reach [SPEC, CP].

Against this, compare the unproblematic movement in (126) which involves crossing only one IP since (126) includes neither a topicalized nor a Ld'd NP:

(126)

- a. man $\text{\textcircled{f}amr-un}$ da:rib-un t
 who $\text{\textcircled{f}amr-nom}$ hitting-nom
 "Who has $\text{\textcircled{f}amr}$ hit?"
- b. kayfa $\text{\textcircled{f}amr-un}$ t
 how $\text{\textcircled{f}amr-nom}$
 "How is $\text{\textcircled{f}amr}$?"
- c. mata: $\text{\textcircled{f}amr-un}$ qa:dim-un t
 when $\text{\textcircled{f}amr-nom}$ arriving-nom
 "When is $\text{\textcircled{f}amr}$ arriving?"

If Topicalization arises through movement where the topicalized NP is adjoined to IP, It is necessary to determine the nature of this position: is it an A-position or an \bar{A} -position? and how does the topicalized NP receive an interpretation?

4.8.5 Interpretation by Variable Binding

The trace left by $\text{move-}\alpha$ in wh- constructions (38 above repeated in 127) and topicalization (128) is in an A-position:

(127)

- a. man_i ra?a Hasan-un t_i
 who saw-3sgm Hasan-nom
 "Who did Hasan see?"
- b. man_i ra?a-hu $_i$ t_i Hasan-un
 who saw-ob cl Hasan-nom
 "Who did Hasan see?"

(128)

- a. Hasan- an_i tu-hib-u al-bint-u t_i
 Hasan-acc 3sgf-like-ind the-girl-nom
 "Hasan, the girl likes"
- b. Hasan- an_i tu-hib-u-hu $_i$ t_i al-bint-u
 Hasan-acc 3sgf-like-ind-ob cl the-girl-nom
 "Hasan, the girl likes"

Unlike the usual case of NP-movement, the trace in (127 and 128) is not bound by an A-position. Consider the following structure:

(129) John_i was hit t_i

The NP *John* has moved from its D-structure position as an object of V to the subject position at S-structure. The trace in (129) behaves like an anaphor in that it is A-bound (the NP *John* is in an A-position, that of subject) in its local domain, viz. IP. Moreover, the trace of *John* does not bear Case since the passive morphology does not assign Case (Rouveret and Vergnaud (1980), Chomsky, (1981)) forcing movement of *John* to subject position. In contrast, the trace left by extraction of a wh-word (127) and of a topicalized NP (128) behaves as a variable, i.e, bound by an operator (\bar{A} -binder) in [SPEC, CP] and adjoined to IP respectively. I adopt the following definition of variable:

(130) α is a variable iff
 α is locally \bar{A} -bound

As a variable, the trace is A-free (not bound by an A-position), and it has Case, assigned to it by its governing head. Case is transmitted to the \bar{A} -binder in accord with Case theory. On Case inheritance see below section (4. 14).

The question to ask now is the following: How do these operators receive an interpretation within a modular approach to grammar which conceives of UG as a virtually rule-free system? (cf. chapter 1 for a presentation of this approach). In line with the shift from language-specific rules to a system of principles which constitute the internal organization of UG, I assume that the interaction between the various elements of a sentence is to be accounted for in terms of general principles. One such principle is the Principle of Full Interpretation (PFI). This principle requires every element of PF and LF that appears in a well-formed structure to be interpreted and, thus, licensed. Among

the licensing options in UG is the following: An operator is licensed by binding a variable. Therefore, to satisfy PFI, the operators, i.e., the *wh*-phrase *man* in (127) and the topicalized NP *Hasan-an* in (128), each must bind a variable. In the absence of a variable, the same structures will be excluded since the operator in each case will be unlicensed, as shown in (131) and (132) where the variable *t* is replaced by the lexical NP *Zady-an* :

(131)

- a. *man ra?a Hasan-un Zayd-an
- b. *man ra?a-hu Zayd-an Hasan-un

(132)

- a. *Hasan-an tu-hib-u al-bint-u Zayd-an
- b. *Hasan-an tu-hib-u-hu Zayd-an al-bint-u

I examined the properties of the trace left by extraction of *wh* and topicalized NPs with respect to various sub-systems of UG. It was determined that the trace is a variable which must be bound by an operator as a consequence of the Principle of Full Interpretation.

4.8.6 Case Inheritance

A salient feature of topicalization, viz. the extracted NP always bears the Case of its extraction site has not been accounted for as yet. Below is an explanation of this phenomenon in terms of Case inheritance.

In *On Binding* (1980), Chomsky assumed that *wh*-phrases must be assigned Case to avoid a Case Filter violation. The Case Filter requires that every lexical NP must have Case at S-structure. Since direct Case-assignment to the *wh*-phrase in COMP is not possible, and in order to assign it Case appropriately, Chomsky assumed in that work that Case is assigned by the rule *move- α* itself so that the *wh*-phrase receives the Case of the position it vacated. Thus, Case-assignment was incorporated into the formulation of the

rule $\text{move-}\alpha$ when a wh-phrase is moved from what is otherwise a Case-marked position. The notion that a wh-phrase inherits its Case from its D-structure position was assumed to follow from the assignment of indices as $\text{move-}\alpha$ applies.

In each of the sentences in (110), (113a) and (113b) the lexical heads V, N, and P assign the accusative (110), or genitive (113a and 113b) Case. This is clear in non-topicalized sentences where the trace of (110–113b) is replaced by a lexical NP:

(133)

- a. tu-*hib-u* Hasan-**an** al-*bint-u*
3sgf-like-ind Hasan-**acc** the-girl-nom
- b. ?akram-tu ?ax-a Hasan-*in*
honored-1sg brother-acc Hasan-**gen**
- c. *sallam-tu* *ʔala* Hasan-*in*
greeted-1sg on Hasan-**gen**

Assuming that a topicalized NP inherits the Case of the trace it binds, the topicalized NP *Hasan-an* in (113) would be expected to inherit the genitive Case assigned to the trace by N and P. However, *Hasan-an* must bear accusative Case. If it bears genitive Case (signalled by *-in* ending), the sentences will be rendered ungrammatical:

(134)

- a. * Hasan-*in*_i ?a-kram-tu ?ax-a-hu t_i
Hasan-gen honored-1sgm brother-acc-obcl
- b. * Hasan-*in*_i *sallam-tu* *ʔal-hi* t_i
Hasan-gen greet-1sgm to-obcl

(135) is excluded for the same reason --- the topicalized NP *Hasan* bears genitive Case:

- (135) * Hasan-*in*_i ?a-kram-tu [_{NP} *sadiq-a* ?ax-i-hi_i t_i]
Hasan-gen 1sg-honored-1sgm friend-acc brother-gen cl
**Hasan_i, I honored t_i friend's brother"

This behaviour requires an explanation. It should be recalled that an NP receives a Case feature as a result of one of the modes of Case assignment outlined above: through direct Case assignment under government, through inheritance, and through a rule of lexically triggered default Case-marking. It was suggested that the essential property of default Case-marking, as the term implies, is that it applies only when the first two options are unavailable. However, these are not necessarily the only ways the Case relations are expressed. In languages with morphological Case as in Arabic, a noun or an adjective may be marked for a Case feature as a lexical property. Thus since the NP *Hasan* in (134-135) is lexically marked for accusative Case, it cannot inherit another Case feature, namely genitive from its trace.

The Case-marking of the topicalized NP is tightly bound to the Case of the NP from which extraction takes place. Thus we have the paradigm in (136):

(136)

- a. * Hasan- an_i jahada [_{NP} sadiq-u-hu $_i$ t $_i$] al-?amir-a
 Hasan-acc saw friend-nom-ob cl the-prince-acc
 "**Hasan $_i$, t $_i$ friend saw the prince"
- b. Hasan- an_i jahada [_{NP} sadiq-a-hu $_i$ t $_i$] al-?amir-u
 Hasan-acc saw friend-acc-gen cl the-prince-nom
 "**Hasan $_i$, the prince saw t $_i$ friend"
- c. Hasan- un_i jahada [_{NP} sadiq-u-hu $_i$] al-?amir-a
 Hasan-nom saw friend-nom-gen cl the-prince-acc
 "As for Hasan, his friend saw the prince"
- d. Hasan- un_i jahada [_{NP} sadiq-a-hu $_i$] al-?amir-u
 Hasan-nom saw friend-acc-gen cl the-prince-nom
 "As for Hasan, the prince saw his friend"

(136a) is ungrammatical due to the fact that the topicalized NP *Hasan* is marked accusative while the NP from which *Hasan* has been extracted is marked nominative. (136b), on the other hand, is grammatical since *Hasan* bears the same Case assigned to the NP from which it has moved, namely the

accusative Case. The contrast between the two sentences shows that the NP *Hasan* acquires its Case by inheritance from the argument of the verb *fahada* "saw" which is the NP containing the trace of the NP *Hasan*.

(136c) is a LD structure generated at the base so that Case inheritance does not apply. It could also be analyzed as involving movement in which case it inherits its nominative Case from the subject NP containing its trace at S-structure. (136d) can only be a base-generated LD structure for the same reasons that exclude (136a).

That Case inheritance is available in the grammar as a mechanism which ensures the assignment of Case to lexical NPs is also established by wh-constructions. Consider to this effect (137) :

(137) ?*ayy-a*_i malikin ra?ay-ta t_i
 which-acc king saw-2sgm
 Which king did you see"

The NP ?*ayy-a* in (137) bears accusative Case signalled morphologically as *-a*. It is extracted from a complement position to which V assigns accusative Case. The NP must inherit the same Case assigned to its trace. If it has a different Case, viz. nominative signalled by *-u*, or genitive signalled by *-i*, the sentence will be ungrammatical, as (138a) and (138b) illustrate respectively:

(138)
 a. *?ayy-u malikin ra?ay-ta t
 b. *?ayy-i malikin ra?ay-ta t

If the NP is extracted from subject position, it must have nominative Case (139a), which surfaces as *-u*, and not accusative Case (139b), which surfaces as *-a*, or genitive Case (139c), which surfaces as *-i* :

(139)
 a. ?ayy-u_i malik-in t_i ra?aa-ka
 which-nom king-gen saw-ob cl
 "Which king saw you?"

b. *?ayy-a_i malik-in t_i ra?aa-ka

c. *?ayy-i_i malik-in t_i ra?aa-ka

Thus, Case inheritance accounts for the pattern of ungrammaticality.

If, by the Case Filter, a *wh*-phrase must have Case, then I would expect ungrammaticality to result if the variable that the *wh*-phrase is bound to lacks Case, since the *wh*phrase would not be able to inherit Case. This expectation is fulfilled:

(140)

a. *who*_i t_i seems [t_i to like Mary]

b. **who*_i does it seem [t_i to like Mary]

(141)

a. John_i is believed [t_i to have left]

b. **who*_i is it believed [t_i to have left]

A natural account of these facts is that a *wh*-phrase needs Case just like an NP in an A-position. *who* in the (b) sentences cannot inherit Case from its trace, which, while governed by *seem* and the passive form of *believe*, is not assigned Case; so that the sentences are blocked by the Case Filter.

Further support for the view of Case inheritance and Case conflict may derive from the contrast between cases like the following:

(142)

a. ?inna al-humma: Zayd-an_i ta-ʔuθ-u t_i
that the-fever Zayd-acc 3sgf-take-ind
"(It is true that) the fever, it has affected Zayd"

b. *?inna Zayd-an_i al-humma: ta-ʔuθ-u t_i

The NP *Zayd-an* in (142) has been extracted from an object position. Only (142a) is grammatical and (142b) is not. This contrast can be explained by assuming that the NP inherits the accusative Case assigned to it in its D-Structure position and by the notion of Case conflict which prohibits the assignment of two Cases to a single NP. No Case conflict arises in (142a), since the NP receives only one Case, the one by inheritance; thus, the sentence

is grammatical. (b) is ungrammatical because the NP has received two cases -- one by inheritance and the second by virtue of being governed by the accusative Case assigning complementizer *?inna*.

Case inheritance can also be argued for on the basis of extraction involving independent pronouns. Consider the following:

- (143)
- a. *?iyya:ka_i* *?akram-tu* *t_i*
 you(acc.) honored-1sg
 "You, I honored"
- b. **?anta_i* *?akram-tu* *t_i*
 you(nom.), I honored"

Note that only (143a), in which the accusative form of the pronoun appears, is grammatical; (143b), in which the pronoun appears in the nominative form is not. The pronoun must inherit the Case assigned to its trace by the governing verb. That it is governed and assigned accusative Case comes from the fact that it can only appear as *?iyya:ka*, not *?anta* at D-Structure:

(144) *?akram-tu* *?iya:ka/ *?anta*.

Finally, consider the contrast between (145a) and (145b) which illustrates the conspiracy between Case inheritance and Case conflict. *-hu* in (145b) is expletive:

- (145)
- a. **danan-tu* *tafa:m-a-ka_i* *Zayd-un* *?a:kilan* *t_i*
 believed-1sg food-acc-your Zayd-nom eating
 "I believed Zayd to have eaten your food."
- b. *danan-tu-hu* *tafa:m-a-ka_i* *Zayd-un* *?a:kilun* *t_i*
 believed-1sg-expl cl food-acc-your Zayd-nom eating

In (145) the NP *tafa:maka* has been moved from the object position occupied by *t*. (145b) which has the clitic *-hu* is grammatical, (145a), however, which lacks this clitic is not grammatical. In (145a) the NP *tafa:maka* is assigned

two accusative Cases --- one by inheritance and another by the matrix verb which governs it, thus a Case conflict is incurred.

In (145b), on the other hand, no Case conflict is incurred. The Case of the matrix verb is absorbed by the clitic, the NP *tafa:maka* is assigned a single Case, the one by inheritance, and thus the sentence is grammatical.

Chomsky (1981), among other advocates of the visibility hypothesis (see below) assume that the Case Filter is not relevant for NPs in \bar{A} -positions because these NPs are not arguments, and thus it is assumed that they do not require Case-marking. But they clearly do as was seen in this chapter and in chapter (3). ECM constructions to be discussed in the next chapter argue convincingly that the NP adjoined to CP must be assigned Case, although it is in an \bar{A} -position. In what follows, I extend the Case Filter to NPs in \bar{A} -positions.

4.9 Extending the Case Filter to \bar{A} -Positions

Chomsky (1981) assumes that lexical NPs in \bar{A} -positions [SPEC, CP] and adjoined positions do not undergo the Case Filter since such NPs are not in argument position. This is because Chomsky assumes that the Case Filter is entirely derived from the visibility hypothesis, which is a condition on Θ -role assignment to A-chains. Therefore, he assumes that the domain of Case inheritance is restricted to A-chains due to the visibility of Θ -roles. \bar{A} -chains are not assigned a Θ -role, and thus it is assumed that they are not within the domain of the Case Filter. It remains, however, most unclear why a filter based in abstract morphology should be sensitive to the distinction between A and \bar{A} -positions.

The constructions discussed in this study indicate that this approach is inadequate. It was argued in the previous chapter that Ld'd NPs and wh-prase must be Case-marked. As argued in this section, topicalized NPs require

Case-marking. Base-generated NPs in an \bar{A} -position adjoined to CP (ECM'd NPs), which will be investigated in the next chapter, must be assigned Case. None of these NPs are part of A-chains, but nevertheless, they have to be Case-marked.

To account for Case-assignment to the NPs in these constructions, the Case Filter has to hold for lexical NP's in spite of the fact that they are not part of an A-chain. I expand the domain of the Case Filter and thus Case inheritance to include \bar{A} -chains, informally defined as chains whose head (the structurally highest member) is in an \bar{A} -position. An A-chain is a chain whose head is in an A-position. Case inheritance is as follows:

(146) Case Inheritance:

If a lexical NP_x is in a chain (A-chain or \bar{A} -chain) containing a Case-marked position, then NP_x has Case.

Case inheritance is thus a property of chains; an NP in a Caseless position (not assigned Case directly) can pass the Case Filter if it is in a chain that contains a Case-marked position. This property is Case inheritance.

A chain in the sense that I shall be using the term is informally defined as follows: A chain is a sequence of categories at S-structure coindexed by move- α , each member except the head (the first member) is a trace of the first member. I restrict the categories relevant to the construction of chains to NPs.

Details of the theory of chains need to be worked out, and aspects of the theory of Case, as it relates to other sub-theories, remain to be discussed. This will be done in chapter (6), wherein I shall detail an approach to chains and Case that takes a quite different tack from those generally assumed.

Now, I turn to another Case related property --- that of adjacency. I argue for an adjacency condition on Case and mood assignment.

4.10 Adjacency

It is suggested in Chomsky (1981), and discussed in more detail in Stowell (1981), that Case is assigned only to an adjacent element. Stowell proposes the parameter of Case adjacency to account for the position of elements. Case adjacency simply states that adjacency of some sort is a condition on Case–assignment. In other words, if an NP is not adjacent to a Case assigner, Case may not be assigned, the NP will receive no Case, and the Case Filter will be violated. Stowell's basic argument in favour of this condition is that an unextraposed NP complement must precede a PP complement (147a), and in English, adverbs may not intervene between a verb and the bare NP that follows it (147b, and 148).

(147)

- a. *John removed from the trash can the cups.
- b. *John opened quickly the door.

The value of the adjacency parameter may be set differently for different languages. In Warlpiri, for example, no adjacency is involved in the assignment of Case (Travis 1984).

Stowell suggests that that the exact definition of the notion 'adjacency' may vary across languages, as adverbs may intervene between Case assigners and Case assignees in French (149a). Languages that require adjacency for Case–assignment may require strict adjacency, as in English, or argument adjacency, as in French:

(148)

- a. I like books very much
- b. *I like very much books

(149)

- a. J'aime beaucoup les livres.
I like very much the books
"I like books very much"

- b. *J'ai mis sur la table les livres
I have put on the table the book
"I put the book on the table."

In (148), we see that an adverb cannot be interpolated between the Case assigner and the Case assignee. In French, however, an adverb may be interpolated, but not another argument. It is strict adjacency, then, that is crucial for English, and only argument adjacency that is crucial for French.

Like French, Italian allows adverbs to intervene between Case assigners and assignees:

- (150) Mario ha letto attentamente un libro
"Mario has read attentively a book"

Thus English on one hand and French and Italian on the other have slightly different definitions of adjacency; for the latter two languages adjuncts are not taken into consideration in determining adjacency.

Case-assignment to a lexical subject NP in English is also not subject to a strict adjacency condition since adverbs may intervene between the Case assigner which is the tensed INFL, and the subject. The adjacency condition on Case-assignment is thus a somewhat variable notion and should not be taken to always mean strict adjacency.

I shall argue that Case-assignment, as well as mood-assignment for Arabic, observe a condition of strict adjacency. In other words, α (α = a Case assigner or a mood assigner) must be adjacent to β (β = NP or V) to which it assigns the feature γ (γ = Case or mood).

4.10.1 Case Adjacency

A number of facts in Arabic provide evidence that an adjacency requirement is imposed on the assignment of Case in Arabic. The facts are based on the following:

(153)

a. ʔalim-tu Zayd-an qa:ʔim-an wa ʔumar-an
knew-1sg Zayd-acc standing-acc and ʔumar-acc
"I knew Zayd and ʔumar were standing."

b. ʔalim-tu $\text{la: Zayd-un/(*-an)}$ qaaʔim-un/(*-an) wa ʔumar-un/(*-an)
not and
"I knew neither Zayd nor ʔumar were standing."

d. The occurrence of the interrogative element **ʔa** (boldfaced) and glossed as 'did' in (154b); compare (154a) and (154b):

(154)

a. danan-tu Zayd-an qaaʔim-un
believed-1sg Zayd-acc standing-nom
I believed Zayd to be standing-nom

b. danan-ta **ʔa-Zayd-un/(*-an)** qaaʔim-un/(*-an)
did-2sgm
"Did you believe Zayd to be standing?"

e. the occurrence of an expletive pronoun **ma:** 'it' (boldfaced) with the accusative Case assigning complementizers *ʔinna* 'that' (155), and *kaʔanna* 'as though' (156):

(155)

a. ʔinna Zayd-an ʔasad-un
that Zayd-acc lion-nom
(It is) as if Zayd is a lion."

b. $\text{ʔinna ma: Zayd-un/(*-an)}$ ʔasad-un
it nom
(It is that) Zayd is a lion."

(156)

a. kaʔanna Zayd-an ʔasad-un
as if Zayd-acc lion-nom
"(It is) as if Zayd is a lion."

b. $\text{kaʔanna ma: Zayd-un/(*-an)}$ ʔasad-un
nom
"(It is) as if Zayd is a lion."

In all the (a) sentences above, the NP *Zayd-an* is governed and assigned accusative Case by the governing head; the accusative Case

surfaces as *-an* . In the (b) sentences, however, the accusative Case cannot be assigned and the NP must appear in the nominative Case, signalled by *-un* . In (151b) the corroborative element *la* - intervenes between the verb and the NP, in (152b) *ma:* intervenes; in (153b) *la:* intervenes; in (154b) the question element *?a* - intervenes; in (155) and (156) the expletive pronoun *ma:* intervenes between the accusative Case assigning complementizers and the NP *Zayd* so the Case assigner can no longer assign accusative Case to the NP since the two elements are not adjacent. Thus the sentences fail. Interestingly, the insertion of these elements, and the fact that Ld'd NPs in Arabic has a recourse to a default nominative Case in the absence of a Case assigner save these sentences. As the morphology indicates, the NP is assigned the default nominative LD Case, signalled by *-un* instead of the accusative Case which is assigned in the (a) sentences.

In an intriguing manner, the intervening elements rescue the structure from Case conflict – that is, the assignment of two Cases to a single NP --- one accusative by the verb and the other nominative by default. See chapter 3, section (3.16.4) on Case conflict.

The condition of Case adjacency also accounts for the contrast between the sentences in (157):

(157)

- a. ka:na Zayd-un ?a:kilan tafa:m-a-ka
was Zayd-nom eating food-acc-your
Zayd was eating your food."
- b. *?a:kilan ka:na Zayd-un tafa:m-a-ka
eating was Zayd-nom food-acc-your
- c. tafa:m-a-ka_i ka:na Zayd-un ?a:kilan t_i
food-acc-your was Zayd-nom eating

(157a) is a well-formed sentence since no Case adjacency violation is incurred. Each of the Case assigners, INFL, which assigns nominative Case to

the subject NP *Zaydun* and *?a:kilan*, which assigns accusative Case to the object NP *tafa:maka* are adjacent to the Case recipients. (157b), however, is not a well-formed structure since *?a:kilan* is not adjacent to *ta:fa:maka*. In (157c), the object *ta:fa:maka* is extracted, leaving *t* in its D-Structure position. The sentence is well-formed although the NP *tafa:maka* is not adjacent to its Case assigner *?a:kilan* at S-Structure. In this Case I am assuming that *?a:kilan* assigns the accusative Case to *t*, which is adjacent to it, and that the Case is inherited by the extracted NP.

4.10.2 Mood Adjacency

In the section to follow, I will attempt to show that mood assignment in Arabic also requires adjacency.

There are three complementizers in Arabic which assign a subjunctive mood *muda:riʕ mansuub* to a following verb, in addition to the negator *lan* 'not', which is also a subjunctive mood assigner. The subjunctive mood surfaces as *-a*. The complementizers are: *kay* 'so that', *?iðan* 'then', and *?an* 'that'. They appear in boldface in the data below. The verb must immediately follow these complementizers. Similarly, the verb must be adjacent to *lan*. Consider the following sentences introduced by the negator *lan* (subj = subjunctive):

(158)

- | | | | | |
|----|----------------------------------|------------------|-----------------|------------------|
| a. | lan | ?adrib-a | Zayd-an | wa-lla:hi |
| | not | hit-subj | Zayd-acc | by-Allah |
| | "I shall not hit Zayd by Allah." | | | |
| b. | wa-llaahi | lan | ?adrib-a | Zayd-an |
| | by-Allah | not | hit-subj | Zayd-acc |
| c. | * lan | wa-lla:hi | ?adrib-a | Zayd-an |
| | not | by-Allah | hit-subj | Zayd-acc |

(158a-b) are grammatical since the oath phrase *walla:hi* appears in final and initial positions respectively. (c) is ungrammatical since the mood assigner *lan* is separated from the verb *?adrib* by the oath phrase, giving rise to an adjacency violation, and thus the sentence is ruled out.

Similarly, *lan* cannot be separated from the verb by a conditional phrase, as illustrated below:

(159)

- a. ?*in* *tadrib-ni* *lan* ?*adrib-a-ka*
 if hit-me not hit-subj-you
 "If you hit me, I will not hit you."
- b. *lan* ?*adrib-a-ka* ?*in* *tadrib-ni*
 not hit-subj-you if hit-me
- c. **lan* ?*in* *tadrib-ni* ?*adrib-a-ka*
 not if hit-me hit-subj-you

The conditional phrase *?in tadrib-ni* in (159a) is placed in initial position. In (159b) it is placed in final position. Both sentences are grammatical. In (159c) it is placed between the subjunctive mood assigner *lan* and the mood assignee, namely the verb *?adrib*, blocking the assignment of subjunctive mood. Thus, the sentence is ruled out.

Another argument for the adjacency condition on mood-assignment comes from Topicalization with a conditional mood *jazm* assigning complementizers, such as *?in* 'if'.

As I argued in (4.8.3), topicalized NPs move to a position adjoined to IP (a position which immediately follows the complementizer). They cannot be adjoined to CP (a position which precedes the complementizer). All the complementizers used in (4.8.3) to illustrate Topicalization were non-mood assigners. Since they are non-mood assigners, they can be directly followed by a topicalized NP; in other words, a topicalized NP can intervene between the complementizer and the verb.

Now, I will argue that when a mood assigning complementizer is used, the topicalized NP must be adjoined to CP, not to IP; i.e, the topicalized NP cannot be interpolated between the complementizer and the verb since this will result in an adjacency condition violation on mood–assignment. Consider the following sentences: (160a) is a regular non–topicalized sentence; (160b) illustrates topicalization to CP, (160c) illustrates the impossibility of topicalization to IP, since the conditional mood assigner *?in* is not adjacent to the verb. This mood is marked morphologically by the deletion of a final vowel **suku:n**:

(160)

a. *?in* tukrim Zayd-an yu-krim-ka
 if honour Zayd-acc 3sgm-honour-you
 "If you honour Zayd, he will honour you"

b. [_{CP} Zayd-an_i [_{CP} *?in* [_{IP} tukrim yu-krim-ka t_i]]
 Zayd-acc if honour 3sgm-honour-you

c. * [_{CP} *?in* [_{IP} Zayd-an_i [_{IP} tukrim yu-krim-ka t_i]]
 if Zayd-acc honour 3sgm-honour-you

(160c) is ungrammatical since the NP *Zayd-an* intervenes between the subjunctive mood assigner *?in* and the verb *tukrim* , violating the mood adjacency condition.

Recall in sections (3.16.3 and 4.14), it was argued that a topicalized NP cannot move an adjoin to IP if at S–structure, the NP would be governed and assigned Case by the accusative Case assigning complementizer *?inna/?anna* (a process that is generally possible otherwise). This is because the NP would receive two Cases, one from its D–structure position by inheritance, and the second time from the governing complementizer. This is illustrated in the contrast between the sentences in (161), repeated below, in which the NP *Zayd* has been topicalized:

(161)

a. ?inna al-hummaa Zayd-an_i ta-?xuth-u t_i
 that the-fever Zayd-acc 3sgf-take-ind
 “(It is true that) the fever, it has affected Zayd”

b. *?inna Zayd-an_i al-hummaa ta-?xuth-u t_i

I ascribed the contrast in (161) to Case conflict; in effect, the NP *Zayd* in (a) receives only one Case, while in (b) it receives two Cases from two different sources, once from its trace which is a complement of a transitive verb, and once again from the complementizer *?anna* by direct assignment.

At this point, it seems that adjunction to IP would be possible, if it does not involve Case conflict -- that is if the NP at S-structure receives only one Case. This is precisely the context in (162) with the complementizer *?an*, which unlike *?inna/?anna*, is not a Case assigner:

violated, and the sentences are thus barred. What this shows is that while the adjunction site is open at S-structure, the licensing condition of adjacency intervenes to bar ungrammatical derivations.

I have presented arguments for Case and mood adjacency. Case-assignment and mood-assignment are parallel in that the element assigning the feature Case/mood must be adjacent to the element to which it assigns that feature. The ungrammatical cases are precisely those in which a violation of the adjacency condition is incurred.

4.11 Final Summary and Conclusions

This chapter focused on constructions involving movement: Wh-questions and topicalization. The landing sites of wh-movement and topicalization are distinct. wh-phrases move to the specifier of CP; topicalized NPs move and adjoin to IP. Topicalization, however, can also be adjunction to CP by movement.

Complement/non-complement asymmetries in Arabic were discussed, and accounted for in terms of the notion barrier as incorporated into the ECP, together with using features of Lasnik and Saito's analysis (forthcoming). Then the discussion focused on subject/subject asymmetries and were accounted for by the same principle. With respect to the ECP, the principal consequence of the reasoning in this chapter is that adjunction to IP raises a barrier blocking extraction over a topic from properly ungoverned positions. Another important result relevant to the ECP is that the obligatory presence of an overt clitic coindexed with a variable trace. The ECP forces the presence of the clitic to permit the variable to be properly governed.

There are essentially two important results emerging from this chapter with respect to Case theory. First, there is evidence from the analysis of wh-

questions, as well as from the analysis of topicalization that Case inheritance plays a significant role in the grammar. The domain of Case inheritance has been extended to cover lexical NPs in \bar{A} -positions, thus extending the domain of application of the Case Filter. NPs in \bar{A} -positions inherit Case in the same way as NPs in A-positions do.

Secondly, two properties which are regulated by the Case Filter have been defended in this chapter--Case conflict and Case adjacency. These properties provide strong empirical motivation for Case theory involving such primitive syntactic entities.

Finally, a condition of adjacency on mood-assignment has been introduced and defended, a condition which is analogous to Case adjacency requiring that the mood assigner be adjacent to the mood assignee in order for the latter to properly receive a mood feature.

Based on extraction, I argued in favour of the principles of Case inheritance and Case conflict. Finally, I argued that Case-assignment and mood-assignment in Arabic require adjacency.

Chapter 5

Exceptional Case Marking

5.1 An Overview of Chapter Five

In this chapter, I examine the phenomenon of Exceptional Case Marking (ECM) constructions. I define Arabic ECM as those constructions in which an NP within an embedded complement clause is acting in some respect more like an object of an immediately higher verb than a subject of the following verb. The object-like behaviour of this NP (ECM'd NP) concerns the fact, for example, just like the object of a typical verb, it is assigned accusative Case by the higher verb. Moreover, just like the object of a typical verb, it may undergo "object-referring" rules in the main clause. For example, the ECM'd NP can be passivized, and can surface as a reflexive whose antecedent is the main clause subject. This will be shown in sections (5.2) and (5.4.4). ECM structures in Arabic are not string vacuous, and, unlike English, generally permit ECM to non-subject NPs. This will be illustrated by the data in section (5.3.1). It will be argued in section (5.4.2) that ECM in Arabic involves the base-generation of an NP in an \bar{A} -position [α , CP], and, as in all non-string vacuous ECM structures and LD in Arabic, the ECM'd NP is coindexed with an NP pronoun in a Θ -position. Characteristically, this relation is unbounded and not subject to Subjacency, as will be argued in section (5.5).

Next, this chapter examines non-thematic subject constructions. These are constructions in which a non-thematic NP comes to act as a subject of a VP, and is coindexed with an embedded thematic NP position. I consider this NP to arise through movement from its D-structure position [α , CP] to the matrix subject position, rather than being base-generated in the subject position. This

movement is triggered by Case theory in the following way. Since the verbs involved in this construction are non-Case-marking verbs, which do not have a Θ -subject, then A-movement, essentially like Raising-to-Subject, can take place from the $[\alpha, CP]$ position to the matrix subject position.

5.2 ECM in English

In this section I briefly look at the phenomenon of ECM in English, which - as it has generally been assumed recently -- I consider to be the result of the subcategorization of certain verbs for IP complements. Consider the following sentences:

(1)

- a. I consider John to be competent.
- b. I expect John to do well.

It has been argued (Postal, 1974) that these sentences are best analyzed as involving Raising-to-Object, a process whereby the thematic subject of the embedded clause *John* is raised to a subcategorized non-thematic position to become the non-thematic object of the matrix verb. The Raising-to-Object analysis is incompatible with the Projection Principle, whose interaction with the Θ -Criterion excludes non-thematic complement positions. One of the fundamental hypotheses of the principles and parameters approach (GB theory) is that subcategorization entails Θ -marking, that is a lexical head may select for a complement only if it also assigns a Θ -role to it. This hypothesis limits the types of available lexical entries, which in turn restricts possible rule types. Movement of an argument from a Θ -position to another Θ -position is excluded since the moved argument ends up with two Θ -roles; hence Raising-to-Object is excluded. In order for *John* to appear as the subject of the embedded VPs *to be competent* and *to do well*, these VP's must assign to it a Θ -role (since the Θ -Criterion holds at D-structure). If *expect* has a direct object position, it must

Θ -mark it. Given the Projection Principle and the Θ -Criterion, then the NP *John* in (1) above cannot be considered an object of the matrix verb in the sense of being a sister to it. It must therefore be the subject of the clausal complement from which it receives a Θ -role. Since a Raising-to-Object analysis is unavailable within GB, Chomsky (1981) proposed an ECM analysis, whereby verbs like *consider* and *expect* trigger S-bar deletion and hence the embedded subject is governed and assigned Case by the governing verb ¹. This is so because under Chomsky's (1981) proposal, IP is not a maximal projection. However, this proposal is unworkable in a related case:

(2)

- a. *I consider [_{IP} [_{IP} John being unscrupulous] to be unpleasant]
 b. I consider [_{IP} [_{IP} PRO being unscrupulous] to be unpleasant]

The subject of the complements to *consider* in (2) are clausal gerunds, specifically IPs:

(3)

- a. I remember [_{IP} him telling a story]
 b. I left without [_{IP} him explaining the story]

If IPs are not maximal projections and are thereby always transparent to government, then *John* in (2a) should be able to receive Case from *consider*. This is apparently not possible, as the contrast between (2a) and (2b) suggests.

¹ Another reason for the \bar{S} -deletion proposal was provided by facts pertaining to Subjacency. Since the clausal complement X^{\max} (\bar{S}) does not block extraction, it is theoretically necessary to delete it. Under the proposal that \bar{S} -deleting verbs in fact subcategorize for an IP complement, and under the version of Subjacency outlined in chapter 1, IP will not act to block extraction from within, since it is Θ -governed, hence not a barrier, and Subjacency facts are explained. \bar{S} -deletion was also generally assumed in Raising predicates (i.e. predicates which have a clausal complement and a $\bar{\Theta}$ -subject) in order for the subject trace to be properly governed by the matrix predicate:

Louise_i seems [_{IP} t_i to have read the Quran]

But see the discussion around (2) in text.

Chomsky (1986b) solves both these problems with a definition of government that not only correctly distinguishes between (2) and (4) but also allows antecedent government to be defined in terms of government. The leading idea behind his proposal is to define maximal projections as barriers to government only when they fail to be in a particular relation with a Θ -marker. See chapter (1) of this thesis for details.

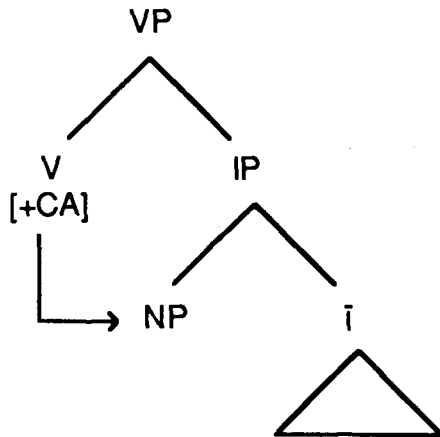
If I assume that ECM in English is actually subcategorization by believe-type verbs for IP as their clausal complements, then the structure of (1a) is as in (4):

(4) They consider [_{IP} John to be competent]

This makes the S-bar deletion of Chomsky (1981) unnecessary since, assuming the definition of government (cf. chapter 1), a governor α is able to govern into the specifier of its governed category β . In (2) IP is a category governed by *consider* and so is its specifier *John*. Since Case is assigned under government, a verb taking an IP complement is able to assign Case to the specifier of IP containing the clausal subject. In this view, the term ECM is a misnomer, nonetheless, I will continue using it since it has become established. In (5) below the matrix verb will govern the specifier of IP (the embedded subject NP *John*) and will assign to it accusative Case as diagrammed below:

(5)

[+CA] = Case assigner
→ = Case-assignment



That the subject *John* of the lower clause is assigned accusative Case is shown in (6a) where it appears as *him*, not *he*. That *him* is governed by the matrix verb is demonstrated by the fact that the embedded subject can be a reflexive coindexed with the subject of the matrix clause as in (6b). The reflexive must be bound in its local domain, so it must have a governor, and the local domain must be the IP containing *expect*: The ECP requires the trace of *John* to be properly governed, so proper government must be possible across IP in (6c):

(6)

- a. They consider him/*he to be competent.
- b. John expects himself to do well.
- e. John_i is expected [_{IP} t_i to do well]

The theory of Barriers outlined in chapter (1) interacts with the theory of small clauses (Chomsky, 1981, Stowell, 1983).² In certain interesting respects,

² Chomsky (1981: 107) defines a small clause structure as "a clausal structure lacking INFL and the copula". In the theory of small clauses of Chomsky (1981) and Stowell (1983), small clauses of type (7) in text are considered projections of their predicates. AP is considered a projection of *intelligent* and *John* its subject, receiving its q-role from the A head of AP, and its Case from *consider*. The verb in (7) subcategorizes for an AP, with the subject NP *John* analyzed as the specifier of AP. The subject, being in a specifier position, is by definition governed and assigned accusative Case by the verb (cf. the contrast between (7b) and (7c) in text above. Since the subject position is governed, PRO is excluded from such a governed position:

(1) *They consider [_{AP} PRO [_A intelligent]]

subjects of small clauses behave like a main clause object, thus sharing many of the properties of ECM clauses. For example they may undergo "object referring rules" in the main clause, such as accusative Case-assignment, reflexivization and passivization. Thus, Parallel to (1,3) we have (7), a typical small clause construction:

- (7)
- a. They consider [_{AP} John [_A intelligent]]
 - b. They consider [_{AP} him [_A intelligent]]
 - c.*They consider [_{AP} he [_A intelligent]]
 - d. They consider [_{AP} themselves [_A intelligent]]
 - e. They_i are considered [_{AP} t_i intelligent]]

The main verb *consider* selects a proposition so that the bracketed AP should be clausal of some sort. *Consider* does not select the subject of AP *John* (*John* is not considered in this example), and pleonastic elements such as non-referential *it* may appear as the subject as in (8):

- (8) They consider it obvious that John is intelligent.

This suggests that the bracketed AP complement in (7) is a subject-predicate structure.

Since *consider* Case-marks *John*, AP must not be a barrier for Case-marking, hence not a barrier for government if Case-marking takes place under

The other type of small clause is the adjunct small clause, as in (2) with the structure

- (3):
 (2) John arrived nude.
 (3) John_i [_{VP} arrived] [_{AP} PRO_i nude]

They are not subcategorized for by the verb, but are adjuncts outside of the VP and outside of the government domain of the verb. This is why *PRO* is allowed as their subject, since it is an ungoverned position. The VP in (3) assigns a Θ -role to the matrix subject, while *PRO* receives its Θ -role from the predicate *nude*.

Williams (1980, 1983) develops a theory of predication to account for these structures. The main difference between the predication theory and the small clause theory is that while the small clause theory defines subject as [NP, X], the predication theory defines it as the external argument of a maximal projection. The latter theory does not view the subject and the predicate as forming one unit (clausal or otherwise), as in the small clause analysis.

government.³ This is so because *consider* Θ -governs the X^{\max} AP, voiding the barrierhood of AP, hence a reflexive and an NP trace are permitted in the subject position of AP.⁴

5.3 Non-string Vacuous ECM

I will now turn to ECM in Arabic. Before the theoretical discussion of this construction, I will first present some of the data to be considered below.

5.3.1 The Data

Like English, Arabic allows ECM of subjects. However, unlike English, Arabic also allows ECM to a wide range of non-subject NPs.⁵ (8) below is a regular declarative clause. Notice that the ECM'd NP in all the examples below

³ Not surprisingly, the corresponding small clauses in Arabic behave in the same fashion:

- (1)
- a. yaʕtabir-uuna [_{AP} ʕamr-an [_A ʕakiy-an]]
 consider-3mpl ʕamr-acc intelligent-acc
 "They consider ʕamr intelligent"
 - b. yaʕtabir-u:-hu [_{AP} pro [_A ʕakiyy-an]]
 consider-3plm-obj cl intelligent-acc
 "They consider him intelligent"
 - c. *yaʕtabir-uu [_{AP} huwa [_A ʕakiyy-an]]
 consider-3plm he intelligent-acc
 "They consider he intelligent"
 - d. yaʕtabir-u ʕamr-un[_{AP} nafs-a-hu [_A ʕakiyy-an]]
 consider-1sm ʕamr-nom self-acc-him intelligent-acc
 "ʕamr considers himself intelligent"
 - e. yuʕtabaru ʕamrun_i [_{AP} t_i ʕakiyyan]
 is considered ʕamr intelligent
 "ʕamr is considered intelligent"

The accusative Case, signalled morphologically by *-an* is assigned by the matrix verb to the subject of AP, as AP does not act as a barrier for government of the subject by the matrix verb, since AP is L-marked by this verb. As expected, (b) is excluded because the nominative pronoun appears in the subject position of the AP small clause in stead of the accusative form. Since the subject position of AP is governed, it can be filled by a reflexive pronoun (d); no barriers intervene between the reflexive and its antecedent, and the reflexive is correctly bound in its local domain (the whole IP), in conformity with Principle A of the binding theory. By the same logic, assuming the ECP (1e) is permitted.

⁴ For a definition of the concepts of government and barrier cf. chapter 1.

⁵ Salih (1985) examines similar structures within Relational Grammar. My judgments differ from Salih's.

must be coindexed with a pronoun; the absence of a pronoun gives an ungrammatical result:

- (8) hasib-tu ?anna Hind-an hadar-at il-ijtima:ʕ-a
 thought-1sg that Hind-acc attended-3sgf the-meeting-acc
 'I thought that Hind attended the meeting'
- (9) illustrates ECMing of subjects:
- (9) hasib-tu Hind-an ?anna-*(ha) hadar-at il-ijtima:ʕ-a
 thought-1sg Hind-acc that-cl attended-3sgf the-meeting-acc
 'I thought, as for Hind she attended the meeting'
- (10) illustrates ECMing of direct objects:
- (10) hasib-tu il-ijtima:ʕ-a_i ?anna Hind-an hadar-at-*(hu_i)
 thought-1sg the-meeting-acc that Hind-acc attended-3sgf-ob cl
 'I thought, as for the meeting Hind attended it'
- (11) illustrates ECMing of oblique objects:
- (11) hasib-tu il-ijtima:ʕ-a_i ?anna Hind-an ḡahab-at ?ilay*(hi_i)
 thought-1sg the-meeting-acc that Hind-acc went-3sgf to-ob cl
 'I thought, as for the meeting Hind went to it'
- (12) illustrates ECMing of possessors:
- (12) hasib-tu Hind-an_i ?anna sadiq-a-*(ha_i) hadara il-ijtima:ʕ-a
 thought-1sg Hind-acc that friend-acc(his) attended-3sgm the-meeting-acc
 'I thought, as for Hind her friend attended the meeting'

Where the ECM'd NP in the data above is a non-subject (an object or a possessor), it is coindexed with a phonologically null pronoun, which is itself coindexed with a clitic.⁶ However; when a subject receives ECMing as in (9), no clitic appears. The ECM'd subject NP is coindexed with AGR.

The class of verbs which permit this construction fall into two semantic fields: believe-type verbs (B-verbs) and want-type verbs (W-verbs) cf. Postal, (1974). B-verbs in Arabic include the following: *danna* 'think, believe', *wajada* 'find', *ʕadda* 'consider', *hasiba* 'suppose, think', *daraa* 'realize', *ʕalima* 'know', *xaala* 'imagine', *raʔa*: 'see, think, decide', *zafama* 'claim', *?iftaqada* 'believe', *fakkara* 'think', *?iftabara* 'consider', *shakka* 'suspect'. W-verbs include: *?ara:da* 'want', *?amila* 'hope', *tamanna*: 'hope', *nasaha* 'advise', *tawaqafa* 'expect',

⁶ I have coindexed the ECM'd NP with the clitic, although the clitic itself is not the pronoun. Recall how I briefly analyzed clitics in chapter 3.

?amara 'order'.⁷ There are some differences between B-verbs and W-verbs with respect to the type of complementizers they select to introduce sentential complements. There are two types of complementizers in Arabic: the accusative Case assigner ?anna and the mood assigner ?an. B-verbs select ?anna only except for *hasiba* and *ra?a:*, which can also select ?an. W-verbs normally select ?an, but they may also occur with ?anna.

ECM and embedded LD structures differ in a number of respects, an issue which I explore directly.

5.4 Differences between ECM and LD

In this section I will establish clear criteria for distinguishing ECM and LD. The criteria are based on the following differences between the two constructions.

5.4.1 Adjunction Sites

5.4.2 ECM Is Adjunction to CP

Consider now the site of base-generation of the ECM'd NP (see section (5. 5) below for arguments that this NP is base-generated). Following the assumptions of sections (3. 7) and (3. 13) of chapter 3 regarding the position of the embedded Ld'd NP, the site of the ECM'd NP cannot be the specifier position of CP, SPEC, since SPEC is reserved as a landing site for wh-operators, and the ECM'd NP is not such an operator. That the specifier position of CP is reserved as a landing site for wh-operators can be seen from the fact that a wh-operator can appear in it alongside an ECM'd NP in the CP adjoined position:

⁷ This list is not necessarily an exhaustive list of ECM verbs in Arabic. The verbs listed here are those I have found to take ECM construction; other verbs may exist that I am unaware of at this time.

(13)
 ?a-danan-ta [_{CP} Zayd-an_i [_{CP} kam marratan_k [_{IP} pro_i duriba t_i t_k]]
 did-know-2sgm Zayd-acc how many times was hit
 "Did you know Zayd how many times he has been hit"

Notice that the ECM'd NP *Zayd* can be coindexed with an embedded pronoun in positions other than subject. In (14) it is coindexed with an object; in (15) it is coindexed with a possessor:

(14)
 ?a-danan-ta [_{CP} Zayd-an_i [_{CP} kam marratan_k [_{IP} daraba-hu pro_i Ali-un t_k]]
 did-know-2sgm Zayd-acc how many times hit-3sgm-obcl Ali-nom
 "Did you know Zayd how many times Ali hit him"

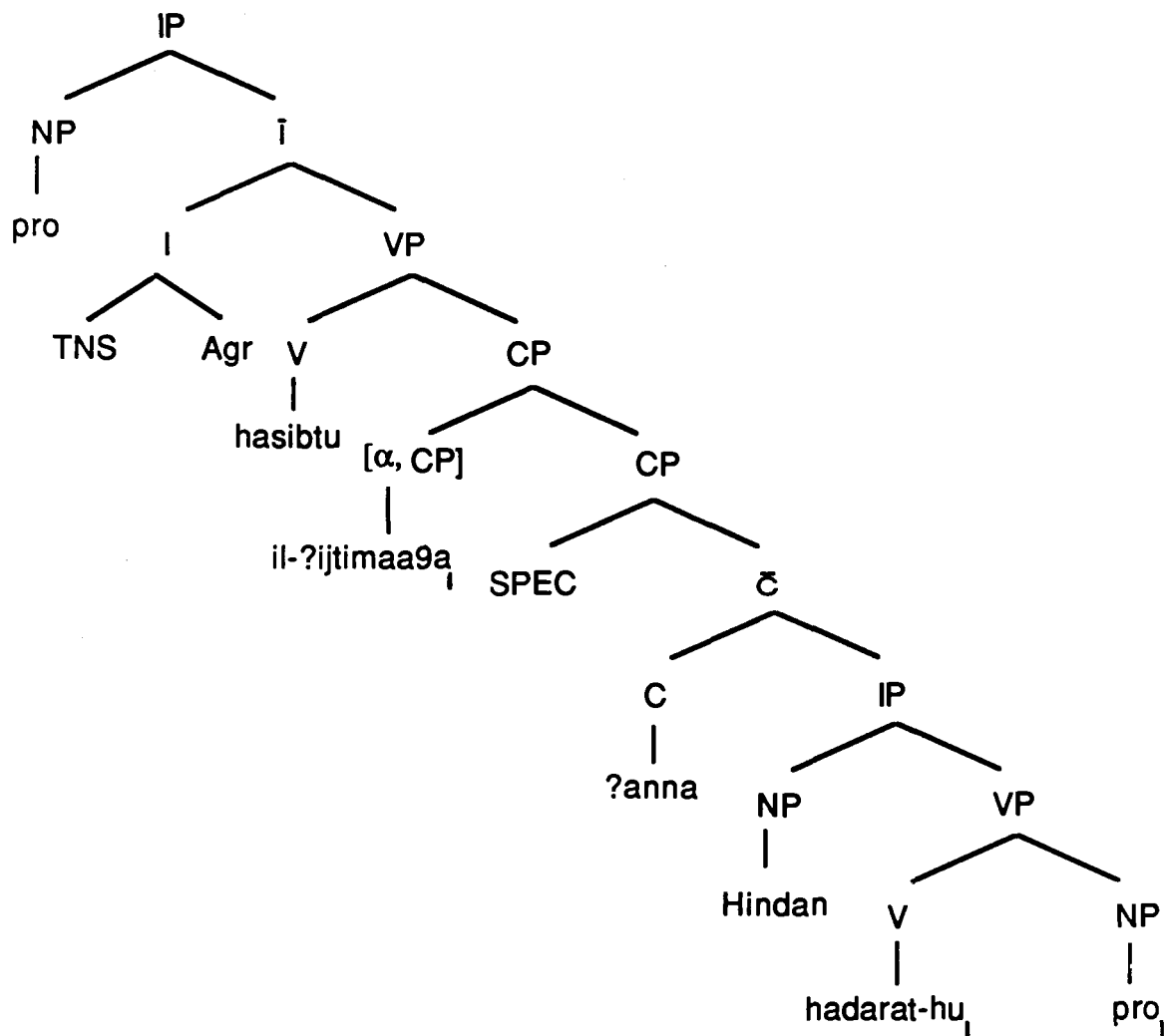
(15)
 ?a-danan-ta [_{CP} Zayd-an_i [_{CP} kam marratan_k [_{IP} daraba Ali-un ?ab-a:-hu pro_i t_k]]
 did-know-2sgm Zayd-acc how many times hit-3sgm Ali-nom father-acc-his
 "Did you know Zayd how many times Ali hit his father?"

The Structure-Preserving Constraint (Emonds, 1985) prevents a maximal projection from being in COMP. Since the ECM'd NP is a maximal projection, and since COMP is the head of CP, the ECM'd NP cannot be in COMP. I propose that the ECM'd NP is base-generated in a position adjoined to CP, [α , CP].

This position is dominated by CP and is sister to CP as shown in the structure (16). Thus, for an Arabic ECM sentence such as (10), I propose the following D-structure ⁸:

⁸ The node "SPEC" in the structure (16) is represented only for ease of reference. It is not intended that the particular node "SPEC" exists as a grammatical entity. The notion of specifier is relationally defined. The term SPEC denotes a position that is immediately dominated by the X^{max} of a syntactic category. In other words, SPEC is merely a node label for parts of the structure of the phrase that may be filled by syntactic categories. It is not synonymous with the term specifier which denotes the class of determiners, quantifiers and possessors.

(16)



The position $[\alpha, CP]$ is an \bar{A} -position, since no Θ -role is ever assigned to it. An NP appearing in $[\alpha, CP]$ will be (by definition) governed by the matrix verb, and hence will be Case marked by this verb.⁹ That this NP is governed by the higher verb is evidenced by the fact that the NP can be an anaphor, a reflexive (17a) and a reciprocal (15b) :

(17)

- a. danna χ a:lid-un_i nafs-a-hu_{i/k} ?annahu ya-hlumu
 believed χ a:lid-nom self-acc-him that 3sgm-drem
 "Xa:lid believed himself to be dreaming"

⁹ Shlonsky and Sigler (1986) examine similar structures in Berber. They argue that ECM'd NP's in Berber are base-generated in a position adjoined to CP (\bar{S} for them), where the ECM'd NP receives Case-marking but not θ -marking from a higher verb.

b.
danna al-qawm-u baʔd-u-hum baʔd-an¹⁰ ʔanna-hum
believed the-people-nom some-nom-them each other-acc that-they
yahlumuna
dream
"The people believed each other to be dreaming.

Government and Case-marking of the specifier position falls under the definition of government and the conditions for Case-marking outlined in chapter 1. Hence I need not discuss it further here, but see section (5. 7) below for arguments that the NP in the adjoined position [α , CP] must receive Case in conformity with Case theory. Since Case is assigned under government, [α , CP] must be a governed position.

5.4.3 Left Dislocation is Adjunction to IP

I argued in section (3. 13) of chapter 3 that a Ld'd NP is base-generated in a second specifier position [α , IP], a position adjoined to IP. This is an \bar{A} -position, since no Θ -role can be assigned to it. Of interest is that an embedded Ld'd NP always appears to the right of the complementizer, as shown by the examples under (105) in chapter 3. All those examples will be rendered

¹⁰ There are two basic constructions for expressing reciprocity in Arabic. The first structure exhibits two occurrences of the reciprocal baʔd. The first occurrence of this expression is a construct phrase (genitive construction) to which a clitic in the plural form is attached. Further; it may independently have a GF (1a), or may be an appositive to another NP (1b). The second part is always indefinite, as indicated by the morpheme -in, and always has a GF different from that of the first:

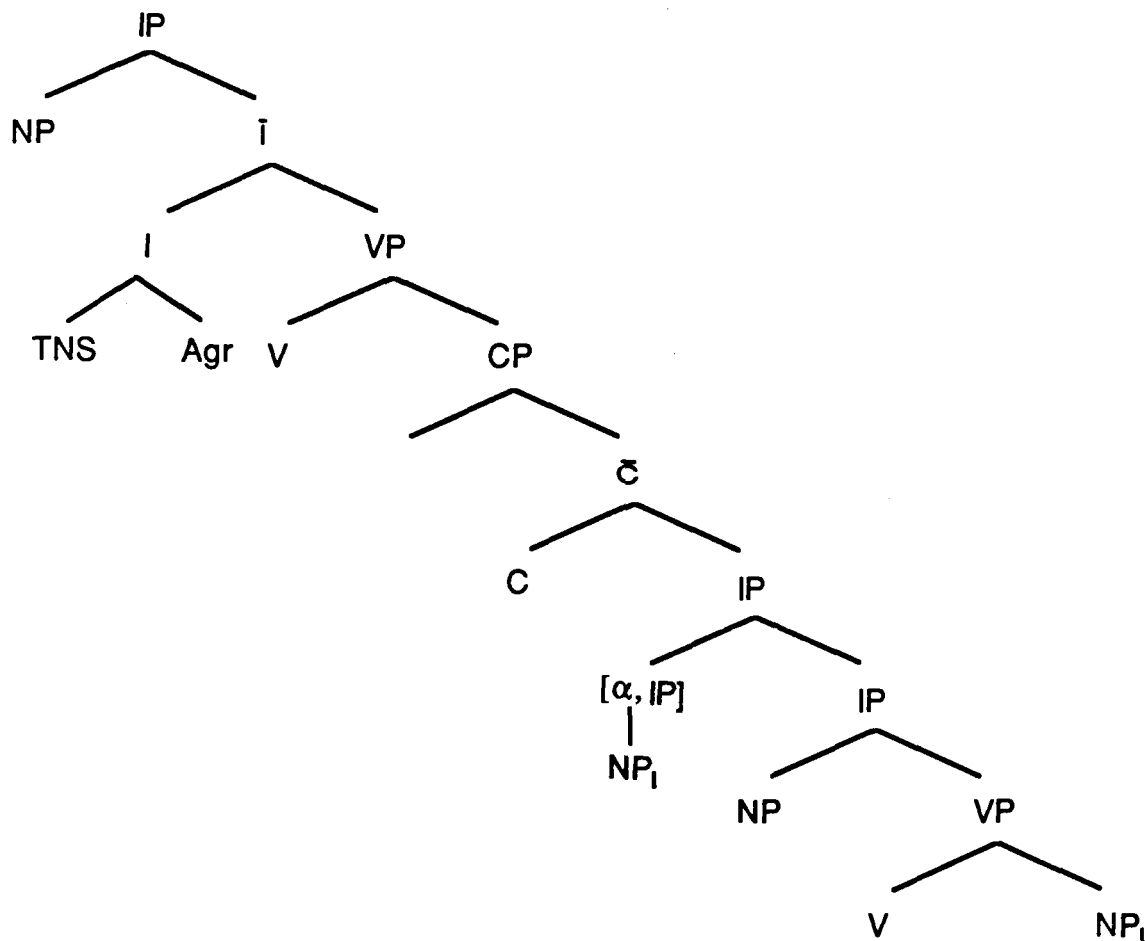
- (1)
- | | | | | | |
|----|-----------------------------------|----------------|---------------|------------------|-------------------|
| a. | nadara | baʔd-u-hum | ʔilaa | baʔd-in | |
| | looked | some-nom-them | to | each other-indef | |
| | "They looked at each other" | | | | |
| b. | nadara | al-qawm-u | baʔd-u-hum | ʔilaa | baʔd-in |
| | looked | the-people-nom | some-nom-them | to | each other-indef. |
| | "The people looked at each other" | | | | |

The second construction involves a single occurrence of the expression baʔd, to which a clitic is optionally attached. (2a) contains the third person plural clitic -him, (2b) lacks a clitic:

- (2)
- | | | | | |
|----|-----------------------------------|----------------|-------|-------------------|
| a. | nadara | al-qawm-u | ʔilaa | ba9d-i-him |
| | looked | the-people-nom | to | each-gen-them |
| | "The people looked at each other" | | | |
| b. | nadara | al-qawm-u | ʔilaa | ba9d-in |
| | looked | the-people-nom | to | each other-indef. |
| | "The people looked at each other" | | | |

ungrammatical if the Ld'd NP is placed to the left of the complementizer. This is in contrast to ECM, where we saw that the ECM'd NP always appears to the left of the complementizer. I proposed the following structure for embedded LD in which the Ld'd NP occurs in the position $[\alpha, IP]$:

(18)



5.4.4 Passivization and Reflexivization

The ECM'd NP can undergo passivization and reflexivization; a Ld'd NP cannot. ECM is shown in (19), where (a) shows a non-ECM'd NP structure, and (b) shows the same structure with an ECM'd subject, (c) shows passivization of (b), and (d) shows reflexivization, (e) and (f) illustrate a case of a passivized and a reflexivized ECM'd NP coindexed with a genitive site, (g) and (h) illustrate a case of a passivized and a reflexivized ECM'd NP coindexed with an object site:

(19)

- a. danan-tu [CP ?anna [IP Hind-an [IP tahlum-u]]]
believed-1sg that Hind-acc dream-3sgf-ind
'I believed that Hind is dreaming'
- b. danan-tu [CP Hind-an [CP ?anna-ha[IP pro [IP tahlum-u]]]
believed-1sg Hind-acc that-cl dream-3sgf-ind
'I believed, as for Hind she is dreaming'
- c. dunnat Hind-un_i [CP t_i [CP ?anna-ha[IP pro [IP tahlumu]]]
believed Hind-nom that-cl dream-3sgf
'Hind was believed, that she was dreaming'
- d. dann-at Hind-un_i [CP nafs-a-ha:_{i/•k} [CP (?anna-ha)[IP pro [IP
believed-3sgf Hind-nom self-acc-her that-cl
tahlum]]]
dream-3sgf
'Hind believes herself that she is dreaming'
- e. dunnat Hind-un_i [CP t_i [CP ?anna [IP sadiq-a-ha: ya-hlumu
believed Hind-nom that friend-acc-her 3sgf-dream
'Hind was believed, that her friend was dreaming'
- f. dann-at Hind-un_i [CP nafs-a-ha:_{i/•k} [CP ?anna [IP sadiq-a-ha: [IP
believed Hind-nom self-acc-her that friend-acc-her
ya-hlumu]]]
3sgm-dream
'Hind believes herself that she is dreaming'
- g. dunnat Hind-un_i [CP t_i [CP ?anna [IP Zayd-an yu-hibbu-ha:]]]
believed Hind-nom that Zayd-acc 3sgm-like-ob cl
'Hind was believed, that Zayd likes her'
- h. ?iṣṭabar-at Hind-un_i [CP nafs-a-ha:_{i/•k} [CP ?anna [IP Zayd-an
considered-3sgf Hind-nom self-acc-her that Zayd-acc
yu-hibbu-ha:]]]
3sgm-like-ob cl
'Hind considered herself that Zayd likes her'

LD is given in (20), where (a) is a structure with a Ld'd subject, (b) shows that the Ld'd NP cannot be passivized, and (c) shows that it cannot be reflexivized, (d) and (e) show the impossibility of passivizing and reflexivizing a Ld'd NP which refers to a genitive site, (f) and (g) show the impossibility of passivizing and reflexivizing a Ld'd NP which refers to an object site:

(20)

- a. ?aʃtaqidu [_{CP} ?anna [_{IP} Zayd-an [_{IP} ya-hlumu]]]
believe that Zayd-acc 3sgm-dream
'I believe that Zayd is dreaming'
- b. *yuʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} t_i [_{IP} ya-hlumu]]]
believed Zayd-nom that 3sgm-dream
'Zayd is believed that he is dreaming'
- c. *yaʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} nafs-a-hu_i [_{IP} ya-hlumu]]]
believe Zayd-nom that self-acc-his 3sgm-dream
'Zayd believes that himself is dreaming'
- d. *yuʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} t_i [_{IP} ya-hlumu sadīq-u-hu]]]
believed Zayd-nom that 3sgm-dream friend-nom-his
'Zayd is believed that his friend is dreaming'
- e. *yaʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} nafs-a-hu_i [_{IP} ya-hlumu sadīq-u-hu]]]
believe Zayd-nom that self-acc-his 3sgm-dream friend-nom-his
'Zayd believes that himself his friend is dreaming'
- f. *yuʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} t_i [_{IP} tu-hibu-hu Hind-un]]]
believed Zayd-nom that 3sgm-like-cl Hind-nom
'Zayd is believed that Hind likes him'
- g. *yaʃtaqadu Zayd-un_i [_{CP} ?anna [_{IP} nafs-a-hu_i [_{IP} tu-hibu-hu Hind-un]]]
believe Zayd-nom that self-acc-his 3sgf-like-ob cl Hind-nom
'Zayd believes that himself Hind likes him'

5.4.5 The Behaviour of Pronominals

ECM structures also differ from LD in that when a pronoun (represented below as *pro*) is ECM'd, i. e. occurs in the position [α , CP], the pronoun must be disjoint in reference with the matrix subject, but when the pronoun is Ld'd, i.e. occurs in the position [α , IP], it may or may not be disjoint in reference with the matrix subject:

(21) **ECM**

- a. danna-hu Zayd-un_{KP_i} [_{CP} **pro**_i [_{CP} ?anna [_{IP} Hind-an tu-hibbu-hu_i]]]
believed-ob cl Zayd-nom that Hind-acc 3sgf-like-ob cl
'Zayd_{KP_i} believed him_i that Hind likes him'

LD

- b. danna Zayd-un_{ki} [_{CP} ?anna-hu [_{IP} pro_i [_{IP} tu-hibbu-hu_i Hind-un]]]
 believe Zayd-nom that-cl 3sgf-like-ob cl Hind-nom
 'Zayd_{ki} believed as for him_i,that Hind likes him_i'

To summarize, as a diagnostic test, I rely on the distinct properties of ECM and LD: while an ECM'd NP appears in a position to the left of the complementizer, a Ld'd NP appears to the right of the complementizer. I designated the position of an ECM'd NP as [α , CP], and the position of a Ld'd NP as [α , IP]. An ECM'd NP can be passivized and reflexivized; a Ld'd NP cannot. An ECM'd pronoun (a pronoun in the position [α , CP] cannot be coindexed with the matrix subject; but, a Ld'd pronoun (a pronoun in the position [α , IP] can be coindexed with the matrix subject.

The facts concerning passivization and reflexivization are accounted for in the following way: the ECM'd NP can be passivized and reflexivized, since the NP is governed by a lexical head, the matrix verb. An ECM'd anaphor is also c-commanded and coindexed with the matrix subject in its minimal domain as required by principle A of the binding theory (cf. 1. 7. 4) chapter (1) for the definition of minimal domain). The Ld'd NP cannot be passivized, nor reflexivized because the anaphor (the NP-trace and the reflexive), being in the IP adjoined position will not be bound in its minimal domain —the domain containing the anaphor and its governor, the complementizer. This violates principle A of the binding theory. The facts concerning the behaviour of pronominals follow from principle B of the binding theory, which requires a pronominal to be free in its minimal domain. This correctly rules out coindexation between the ECM'd pronominal and the matrix subject, and it correctly rules in coindexation between the Ld'd pronominal and the matrix subject, since the two elements do not occur in the same minimal domain.

Having argued that the ECM'd NP occupies a second specifier position of CP, [α , CP], the question arises as to whether the ECM'd NP is moved to this position at S-structure or base-generated in it. In the following section, I argue that, like LD, ECM constructions are base-generated; i.e. no movement rule is involved in their derivation.

5.5 ECM Is not Movement

First, consider the fact that ECM violates the complex NP constraint of Ross (1967), now subsumed under subjacency (Chomsky, 1981):

(22)

- a. ?aʔtaqidu [_{CP} Hindan_i [_{CP} ?anna-hu [_{IP1} wasal [_{NP} ar-rajulu
believe-1sg Hind-acc that-expl cl arrived the-man
[_{CP} allaʔi [_{IP2} yuhibu-ha_i]]]]]
 who 3sgm-like-ob cl
 "I believe of Hind that the man who likes her arrived"
- b. ?adunnu [_{CP} Zaydan_i [_{CP} ?anna-hu [_{IP1} wsalat [_{NP} al-mar?atu
think-1sg Zayd-acc that-expl cl arrived the-woman
[_{CP} allati [_{IP2} tuhibu sadi:qa-hu_i]]]]]
 who 3sgm-like friend-gen cl
 "I think of Zayd that the woman who likes his friend arrived"

In (22), the ECM'd NPs *Hindan* and *Zaydan* are linked to the clitics *-ha* and *-hu* respectively inside a relative clause. The coreferential linkage between the NPs and their Θ -position holds across two barriers (cf. chapter 1 for the definition of barrier), the bottommost CP, NP and IP₁. IP₂ is a BC, making the CP dominating it a barrier. NP is also a barrier since it is not L-marked, thus two barriers are crossed; yet the sentences are grammatical. The sentences will not be predicted to be grammatical, if one assumes that they are derived by movement, since they would violate Subjacency.

In addition, ECM'd NPs can be ECM'd arbitrarily far from their source clause. As seen in (23), the relation between the ECM'd NPs *Hindan* and *Zaydan* and their pronoun can hold across more than one complex NP:

(23)

- a. ?aʕtaqidu [CP Hind-an_i [CP ?anna-hu [IP wasal[_{NP} arrajul-u [CP allaʕi
believed-1sg Hind-acc that-expl cl arrived the-man who
[IP ya-ʕrifu [NP l-ʕa:b-a [CP allaʕi [IP yuhibu-ha_i]]]]]]]]]
know the-guy-acc who 3sgm-like-ob cl
"I believe as for Hind, that the man who knows the guy who likes her
arrived"
- b. ?adunnu [CP Zaydan_i [CP ?anna-hu [IP wsalat [NP al-marʕatu
think-1sg Zayd-acc that-expl cl arrived the-woman
[CP allati [IP qa:balat [NP al-binta [CP allati [IP tuhib sadi:qa-hu_i]]]]]]]]]
who 3sgf-met the-girl who like friend-gen cl
"I think as for Zayd, that the woman who met the girl who likes his friend
arrived"

I thus have evidence that ECM is not an instance of move- α . Rather the ECM'd NP is base-generated in the CP adjoined position. Since this position is an adjoined one, it is an \bar{A} -position. No Θ -role can be assigned to it, since it is structurally inaccessible to Θ -role assignment by the higher verb.

The Principle of Full Interpretation requires every element that appears in a well-formed sentential structure to be interpreted. Now I would like to ask the following question: how does the ECM'd NP, which bears no thematic relation to the verb, which governs it, receive an appropriate interpretation? This I address in the following section.

5.6 Interpretation of the ECM'd NP

I have already stated that the ECM'd NP, base-generated in a $\bar{\Theta}$ -position, must be coreferent with a pronoun in a Θ -position within the embedded clause. The obligatory coreference relation should be clear from the data set under item (8-12), where the obliteration of the pronoun yields ungrammaticality. The presence of a lexical NP instead of a pronoun still gives a bad sentences, as shown by the contrast between (24a) and (24b):

(24)

- a. danan-tu Hind-an_i ?anna Xa:lid-an řinda-ha_i pro_i
believed-1sg Hind-acc that Xa:lid-acc with-cl
"I believed of Hind that Xa:lid is with her"
- b. *danan-tu Hind-an ?anna Xa:lid-an řinda Zayd-in
believed-1sg Hind-acc that Xa:lid-acc with Zayd-gen
**"I believed of Hind that Xaalid is with Zayd"

(24a) is grammatical, since it contains a pronoun coindexed with the ECM'd NP *Hindan*. (24b), however is barred, since a lexical NP (boldfaced) appears instead of a pronoun.

The property of obligatory coindexation could be explained, if I assume the Principle of Full Interpretation, which says that every element must receive an interpretation in some manner, such as by being in a Θ -position or by being an operator binding a trace. Since the ECM'd NP is not in a Θ -position, nor is it a *wh*-operator, and since it must be interpreted, it needs to derive its Θ -reference by coindexation with a pronoun in a Θ -position within the embedded clause. Θ -connectedness appears to be the licensing factor in ECM constructions.

5.7 [α , CP] is a Case position

I shall now show that verbs which subcategorize for sentential complements, assign accusative Case to the NP base-generated in [α , CP]. A (partial) list of verbs which take sentential complements (ECM verbs) is given in (5.3.1) above with some representative sentences embedded under the verb *hasiba* 'think'. What is interesting about the examples in (9–12) is that the NP in [α , CP] is assigned Case by a verb, which is not its object. Put differently, the matrix verb Case-marks an NP which lies outside its Θ -grid, as illustrated in (25):

(25) V NP_{SUBJ} [_{CP} NP_i [_{CP} ?anna [pro_i]]]

Consider what happens in case there is no sentential complement, just an NP object. The verb *samiṣa* 'hear' in (26a) has just an NP object, *Hind-an* to which it assigns accusative Case, signalled as *-an*. In (26b), however, it has a clause which includes an additional specifier position [α , CP] filled by the lexical NP *Hind-an* assigned accusative Case by the particular verb:

(26)

a. *samiṣ-tu* Hind [_{-an}
 heard-1sg Hind -acc
 "I heard Hind"

b. *samiṣ-tu* [_{CP} Hind_i [_{-an}
 heard-1sg Hind_i -*0 [_{CP}?anna *Xa:lid-an qa:bal-a-ha*]]
 that *Xa:lid-acc met-acc-ob cl*
 -acc
 "I heard of Hind that *Xa:lid* met her"

Since Case shows up on the NP *Hind-an* in both sentences in (26), it is clear that the CP node dominating it and separating it from the verb *samiṣa* in (26b), is not a barrier for Case-marking, and hence cannot be a barrier for government, if Case marking takes place under government. This supports the definition of government in terms of exclusion and domination (cf. chapter 1)

I now show that the NP in [α , CP] must receive Case in conformity with Case theory. In (27a), the verb *ṣarifa* 'know' appears in its detransitivized (passive) form. Accusative Case is absorbed by the passive morpheme *tu-* and so cannot be assigned to the object NP. In (27c) the NP *Hind* is adjoined to CP. The sentence is ungrammatical because the verb does not assign Case, yet the NP *Hind* is in a Case position; this constitutes a violation of Case theory. The sentence can be rescued if *Hind* moves to subject position, where it receives nominative Case from INFL, as in (27d):

(27)

- a. ʕurif-at [*Hind-0]
 was known-3sgf [Hind-un]
 Hind-nom
- b. ʕurif ʔanna ʕa:lid-an tazawwaj-a Hind-an
 was known that ʕa:lid-acc married-3sgm Hind-acc
 "It was known that ʕaalid married Hind"
- c. *ʕurif-at_{[CP} Hind_i-0 [_{CP} ʔanna ʕa:lid-an tazawwaj-a-ha_i]]
 was known Hind-FREE that ʕa:lid-acc married-3sgm-ob cl
 "Hind was known that ʕa:lid married her"
- d. ʕurif-at Hind-un_i [_{CP} t_i [_{CP}ʔanna ʕa:lid-an tazawwaj-a-ha
 was known Hind-nom that ʕa:lid-acc married-3sgm-her
 "Hind was known that ʕa:lid married her"

We see, then, the NP in [α , CP] must be assigned Case by V. Under the definition of government outlined in chapter 1, a matrix verb governs its complement, and also the specifier and the head of this complement. Let us propose that while ECM predicates subcategorize IPs as a lexical property, Arabic predicates subcategorize CPs with an additional specifier position [α , CP]. In other words, Arabic ECM verbs map their propositional argument onto a CP complement which then by the EPP require an NP that acts like a subject. Since Case is assigned under government, CP1 in the structure (30b) below should not constitute a barrier to government of NP by V:¹¹ In this view of government and Case-marking, there is nothing exceptional about the Case-marking itself in constructions such as the following:

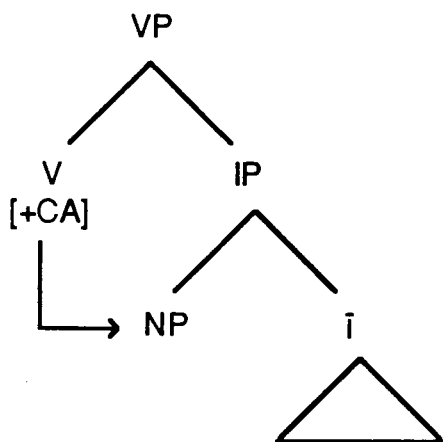
- (28) They consider [_{IP} John to be intelligent]
 (29) danan-tu [_{CP} ʕamr-an [_{CP} ʔanna ʔab-a:-hu ʕakiyy-un]]
 believed-1sg ʕamr-acc that father-acc-his intelligent-nom
 "I believed of ʕamr, that his father is intelligent."

¹¹ In the Barrier framework of Chomsky (1986b) assumed in this study, adjunction to a category α voids the barrierhood of α . (30b) is an adjunction structure where NP is adjoined to CP, thus technically speaking, CP1 in the structure (30b) cannot be a barrier for government of NP by V.

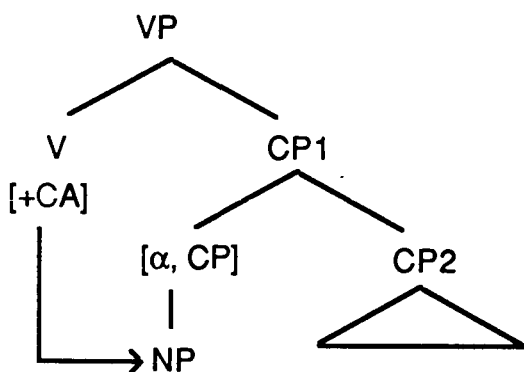
The sub-trees in (30a) and (30b) illustrates: [+CA] = Case assigner, (-> = Case-assignment):

(30)

a. English:



b. Arabic:



The presence of (30b) in Arabic versus its absence in English is a parameter of UG on which the two languages vary. The English setting for the parameter may be unmarked, the Arabic setting marked, in which case Arabic learners need positive evidence to set the value for the parameter away from the unmarked position. Note that the definition of government given in (chapter 1) would allow any number of NPs to be adjoined to CP and they would all be governed by the matrix verb as in (31). This, however, gives an ungrammatical output:

(31)

- a. *ʔaʔtaqidu [_{CP} Hind-an [_{CP} ʔa:lid-an [_{CP} ʔanna-hu yu-hibu-ha]]]
believe Hind-acc ʔa:lid-acc that-cl 3sgm-like-ob cl
"I believe of Hind, of ʔa:lid, he likes her"
- b. *ʔil-tu [_{CP} at-taqri:r-a [_{CP} ʔa:lid-an [_{CP} ʔanna sadi:q-a-hu katab-a-hu]]]
thought-1sg the-report-acc ʔa:lid-acc that friend-acc-his book-acc-his
"I thought of the report, of ʔa:lid that his friend wrote it"

Since the NPs in the CP adjoined positions must be Case-marked and the governing verb has only one Case to assign, such multiple ECM adjunctions are ruled out by Case theory, as illustrated by the unacceptability of the sentences in (31).

It should be recalled that this proposal and Case theory in general is concerned with abstract Case and not morphological Case. There are in fact examples of double morphological Case marking, as in Quechua, Russian (cf. Koopman (1984: 147) and Walpiri (Vergnaud, 1982, chapter 2, footnote 17). Lefebvre and Muysken (1988) argue that "subject to object Raising" construction in Quechua involves double Case-marking. They define this phenomenon as "move CASE" and argue that it does not result in Case clash since only one of the Cases is Θ -related. The rarity of such examples suggests that, in the unmarked Case, morphological Case marking follows from abstract Case marking. (cf. Vergnaud, 1982) for elaborate discussion of this topic.

One prediction made by this analysis is that a category which cannot receive Case should not surface in the CP adjoined position. This turns out to be true, as examples (32a) and (32b) demonstrates: The second CP node together with the complementizer *ʔanna* are suppressed:

(32)

- a. *ʔaʔtaqidu [_{CP} ʔala al-mindadat-i [_{IP} wadaʔ-at Hind-un al-kita:b-a ʔalay-ha]]
believed on the-table-gen put-3sgf Hind-nom the-book on-it
"I believe of, on the table Hind put the book on it"

- b. *ʔatawwaqqafu_{[CP ʔila Baɣda:da} [_{IP} ya-ħahabu Xa:lid-un ʔilay-ha]]
 expect-1sg to Baghdad 3sgm-leave Xa:lid-nom to-it
 "I expect of, to Baghdad Xa:lid will leave for it"

I can account for these facts straightforwardly with Stowell's Case Resistance Principle (CRP). Stowell proposes that a node of a Case-assigning category, i.e., a projection of P, V or AGR may not itself be Case-assigned, and formulates the CRP as follows:

(33) Case Resistance Principle (Stowell, 1981)

Case may not be assigned to a category bearing a Case-assigning feature.

This means that PP, VP and a tensed clause (the latter is the projection of AGR) may not appear in Case-marked positions at S-structure.¹²

Based on the binding theory, I now provide support for the view that the matrix verb governs the ECM'd NP.

5.8 The Binding Domain of the ECM'd NP

I now show that the binding domain for NPs in the CP adjoined position is the matrix IP, thereby further supporting the view that a matrix verb governs the ECM'd NP.

¹² Stowell's evidence for the CRP is as follows. PPs do not appear in the following Case-marked positions. Subject of a sentence with a Case-assigning complementizer:

(1)

*It would be nice for on the counter top to have a nice paint job.

Affixed with /-s/:

(2)

*Paul protested in the park's having been chosen for the rally.

Undergoing *of*-insertion:

(3)

*Paul's shooting of at the bear.

Stowell, however, concedes that PPs occur in the subject position of a copular clause, which is a Case-marked position in the following examples, which he cites on page 225:

(4)

a. Under the stars is a nice place to sleep.

b. Is under the stars a nice place to sleep?

As such, the CRP is not without exceptions in its application to PPs.

In (34a) below, the reflexive pronoun must be bound in the matrix IP. The ungrammaticality of (34b) is due to the gender mismatch between the antecedent and the reflexive:

- (34)
- a. ?iʔtabar-a Zayd-un_i nafs-a-hu_i?anna Hind-an tu-hibu-hu
 consider3sgm Zayd-nom self-acc-him that Hind-acc 3sgf-like obl
 "Zayd considered himself that Hind likes him"
- b. *?iʔtabar-at Hind-un nafs-a-hu ?anna Zayd-an yu-hibu-ha
 considered-3sgf Hind-nom self-acc-him that Zayd-acc 3sgf-like-her
 "Hind considered himself that Zayd likes her"

Now, I turn to the interpretation of the data under discussion with respect to the theory of chains and Case in UG. To account for the Arabic data, I propose that some aspects of the theory need to be modified and expanded upon slightly. The modifications will supplement and reinforce the underlying principles of the GB theory.

5.10 Visibility

Now, I would like to ask two related questions. The first one, which I raised in section (5. 6), concerns how non-thematic NPs (ECM'd, Ld'd, topicalized and Wh-questioned NP's) are interpreted, since the position in which they appear is not assigned a Θ -role. The other question is why do the NP's in question require Case, since in the Case and chain theories of Chomsky (1981, 1986a,) and Stowell (1981) chains are formed on A-positions and the Case Filter applies only to such chains as a requirement on the visibility of Θ -roles. This is because, it is generally assumed that only A-chains include Θ -positions.

Chomsky proposes principle (35) for Case-assignment and the Case Filter as in (36):

(37)

The chain $C = (\alpha_1, \dots, \alpha_n)$ has the Case K iff for some i , α_i occupies a position assigned K by β

(38) Every lexical NP is an element of a chain with Case.

Θ -role assignment is determined by the principle (43):

(39)

Suppose that the position P is marked with the Θ -role R and $C = (\alpha_1, \dots, \alpha_n)$ is a chain, then C is assigned R by P iff for some i , α_i is in an A-position P and C has Case or is headed by PRO.

There are two basic assumptions underlying the Case and chain theory outlined above. The first one is that the Case Filter (38) applies only to A-chains (cf. also Stowell, 1981) due to visibility requirements since these are chains which will be visible for Θ -role assignment in the LF component. Thus, the Case Filter is derived from the visibility hypothesis.¹³ The visibility hypothesis is the assumption that A-chains are invisible to Θ -role assignment unless they bear the feature of Case, or are headed by the phonologically empty element PRO.

Chomsky (1986a: 94) puts the notion of visibility as follows: an NP "can receive a Θ -role if it is in a position to which Case is assigned or is linked to such a position" as in the following where the non-Case-marked NP *man* is linked to the Case marked expletive *there* :

(40) $There_i$ is a man_i in the room.

The linked elements of the expletive-argument pair (*there*, *a man*) behave in the manner of a chain with respect to the Visibility condition and other aspects as well. The first member is in a Case-marked position and the final member is in a theta-position. The Case is transferred from the first member to the final

¹³ Notice that PRO is a problem for the visibility hypothesis since it is made visible by stipulation. The definition in (39) encompasses an unnatural disjunction between the feature of Case and PRO.

element which is now visible for Θ -marking, as in the case of a chain. The expletive argument pair then has the properties of chains with respect to Case theory, theta-theory and the binding theory. The head of the chain is Case-marked, the chain terminates in a Θ -position, and the expletive *there* binds the argument *man*.¹⁴

In terms of this theory, the visibility hypothesis subsumes the Case Filter, which is now viewed as a condition on the assignment of Θ -roles at LF. An argument must have Case, otherwise it will not be receive a Θ -role and will not be licensed. Thus, the Case Filter follows from the Visibility Condition. Notice that this crucially entails that the Case Filter holds for A-chains only since \bar{A} -chains are never in a context of Θ -role assignment.

The constructions discussed in this study indicate that the visibility hypothesis in the strong sense - i.e. where the Case Filter is entirely derivable from the Θ -Criterion cannot be maintained. I have shown previously that ECM'd NP's which are not in Θ -chains do in fact require Case-marking. The same holds for Ld'd and topicalized NPs. These NP's are in \bar{A} -adjoined positions to which no Θ -role is assigned. Furthermore; there are cases of ECM and LD, to be discussed below in section (5. 12), where the ECM'd NP and the

¹⁴ As noted by Chomsky, such a chain violates principle (C) of the binding theory, since it involves binding of an R-expression a man by there in an A-position. Thus such a chain in which the argument is not the head of the chain, and in which the argument is A-bound by a non-argument has to be treated in a special way. Notice that expletive-argument pair chains also violate principle (B) of the binding theory, since pronouns should be A-free in their governing category.

One could also imagine a case where principle (A) would be violated, in case the initial element is an anaphoric trace (NP-trace) that is assigned a Θ -role. This gives rise to an argument anaphor bound by a non-argument head.

There are at least two ways to circumvent the effects of the binding theory. One is to stipulate that binding of an argument by an expletive does not fall under the binding theory. The other way is to argue that principle (C) should be eliminated, or to assume that principle (C) does not apply to expletive argument chains, and thus a violation of principle C is avoided. But then the same assumption and similar arguments would have to be made for principles (A) and (B).

Ld'd NP are not even coindexed with a Θ -position. Yet, these NPs must be Case-marked.

In all explications of Case and chain theories, \bar{A} -adjoined positions do not form an A-chain with a Θ -position. So by the theory above, these NPs should not need to be assigned Case, but they do, as I argued above. I take this false prediction to be a flaw in this theory, and conclude that since the Case Filter (38) is not directly related to the Θ -Criterion, the strong visibility hypothesis must be dispensed with.

In the next chapter, I will suggest an extension of the visibility hypothesis from being a condition on Θ -role assignment to a broader condition on all aspects of LF interpretation.

Now, I present an account by Massam (1985) of ECM and LD constructions. First, I simply state her account of these structures, and in section (5. 11. 2) and (5. 12), I argue that it is insufficiently general as it cannot account for Arabic.

5.11 Massam's Account

5.11.1 $[\alpha, CP]$ ¹⁵ is a Projected Subject Position

Massam (1985) presents a cross-linguistic analysis of ECM and LD structures. Following Haik (1985), and Taraldsen (1983), Massam assumes that the site of the ECM'd NP $[\alpha, CP]$ is a projected subject position of a CP predicate, and that it is required by the Extended Projection Principle of Chomsky (1982) and Rothstein (1983).¹⁶ The EPP requires that all subject and

¹⁵ Massam uses the term [SPEC2, CP] to refer to this position, a term I refrain from using since the term specifier can also refer to an A-position. For Massam "[SPEC2, CP]" is an A-position and an \bar{A} -position--with properties of both. I consider it a strictly \bar{A} -position since it is an adjoined position.

¹⁶ cf. also Al-Bayaty (1984) for a similar suggestion. In that work I suggested that Case assigning epistemic verbs in Arabic subcategorize for \bar{s} predicates, and that these predicates require subjects. The subject of the \bar{s} predicate is in an \bar{A} -position external to \bar{s} , and is dominated by the node S-double bar. Assuming a definition of government as in Rizzi and Belletti (1981), the subject is governed and assigned Case by the matrix verb.

complement positions be present at all levels of the grammar. In this way, Massam claims, an ECM'd position is different from a Ld'd position, which can either be $[\alpha, CP]$, or $[\alpha, IP]$ in Arabic; the former is projected and the latter is derived by adjunction (Massam, 1985: 135). A Ld'd position is not considered a subject of predication.

In Massam's analysis of string non-vacuous ECM constructions in Principally Fijian and Niuean, the position of the ECM'd NP is considered an ambiguous position with properties of both A and \bar{A} -positions: "this position is an \bar{A} -position, since no Θ -role is ever assigned to it" (Massam, 1985:99-100). Nevertheless; it must be Case-marked by the governing verb; hence it behaves like an A-position. Since the ECM'd NP is a subject of a CP predicate, it requires Case, in the same way as an argument, for purposes of Visibility at LF. Since no Θ -role is assigned to this subject, in order for it to be interpreted and thus satisfy the Θ -Criterion, it must be coindexed with a Θ -bearing chain in the embedded clause, forming a composed chain (see below)

5.11.2 Chain Composition

Massam also claims that ECM, Topicalization and LD structures differ in another crucial way. Projected positions, i.e.; positions which are present by virtue of the Projection Principle, such as ECM'd positions, are interpreted at LF according to Θ -licensing, whereas; positions which are not projected, such as topicalized and Ld'd positions, are not interpreted at LF, but in some other way. Massam does not say how, nor where this interpretation takes place, presumably outside sentence grammar. An element in a projected position can be Θ -licensed either by being in a Θ -position, or by forming a composed chain (association with a Θ -position by coindexing). Note that chain composition takes place at LF to license projected subject positions only, which include

ECM'd positions, but not Ld'd nor topicalized positions, since the latter two, under Massam's analysis, arise through adjunction (Massam:142-43).

Massam suggests that while an ECM'd NP must have Case assigned to it by the governing verb, Ld'd and topicalized NPs are not assigned Case. In Arabic all these NPs must be Case-marked, as we saw above. I suggested that there are various mechanisms available for NPs by which they receive Case: directly under government by a head, by inheritance or by default.

As explained above, Massam assumes that while the ECM'd NP, being in a projected subject position, is interpreted according to Θ -licensing, the Ld'd NP is not in a projected subject position and, therefore, must be interpreted differently. She does not discuss how this interpretation takes place.

If the ECM'd NP is a subject of predication, then there is no reason why a Ld'd NP in Arabic should not be considered a subject of predication since the two are identical, at least apparently, with respect to the notion of predication that Massam appeals to. Massam (p.c.) assumes that ECM structures differ from LD structures in that only the former are lexically selected. She assumes that ECM verbs take predicates as arguments, and that these predicates must then have subjects by the Extended Projection Principle. Since LD structures are not lexically selected, they are not predicate/subject structures. However; in Arabic both ECM and LD structures are lexically selected. Verbs of cognition and volition, which are Case assigners, take ECM structures. LD structures are selected by the accusative Case assigning complementizers *?inna,?anna, la:kinna ...*, which can appear in main and embedded contexts. The Ld'd NP in Arabic is followed by an IP predicate in the same way as an ECM'd NP is followed by a CP predicate. The different behaviour of the NPs in question with respect to undergoing "object referring rules", passivization and reflexivization

are derivable from the structural configuration, government and the binding theory (cf. section 5. 4. 5 above).

In the following section, I will argue for an approach, which unifies both ECM and LD with respect to licensing. This is an extension of the predication approach suggested in chapter 3 to account for the coreference relation between the Ld'd NP in matrix and embedded clauses and its Θ -pronoun.

5.12 Predication

I consider the positions of both an ECM'd NP and a Ld'd NP to be \bar{A} -positions, since they are adjoined positions to which a Θ -role is never assigned. Following an idea originally suggested by Al-Bayaty (1984), I consider that *?inna* type complementizers subcategorize for an IP predicate, which requires a subject. The subject is the Ld'd NP, which is governed and assigned Case by the complementizer. Both NPs appearing in these positions are \bar{A} -subjects interpreted at LF by "predication": relative to the CP and IP predicates respectively. This notion of predication is an "aboutness relation" - the CP and IP constituents are propositions about the NP's in question, and contain an element, not necessarily a pronoun, in a Θ -position.¹⁷ It subsumes the cases discussed above involving coindexation between the NP in the position [α , XP] and an embedded pronoun (Θ -indexing), and cases of true "aboutness" (such as the ones noted in footnote 18) in which such coindexing

¹⁷ The following cases of LD do not contain a pronoun to be coindexed with the Ld'd NP:

- (1)
- | | | | | | | |
|----|--|-------|------------|--------------|----|--|
| a. | ?amaa | misra | ya-fiidu | ?an-niil-u | f | s-sayf-i |
| | regarding | Egypt | 3sgm-flood | the-nile-nom | in | the-summer |
| | "Regarding Egypt, the Nile floods in the summer" | | | | | |
| b. | As for the Θ -Criterion, the sentence is grammatical. | | | | | |
| c. | As for David, I hope Teresa would like the new apartment. | | | | | (where David and Teresa are close associates, viz. husband and wife) |
| d. | As for fish, I think judge Buller is crazy. | | | | | |

On the notion of "aboutness relation" cf. Reinhart, (1982) and Saito, (1985) who, citing Kuno, (1973), suggests that topics in Japanese receive an interpretation by virtue of this relation. See also Chomsky (1977).

relation does not seem to be required. More examples of true aboutness are given in (41):

(41)

- a. As for the weather, I don't think I'll need my umbrella today.
- b. As for my new glasses, I need to visit the optometrist today.
- c. As for my broken ankle, I just got the bill from the hospital today.

Cases of ECM involving an aboutness relation; i.e., cases where the ECM'd NP is not coreferent with a Θ -chain, are available in Iraqi Arabic, and are given in (42) below. Recall that, according to Massam's analysis of ECM, the ECM'd NP must be coindexed with a Θ -chain for Θ -licensing. Given the type of data she analyzes from Fijian and Niuean, this appears to be the case. Massam (p.c.) has expressed doubt as to whether, upon further investigation of ECM in these languages, the above coindexation requirement would hold. It does not hold in Iraqi Arabic, as evidenced by the data in (42) and (44) below:

(42)

?a-rid	Ali Muna _k	t _k -duuj	ʔidma Hasan _m	y _m -hchi	wiyya
1sg-want	Ali Muna	3sgf-upset	when Hasan	3sgm-speak	with

?um-ha_{k/i}
mother-her

"I want of Ali, that Muna_k would be upset, when Hasan speaks to her_{k/i} mother"

In (42) the NP *Ali* is ECM'd by the verb *?a-rid* of the matrix clause. The sentence in (42) demonstrates that the pronoun denoted by the third person feminine clitic *-ha* can only be coindexed with the NP *Muna* or with another feminine individual, but never with the ECM'd NP *Ali*, since the pronoun is feminine and the ECM'd NP is masculine. The sentence will be ungrammatical if the pronoun and the NP *Ali* bear the same index:

(43) *?a-rid Ali_i Muna t-duuj ʔidma Hasan y-hchi wiyya ?um-ha_i

consider also the ECM structures in (44):

(44)

a. ?a-rid Ali Muna t-itzawwaj Hasan
1sg-want Ali Muna 3sgf-marry Hasan
"I want of Ali, that Muna would marry Hasan"

b. ?a-rid Ali_i Hasan_k y-ftaqid Muna int-at ?umm-a_{i/k/m} dulaar
1sg-want Ali Hasan 3sgm-believe Muna gave-3sgf mother-genc1 dollar
"I want of Ali_i, that Hasan would believe that Muna gave his_{i/k/m} mother a dollar"

In none of the sentences above is the ECM'd NP licensed by being coindexed with a Θ -chain. In (44a) the ECM'd NP is not coindexed with a chain which contains a Θ -position since a full NP instead of a pronoun appears in an A-position in the embedded clause. (44b) shows that the ECM'd NP *Ali* need not be coindexed with the embedded pronoun. The pronoun can be coreferent with the ECM'd NP *Ali*, or with the subject *Hasan*, or with a third individual determined in discourse.

Similarly, LD does not require that the Ld'd NP be coindexed with a Θ -position as shown by (45), where a lexical NP appears in the embedded clause instead of a pronoun:

(45)

a. simaʔ-it (?inna) Ali Muna t-zawwajat Hasan
heard-1sg that Ali Muna 3sgf-married Hasan
"I heard that as for Ali, Muna married Hasan"

b. ?a-din (?inna) Ali Muna t-hib Hasan
1sg-believed that Ali Muna 3sgf-like Hasan
"I heard that as for Ali, Muna likes Hasan"

Admittedly, cases where the ECM'd NP/Ld'd NP is coindexed with a Θ -pronoun, such as (8-12) above are interpreted in a straightforward manner. Cases like (44-45) where no coindexation occurs might appear difficult to interpret since the nature of lexical NPs do not lend themselves so easily to this type of interpretation. Placed into an appropriate context, though (e.g. where *Ali* knows or is related to *Muna* or *Hasan*), the sentence becomes perfectly acceptable.

In such cases the ECM'd NP is not in a chain which is assigned a Θ -role. Furthermore; the ECM'd NP does not constitute a chain which itself includes a Θ -position, since no Θ -role can be assigned to the position [α , CP]. Also, these cases do not involve what might be considered an ellipted NP or the familiar "part-whole" relations to be given below, i.e. where one NP is part of the other which is a whole as in the English form "I want that as for the house, Ali should paint the kitchen for you today". How does the ECM'd NP receive licensing ? Obviously, for such cases, I cannot say that it is licensed by a chain composition (Θ -indexing).

Pursuant to the above discussion, I assume the Principle of Full Interpretation (FI) which requires every element of PF and LF be interpreted. Every element in a syntactic string must be licensed so that at LF or PF all elements can be identified for construal. If all elements in a representation have been licensed for identification in accord with FI, then full licensing has occurred. An element α can satisfy the PFI by being either an argument or the trace of an argument in an A-chain with a Θ -role as in (46):

(46)

- a. John_i seems [t_i to be sick]
- b. John_i was hit t_i
- c. John is sick

or by Θ -indexing, i.e. by being coindexed with a Θ -chain as in the LD constructions examined in (chapter3), and ECM constructions in (8-12) above, or by an "aboutness relation" with the rest of the sentence as in (41, 42, 44-45), or by being in a part-whole relation as in (47), and as in the Japanese sentences in (48) ¹⁸:

¹⁸ I am grateful to Bruce Bagemihl for his help with the English data, and to Mamiko Toji for the Japanese data.

(47)

- a. As for the desert, I should find a good recipe for chocolate cake.
- b. As for the plants, I'm going to get a new hanging pot.
- c. As for the laundry, I want to buy some detergent.

(48) wa is a topic marker

- a. watashi wa sashimi wa maguro ga oishii to omimoasu
I raw fish tuna nom delicious that think
"I think that as for sashimi (raw fish), tuna is the most delicious"
- b. watashi wa bankuubah wa sushi ga oishii to kiiteimasu
I Vancouver sushi nom delicious that heard
"I heard that as for Vancouver, sushi is delicious"
- c. so no kohsu wa anata no sensei ni hanasu bekidesu
the course you your teacher to talk should
"As for the course, you'll have to talk to your teacher"

If α is a predicate it must assign a Θ -role, if it is an operator it must bind a variable (cf. Chomsky, 1986: 101).

To summarize, I tried to show that Arabic exhibits a productive use of \bar{A} -sentence-internal base-generated adjunction sites. CP adjunction sites, I have argued, are the locus of NPs ECM'd under government by verbs to which they bear no thematic relation. IP adjunction sites are the regular locus of Ld'd NP's from which they are governed and assigned Case by COMP. I provided supporting evidence that Case can be assigned to the specifier position of CP and IP. I argued against the visibility hypothesis, and concluded that the Case Filter is not directly connected to the Θ -Criterion; thus non-reducible to it. I suggested that non-thematic NP's in the position [α , XP] are interpreted at LF non-thematically by predication. This includes an "aboutness relation" with the rest of the sentence and Θ -indexing, the latter being a species of the "aboutness relation".

In the remainder of this chapter I will discuss another construction in Arabic, in which an NP appears in a $\bar{\Theta}$ -position, that of subject, deriving its Θ -reference by coindexation with an embedded Θ -position.

5.13 Non-thematic Subject Constructions

In this section I discuss constructions with non-thematic subjects. I begin with a brief discussion of the familiar cases of Raising-to-Subject in English. Then, I examine Arabic non-thematic subject positions. It is seen that they have different properties from those of English Raising-to-Subject constructions. The properties are, however, identical to those of the Arabic ECM constructions. The sole difference being that the latter involve Case-marking verbs, whereas, the non-thematic subject constructions, involve non-Case-marking verbs. I analyze these constructions as involving movement from the \bar{A} -position [α , CP] to an A-position, that of subject.

The following section briefly discusses the well-known cases of Raising-to-Subject in English.

5.13.1 Non-thematic Subjects Via Raising

A fundamental asymmetry exists between subjects (i.e. sisters of I') and complements (i.e. sisters of V). A verb (or VP) does not subcategorize for a subject as it does for an object. The Projection principle rules out non-thematic objects, and requires them to be present at all relevant levels, but it does not rule out non-thematic subjects, nor does it require thematic subjects to be present. Rather, the apparent obligatory presence of the subject position is made to follow from other considerations, from the Extended Projection Principle (EPP) of Chomsky (1981).¹⁹ The EPP requires every predicate to have a structural subject for purposes of predication at LF -- a requirement on predicates that they must be predicated of something.

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.

¹⁹ Rothstein (1983) deduces the effects of the EPP from predication.

The result is the possibility of non-thematic subject position in clauses with verbs with no external argument.²⁰ This means that non-arguments may appear in subject positions of verbs which do not (directly or indirectly) determine a subject Θ -role, and that movement into such subject positions is possible, as the sentences in (49) illustrate for raising predicates and verbs with passive morphology:

(49)

- a. It seems that John is happy.
- b. There were several friends at the party.
- c. It is believed that John is happy.
- d. John seems to be happy.
- e. several people were at the party.
- f. John is believed to be happy.

We saw in reference to *wh*-movement that movement from a Θ -position to a $\bar{\Theta}$ -position is permitted by the Θ -Criterion, I should expect it to be allowed to $\bar{\Theta}$ -subject positions as well. This is verified in (49d-f). The result is the process of Raising-to-subject.²¹

Verbs such as *seem*, *appear*, etc. are considered to have a lexical entry with a single propositional argument, which appears as an internal argument at D-structure:

(50) [_{IP} [_{VP} seem [_{CP} (that) John was hit on the head]]]

The structure above is rendered grammatical by the insertion of the expletive element *it* :

(51) [It [seems [(that) John was hit on the head]]]

²⁰ cf. Williams (1980, 1981) and Travis and Williams (1982) regarding external and internal arguments.

²¹ For more detailed discussions of Raising-to-subject constructions, see M. Anderson (1979) and Chomsky (1986b).

Another option for verbs such as *seem* is to appear with an IP internal argument, rather than a CP:

(52) [_{IP} [_{VP} seem [_{IP} John was hit on the head]]]

Due to the Case Filter, a derivation by "it-insertion" is not available for (56), since the embedded subject would not receive Case in its clause. As with passive objects, the particular NP needs to move to matrix subject position to receive Case from INFL, as in (49). When the embedded complement is IP, this movement does not violate Subjacency, nor does the relation between the raised NP and its trace violate the binding theory; hence this movement results in a well-formed chain.

In Arabic, we find non-thematic subject constructions with different properties than the familiar English Raising-to-Subject constructions. I turn to these now.

5.13.2 Non-thematic Subjects in Arabic

At the outset of this chapter, I examined the phenomenon of non-arguments acting grammatically in ways corresponding to that of objects, or internal arguments. In this section, I look at a similar phenomenon, that of non-arguments acting grammatically in ways corresponding to subjects, or external arguments.

Arabic has raising predicates (i.e. predicates which have a clausal complement and a $\bar{\Theta}$ -subject). These predicates include: *dahara* 'to seem', *bada:* 'to appear', *tabayyana* 'to appear', *tara:?a:* 'to appear'. It is uncertain though as to whether actual movement has taken place since, in most cases a clitic, and *pro* appear in an imbedded Θ -position. Nevertheless, I refer to this construction as Raising-to-Subject and claim that it arises through movement.

I argue in section (5. 14) that movement to subject appears to involve movement from a position adjoined to CP [α , CP].

Non-thematic subjects in Arabic can be coreferential with subjects or objects of embedded tensed complement clauses, as illustrated in (53-57) below. (a) sentence shows the sentence before Raising; (b) illustrates the same sentence after Raising. The NP that has undergone Raising appears in boldface in the matrix subject position, and is coindexed with a Θ -position in the embedded sentence:

Raising from subject position:

(53)

- a. yabdu ?anna **Xa:lid-an** ?akal-a rax:f-a l-Xubz-i
 seem-it that **Xa:lid-acc** ate-3sgm loaf-acc the-bread-gen
 "It seems that **Xa:lid** has eaten the loaf of bread"
- b. yabdu **Xa:lid-un_i** ?anna-hu ?akal-a_i rax:f-a l-Xubz-i
 seem **Xa:lid-nom** that-cl ate-3sgm loaf-acc the-bread-gen
 "**Xa:lid** seems to have eaten the loaf of bread.

Raising from object position of a verb:

(54)

- a. tabayyana ?anna **Xa:lid-an** qa:bal-a al-?ami:rat-a
 appeared that **Xa:lid-acc** met-3sgm the-princess-acc
 "It appeared that **Xaalid** has met the princess"
- b. tabayyana-t al-?amiirat-u_i ?anna **Xa:lid-an** qa:bal-a-ha_i
 appeared-3sgf the-princess-nom that **Xa:lid-acc** met-3sgm-obj cl
 "The princess appeared that **Xa:lid** has met her"

Raising from object position of a preposition:

(55)

- a. yadharu ?anna ar-rajul-a ?aft-aa al-hadiyyat-a li-l-walad-i
 look like that the-man-acc gave-3sgm the-present-acc to-the-boy-gen
 "It looks like that the man gave the present to the boy"

- b. ya-dharu l-walad-u_i ?anna ar-rajul-a ?afta: al-hadiyyat-a la-hu_i
 3sgm-look like the-boy-nom that the-man-acc gave the-present-acc to obj cl
 "The boy looks like that the man gave the present to him"

Raising from an indirect object position:

(56)

- a. yatra: ?a: ?anna ar-rajul-a ?aft-a: l-bint-a al-hadiyyat-a
 seem that the-man-acc gave-3sgm the girl-acc the present
 "It seems that the man gave the girl the present"

b.ta-tra:ʔa: **al-bint-u**_i ʔanna ar-rajul ʔaʔta:-ha_i al hadiyyat-a
 3sgf-seem the-girl-nom that the-man gave-him the-present-acc
 "The girl seems that the man gave her the present"

Raising of possessors:

(57)

a. yadharu ʔanna ʔa:lid-an qaraʔa kita:b-a al-mudarris-i
 look like that ʔa:lid-acc read book-acc the-teacher-gen
 "It looks like that ʔa:lid read the teacher's book"

b. yadharu **al-mudarris-u**_i ʔanna ʔa:lid-un qaraʔa kita:b-a-hu_i
 look like the-teacher-nom that ʔa:lid-nom read book-acc-his
 "The teacher looks as though ʔa:lid has read his book"

There are three features to notice about the data given above. The first one is that the raised NP must bear nominative Case indicated by *-un*, or *-u* regardless of the Case assigned to the position with which it is coindexed. The raised NP in (55b) is coindexed with a position to which the preposition *li-* "to" would assign genitive Case. That the preposition assigns genitive Case is clearly shown in (55a) where the lexical NP *l-waladid* "the boy" within the PP is assigned genitive Case. The PP is given in (58). The genitive Case which surfaces as *-i* is boldfaced:

(58) li-l-walad-**i**
 to-the-boy-gen

(55b) becomes ungrammatical if the raised NP appears with genitive Case instead of nominative, as shown in (59):

(59) *ya-dharu l-walad-**i** ʔanna ar-rajul-a ʔaʔta: al-hadiyyat-a la-hu
 gen

The second feature is that the matrix verb must agree with the pertinent NP in terms of the features person, number and gender. Thus (54b) in which the NP *ʔal-ʔamiirat-u* "the princess" is raised, becomes ungrammatical if the third person singular feminine suffix *-t*, glossed as 3sgf, is replaced by the zero suffix 0 of the third person singular masculine. This is illustrated in (60):

(60) *tabayyana- 0 al-ʔamiirat-u ʔanna ʔa:lid-an qa:bal-a-ha
 3sgm

The third feature exhibited by the above data is that the raised NP is obligatorily coindexed (i.e. marked as coreferential) with a Θ -pronoun *pro* in the embedded clause.²² *pro* in turn is coindexed with a clitic denoting its nominal features under government along the lines of the discussion on *pro* licensing in chapter 3. A sentence like (54b) will be rendered ungrammatical if the NP and its pronoun are assigned different indices (61a), or if there is a feature mismatch between them (61b). Again the raised NP is boldfaced. The clitic *-hu* in (61b) is the realization of the features third person singular masculine, which conflict with that of the raised NP *al-?amiirat-u* in the gender feature, *al-?amiirat-u* being feminine:

- (61)
- a. * tabayyana-t **al-?ami:rat-u_i** ?anna Xa:lid-an qa:bal-a-ha_k
- b. * tabayyana-t **al-?ami:rat-u** ?anna Xa:lid-an qa:bal-a-hu

In the following section, I consider the appropriate derivation of the data illustrating non-thematic subjects in Arabic. Our claim is that they are derived by NP-movement from a base-generated position [α , CP], a position adjoined to CP under a non-Case-assigning verb to the subject position of the matrix VP.

5. 14 Movement from [α , CP] Position

There are at least two possible analyses of the data above illustrating non-thematic subjects in Arabic. One is a base-generation analysis which considers the non-thematic subject NP to be base-generated in the matrix subject position. According to this analysis, then, the construction involves a coindexing relation that is not established by movement between a base-

²² Although I have not written the pronoun *pro* in the sentences (57-60), I assume its existence to follow from the Projection Principle and the Θ -Criterion. On *pro* in complement positions, its government and its identification see section (3.2.2) of chapter 3 above and Al-Bayaty (1989) among others.

generated subject NP and an embedded Θ -position. This analysis seems plausible given the fact that a clitic coindexed with the matrix subject necessarily appears in the embedded clauses, which suggests that movement is not involved. Furthermore, if the construction results by movement (specifically A-movement), the moved NP would be assigned two Cases: one from its D-structure A-position as a complement of a head, and the other from its S-structure A-position as it will be governed by INFL. This produces a chain with two Cases in violation of Case theory. Thus Case theory argues against an analysis by movement and for an analysis by base-generation.

However, one can suggest an alternative analysis, and I do, whereby the subject NP moves from a base-generated position adjoined to CP to the matrix subject position. Let us call this position $[\alpha, CP]$, a position of adjunction through base-generation. I propose that raising predicates in Arabic can subcategorize for a CP predicate complement, and hence for a complement with an adjoined $[\alpha, CP]$ position. This is like English raising predicates. They can map their propositional argument onto a complete clause, namely IP. Or, they can map it onto a CP which then by the EPP require the non-argument *it* as a subject. $[\alpha, CP]$ is the D-structure position of the non-thematic subject embedded under non-Case-assigning raising verbs, which also lack the property of marking their subject for a Θ -role. But since this class of verbs do not assign Case, and since the subject NP in $[\alpha, CP]$ needs Case, NP-movement is forced by the Case Filter from $[\alpha, CP]$ to the matrix subject position, where the NP is assigned Case by INFL at S-structure. Then, a process, essentially like Raising-to-Subject converts the D-structure in (62a) to the S-structure in (62b):

(62)

- a. [[[α, CP] NP [... clitic ...]]]
b. [NP_i ... [[α, CP] t_i [... clitic ...]]]

That is, I consider movement to subject verbs in Arabic to be identical in their subcategorization for complements to the Arabic ECM verbs. As a lexical property, both can map their propositional argument onto a CP complement which by the EPP require an NP for purposes of predication at LF. They differ only in that Raising-to-subject verbs do not assign Case to their complement, and also do not assign a Θ-role to their subject. Our claim that movement to subject in Arabic occurs from an adjoined position [α, CP] is supported by sentences with passivized ECM verbs (cf. Massam, 1985, and 5.4.4 above). Here, "ECM" refers to the ability of the verb to take a CP complement which includes an additional position [α, CP] arising from adjunction through base-generation, and not to the verb's Case-marking ability, since as a passive morphology, it has none. It should be recalled that I proposed that clauses embedded under ECM verbs in Arabic are CPs to which the position [α, CP] is adjoined by base-generation. As noted in (5.4) an NP in [α, CP] of a passive verb can move from [α, CP] to the subject position of the passive ECM verb, as (63-64) illustrates. (63) shows the active form, and (64) shows the passive form:

(63) danan-tu [CP Hasan-an [CP ?annahu [IP kataba al-taqri:ra]]]
believed-I Hasan-acc that wrote the-report
"I believed Hasan, that he wrote the report"

(64)

dunna Hasan-un_i [CP t_i [CP ?annahu [IP kataba al-taqri:ra]]]
is believed Hasan-nom that wrote the-report
"Hasan was believed that he wrote the report"

ECM movement illustrated in (64) is identical to subject movement illustrated in (62b) and both occur for the same reason: the NP in [α, CP] needs Case which it can only get in the subject position of the matrix verb.

It should be noted that the proposed movement of the NP from \bar{A} -position [α , CP] to the matrix subject A-position raises questions regarding the status of NP-trace as an anaphor in a Θ -position. Also the resulting chain is not assigned a Θ -role violating the requirement of the Θ -Criterion that every A-chain must be assigned a Θ -role. This violation can be avoided if this requirement is relaxed and subsumed under the Principle of Full Interpretation (FI) on the basis that a chain with no Θ -role directly assigned to it must be coindexed with a chain with a Θ -role. FI is satisfied in passivized ECM and movement to subject. The chain being formed is an A-chain defined as a chain whose head is in an A-position. The head of the chain -- that is, the non-thematic subject NP is related via its terminus [α , CP] to a Θ -position in the lower clause. The terminus of the chain is an intermediate position which exists in D-structure. It is embedded under a non-Case-marking verb in passivized ECM and non- Θ -subject constructions. The theory of chains will be discussed further in the next section and in the chapter. I assume that the relation between the NP and its modifying clause is one of predication and that this is formalized by coindexation between the NP, [α , CP] and the embedded Θ -position, which is the result of an interpretive rule of LF'.

I conclude this section noting that Arabic seems to allow movement to subject from the position [α , CP] in both passivized ECM and non-thematic subject constructions.

5. 15 'Seem as If' Constructions

Now, I will examine comparable sentences in English in which the complement clauses of *seem* and *appear* are introduced by the complementizers *as if*, *as though* and *like*. These structures lend further support for the proposal that the Θ -Criterion be relaxed to allow subject NPs to

appear in non-thematic positions in D-structure. There is a class of verbs or predicates that do not assign a thematic role to their subjects in English. These are predicates that take the semantically empty expletive *it* as their subject:

(65)

- a. It seems [_{CP} that [_{IP} John has been chasing Mary]]
- b. It appears [_{CP} that [_{IP} there has been a riot]]
- c. It is likely [_{CP} that [_{IP} Mary has been chased]]

In all these cases the NP that occurs as the subject of the complement clause can appear in the matrix subject position, as attested in 'seems to be' constructions examined in section (5. 13. 1) above and in the following:

(66)

- a. John_i seems [_{IP} t_i to have been chasing Mary]
- b. There_i appears [_{IP} t_i to have been a riot]
- c. Mary_i is likely [_{IP} t_i to have been chased]

This is because the matrix subject position is not assigned a Θ -role, i.e. it does not fulfill any semantic role of its own with respect to the matrix predicate (in contrast to cases like *John wants to leave*, where *John* is both the wanter and the leaver). (65) are generated by the insertion of non-argument *it* in the empty subject position. (66) are derived by the movement of *John*, *there*, and *Mary* from the embedded subject position to the matrix subject position. Verbs like *want*, which do assign Θ -roles to their subject position, cannot take non-referring *there* as subject (**There wants to be a riot*). As *it* is a non-argument (a non-referring expression), and a Θ -role is assigned to the position of embedded subject, the Θ -Criterion is satisfied in all of these cases.

Now, I consider cases in which the complement clauses of *seem* and *appear* are introduced by the complementizers *as if*, *as though*, and *like*:

(67)

- a. Bill_i seems $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \\ \text{like} \end{array} \right\}$ he_i is upset
- b. Bill_i appears $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \end{array} \right\}$ Mary likes him_i
- c. Bill_i appears $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \end{array} \right\}$ Mary has been hitting him_i
- d. Bill_i $\left\{ \begin{array}{c} \text{seems} \\ \text{appears} \end{array} \right\}$ $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \end{array} \right\}$ Mary has been travelling with him_i
- e. Bill_i $\left\{ \begin{array}{c} \text{seems} \\ \text{appears} \end{array} \right\}$ as though Mary has been doing the house work for him_i
- f. Bill_i seems $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \end{array} \right\}$ Mary has been giving him_i a lot of money
- g. Bill_i seems $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \\ \text{like} \end{array} \right\}$ his_i car needs repairing again
- h. Bill_i seems $\left\{ \begin{array}{c} \text{as if} \\ \text{as though} \\ \text{like} \end{array} \right\}$ his_i arthritis is acting up again

The pronoun in the embedded CP complement in (67) can only be bound by *Bill*. As was evidenced in Arabic, the constructions in (67) permit the bound pronoun to occur in positions other than embedded subject: subject (a), object of a verb (b-c), object of a preposition (d-e), dative (f), genitive (g-h).

The bound interpretation of the pronoun can be seen from the fact that an NP with a unique referent cannot replace the pronoun, again similar to Arabic:

(68)

- a. *Bill seems as if Mary is upset
- b. *Bill appears as if Mary likes John

That the pronoun is necessarily bound to the matrix subject is also indicated by the fact that the pronoun can be coindexed with a negative quantifier:

(69)

- a. No one $\left\{ \begin{array}{c} \text{seems} \\ \text{appears} \end{array} \right\}$ as if he is upset
- b. No one appears as if Mary likes him

The fact that the pronoun refers to *no one* shows that the pronoun has no independent referent but covers the members within the scope of the negative quantifier.

The subject position in (67) is a non- Θ -position as in (53). This can be seen from the fact that a non-argument *it* can be inserted in this position:

(70) It seems as if he is upset

(71) It appears as if Mary likes him

However, (67) cannot be derived by moving *Bill* out of the embedded subject position, which is already filled by a pronoun, but must be generated with *Bill* in the matrix subject in S-structure and in other levels of syntactic structure as well.

5. 16 A Revised Θ -Criterion

Chomsky (1981) suggests the Θ -Criterion as in (72):

(72) Θ -Criterion:

Given the structure S , there is a set K of chains, $K = \{C_i\}$, where $C_i = (\alpha_1^i, \dots, \alpha_{n_i}^i)$,

such that:

- (i) if α is an argument of S , then there is a $C_i \in K$ such that $\alpha = \alpha_j^i$ and a Θ -role is assigned to C_i by exactly one position P .
- (ii) if P is a position of S marked with the Θ -role R , then there is a $C_i \in K$ to which P assigns R , and exactly one α_j^i in C_i is an argument.

Clause (i) requires that every argument position be a Θ -position. Clause (ii) requires arguments to be present in all Θ -positions, that is, it requires that for every Θ -role, assigned at D-structure, there should be an argument in the position to which the Θ -role is assigned in order to receive that Θ -role. This requirement is in fact follows from the Projection Principle. In other words, the Θ -Criterion specifies a one-to-one correspondence between arguments and thematic roles, and given the Projection Principle, it holds at all levels of syntactic structure. It follows from the Projection Principle (i.e. roughly, from

lexical information) that the types of configurations that appear in syntactic structure of the various levels are predictable and severely limited. As a logical consequence of the Θ -Criterion, the level of D-structure is viewed in Chomsky (1981) as the level where only thematic NPs appear, a level of "pure representation of GF-theta".

Clause (i) is plainly violated by non-thematic subject constructions in Arabic that I have discussed in section (5.13.1), and by the English non-thematic subject constructions in which complement clauses are introduced by the complementizers *as if*, *as though*, and *like*, discussed in section (5. 14). The subject A-position in these constructions is bereft of a Θ -role.

To account for these constructions, I propose a relaxation of the Θ -Criterion and a view of the level of D-structure as a less pure representation of GF- Θ structure. I argue that the Θ -Criterion as formulated in (72) is bound to be too strong, and that I want to allow the base-generation of NPs in non-thematic subject positions (A-positions) and positions that are \bar{A} , such as ECM'd and Ld'd positions.

Base-generation of NPs in non-thematic positions is allowed provided that interpretation is possible at LF to satisfy the Principle of Full Interpretation, a principle of UG requiring every element to be interpreted, and which I have thus far assumed. Adjoined NPs, that is ECM'd NPs, Ld'd NPs and matrix subjects of raising predicates all enter in the same way into interpretation at LF. There are at least two ways for NPs in non-thematic positions to receive interpretation and thus licensing. The first is by being in a chain which is assigned a Θ -role, the second is by coindexing with a chain that is assigned a Θ -role.

The relaxed version of the Θ -Criterion requires every Θ -position to be assigned an argument at D-structure, but says nothing about non-thematic positions, such as \bar{A} -positions, and in some cases A-positions, such as subject

positions. The revised Θ -Criterion consists of clause (ii) only, but not clause (i) of (72). This appears as a relaxation of the Θ -Criterion, dealing with cases where a lexical expression is not inserted into a Θ -position, and is designed to overcome the problems noted earlier.

Since I have claimed that the Θ -Criterion does not exclude the insertion of lexical expressions in non-thematic positions at D-structure, I need to ensure that such expressions are interpretable at LF. I assume the Principle of Full Interpretation of Chomsky (1986a), which requires all positions to be interpreted. I propose, as it is usually done, that all complements, arguments, \bar{A} -positions must form chains, complement chains are always Θ -chains. Single-membered \bar{A} -chains are attested in left-dislocation and ECM constructions, where the Ld'd NP and the ECM'd NP are adjoined to IP and to CP, respectively. Each NP heads its own \bar{A} -chain. See chapter (6) for an elaboration of this theory of chains.

All chains must be licensed in a particular way. A chain is well-formed, and thus can be licensed by including a position to which a Θ -role is assigned. This corresponds to clause (i) of the Θ -Criterion in (72). A chain is well-formed with respect to the Θ -Criterion, and thus can be licensed if its head operator-binds a Θ -position. Operator-binding, in the sense used here, is roughly a more general term for wh-interpretation, including left-dislocation, topicalization, non-string vacuous ECM, and relativization. What it basically means is that a lexical expression, not in a Θ -position, or alternatively, in terms of chains, an \bar{A} -chain is nevertheless well-formed if it terminates in a position to which a Θ -role is assigned, or if it is coindexed with a Θ -position, that is by being Θ -linked. As typical examples of thematic and non-thematic chains, let us consider the following structures:

- (73) [_{CP} who_i does [_{IP} John like t_i]]
- (74) John_i seems [t_i upset]
- (75) John_i seems [_{CP} { as if
as though } [_{IP} he_i is upset]]

Movement of the *wh*-phrase in (73) to the specifier of CP results in an \bar{A} -chain consisting of *who*, that is its head, and the trace *t*, that is its tail. *who* has moved into a non- Θ -position, as a consequence of the Θ -Criterion, which prohibits movement into a Θ -position, nonetheless the chain is licensed since it contains a position to which a Θ -role is assigned, namely *t* in the object position of *like*. Similarly, *John* in (74) has moved into a non- Θ -position, but this time the position is an A-position, that of the subject position of *seem*, which does not mark its subject for a Θ -role. *John* forms an A-chain with the trace it binds in the subject position of the small clause. Again, the resulting chain is well-formed as one of its members, the subject position of the small clause receives a Θ -role from the predicate *upset*. Now, consider (75) in which *John* appears at D-structure in a non- Θ -position as the subject of *seem*. Since *John* does not arise from movement, it forms a trivial chain (a chain of one link, consisting of only *John*), and since *seem* does not mark the position of its subject for a Θ -role this chain is not a Θ -chain, that is not assigned a theta role by some element. It should be noted, however, that the pronoun *he* in the subject position of the complement clause is necessarily bound to *John*. This can be seen from the fact that an independently referring expression can not be substituted for *he* :

- (76)
- *John seems { as if
as though } Mary is upset

(75) is a perfectly well-formed structure. *John* is a lexical expression that appears at D-structure in a non- Θ -position forming a chain of one link to which no Θ -role is assigned. It is linked to a chain that contains a Θ -position, namely

the NP pronoun *he*. Thematic linking thus appears to be the licensing device for non-thematic NPs, for Ld'd, ECM'd, Ld'd NPs, Topicalization and wh-questions, though in the latter two constructions the NP obligatorily binds a trace, and not a pronoun.

It should be recalled that I assume that the relation between the lexical expression that is not in a Θ -position and the Θ -position in the complement clause is one of predication, where predication is taken in a broad sense, including the case of a chain of coindexing, i.e. a chain X_1, X_2, \dots, X_3 of NPs where X_1 binds X_2 , X_2 binds X_3 , etc. and only X_3 is a Θ -position. This predication relation is assumed to be formalized by coindexation between the NP bereft of Θ -role and the embedded Θ -position which is the result of an interpretive rule of LF. Then, the claim made here is that a lexical expression does not have to be inserted into a Θ -position at D-structure, nor at any level of syntactic structure to satisfy the Θ -Criterion, under the proviso that it links to a Θ -position, or it be followed by a clause saying "something about" that lexical expression. The latter is attested in cases like "As for the weather, I don't need to take an umbrella today". This is the kind of relaxation of the Θ -Criterion that enables us to account for constructions where an NP is deprived of Θ -role, and that are dealt with in this thesis.

Summarizing, I pointed out that the Θ -Criterion defined in Chomsky (1981) as a condition on D-structure is bound to be too strong in a number of cases. I suggested that that the Θ -Criterion be relaxed so as not to prohibit lexical expressions from appearing in Θ -positions. This is combined with a view of D-structure as a less pure level of GF- Θ . However, NPs with no Θ -roles must meet the requirements of FI at LF, so that a well-formed structure will be generated.

5. 17 Some Alternative Proposals

There are other ways in which one might attempt to preserve the requirement that every A-position be a Θ -position, contrary to our proposal.

One possibility is that one could claim that the position of the matrix subject in (67-71) is, in fact, a Θ -position, and so *Bill* and *it* are assigned Θ -roles. This view would require the verbs in question to have dual lexical entries, corresponding to their different meaning: one in which they assign a Θ -role to their subject, and another in which they do not. Thus, despite the fact that *seem* and *appear* assign no external Θ -role in (65-66), would have to assign a Θ -role in (67-71).

There are good reasons, however, for rejecting the claim that *seem* and *appear* do mark their subjects for Θ -roles in (67-71) but not in (65-66). This would lead to an arbitrary multiplication of argument structure in the lexical entries of these verbs. The question arises as to why *it* in (65-66) is not treated as an argument. One could claim that there are two kinds of *it*, an argument *it* in the matrix subject of (70-71) and a non-argument *it* in the matrix subject of (65-66). The claim that the subject position of (67-71) bears a Θ -role undermines the raising analysis of (66). On the other hand, if the S-structure subject and the D-structure subject of these verbs in (65-66) and (67-71) respectively is considered non-thematic, then the thematic argument structure of these verbs remains constant, and the raising analysis of (66) remains intact. This holds all across the lexicon.

The other possibility is to claim that the subject of the matrix clause has moved to the matrix subject position leaving not a pronoun but a lexicalized trace in its D-structure position. The subject NP could not have originated in the embedded Θ -position and then moved to subject position, since direct movement is ruled out by condition A of the binding theory. The NP-trace is an

anaphor that would not be bound in its governing category, violating condition A. Movement via the specifier position of CP is also ruled out by condition C (improper movement). Thus, the trace would be an \bar{A} -bound R-expression that is A-bound in the domain of the head of its chain.

Another possibility is to insist that *Bill* in (67) is, in fact, moved into the matrix subject position, and that the movement leaves a pronoun in the complement clause instead of a trace. This view, however, would also assume that the movement involved is impervious to barriers, Subjacency, and Case theory so that no Subjacency violation nor Case conflict arise. It is unnecessary to make these assumption since it introduces a kind of movement that is not governed by conditions on movement, as in Topicalization or Wh-questions.

The other possibility is to claim that the lexical NP in subject position does not arrive there by movement, but in this case the insertion of the matrix subject is at S-structure, not at D-structure. This view, however, would allow lexical insertion to operate freely at both D-structure and S-structure. Furthermore, the only reason for such an ad hoc claim is to preserve the strong version of the Θ -Criterion in (72) and the conception of D-structure as a pure GF- Θ .

On our analysis such problems are avoided as it claims that it is possible to insert lexical NPs into positions bereft of Θ -roles at D-structure under the proviso that they receive an interpretation at LF. The sentences in (67) receive an interpretation at LF by virtue of the fact that the matrix subject binds (thus coindexed with) a Θ -pronoun in the complement clause. In sentences like (67) the subject NP appears in matrix subject position at D-structure to which no Θ -role is assigned, and is licensed by coindexing with a Θ -pronoun in the complement. It seems, then, that Θ -coindexing is the licensing factor for

subjects deprived of a Θ -role, as it is for NPs base-generated in adjoined in the constructions discussed in this thesis.

5. 18 Conclusion

This chapter discussed two related constructions in Arabic, ECM clauses and non-thematic subject clauses. In the former a Case-marking verb is involved, assigning its Case to a non-sister NP in $[\alpha, CP]$, and hence the result of this is ECM, giving the effects of the putative Raising-to-object operation. In the latter a non-Case-marking verb is involved, which does not Θ -mark its subject position, hence the NP in the non-Case position $[\alpha, CP]$ is raised to the non- Θ -subject position of the matrix clause to satisfy the Case Filter. I proposed that the two constructions are parallel in that the verb concerned takes as a lexical property a CP complement clause with an additional position $[\alpha, CP]$ adjoined to CP. $[\alpha, CP]$ is an \bar{A} -position by definition since it is an adjoined position. Its presence seems to follow from the Extended Projection Principle, which is the Projection Principle plus the requirement that clauses must have subjects for purposes of predication at LF. I considered the NP filling the $[\alpha, CP]$ position in ECM and non-thematic subject constructions to be in a position of prominence on which the CP clause is predicated. This is parallel to Left-dislocation structures discussed in the previous chapter, where the Ld'd NP is in \bar{A} adjoined positions, $[\alpha, IP]$ or $[\alpha, CP]$. In brief, NPs filling these positions, $[\alpha, XP]$, all act in parallel ways grammatically as prominent or external NPs for the XP clausal complement.

Then, I discussed comparable non-thematic subject constructions in English of "seem as if" type structures, and concluded that the NP is base-generated in in a non-thematic A-position as a subject of the matrix clause. As with Arabic non-thematic NP's in $[\alpha, XP]$, English non-thematic subjects in

"seem as if" structures derive their Θ -reference by coindexation (or alternatively Θ -sharing) with subject or non-subject of embedded tensed complement clauses.

I suggested that a conception of the Θ -Criterion as in Chomsky (1981) that envisages the level of D-structure as the level whereby only thematic NPs appear is bound to be too strong. I proposed a more relaxed conception of the Θ -Criterion that allows lexical expressions to be inserted in non-thematic positions at D-structure under the proviso that these expressions are interpretable at LF. FI which can be satisfied in various ways to be discussed in the next chapter, ensures that all positions are interpreted, and thus licensed. I want to propose that all NPs whether in Θ or non- Θ -positions require Case to be visible to FI, thus licensed, since wh-operators, topicalized NPs (cf. chapter 4), Ld'd NPs (cf. chapter 3), adjoined ECM'd NPs and non-thematic subjects need Case-marking. This is the topic of the next chapter.

Chapter 6

Case and Chain Theory

6.1 Introduction

In this chapter, I outline aspects of Case and chain theory which will accommodate the constructions discussed in the previous chapters.

6.2 A-chains and Visibility

It is generally assumed that chains are formed on A-positions, and that the Case Filter applies only to such chains due to the visibility of Θ -roles at LF, since these are chains which will contain Θ -positions.¹

A central distinction between A-movement (1) and \bar{A} -movement (2-3) is that A-movement is triggered by necessity due to the Case Filter:

1. Mary_i was kissed t_i
2. [_{CP} Who_i [_{IP} did you meet t_i]]
3. [_{CP} Who_i [_{IP} did you think [_{CP} t_i [_{IP} Leslie met t_i]]]]

This has led to the characterization of A-movement as "movement as a last resort" (Chomsky, 1986a). In the chain theories of Chomsky (1981), Rizzi (1982b) and Brody (1983), and in Levin and Massam (1985), it has been stated as a condition on A-chains that the head of a chain must be Case-marked, and that there may be only one Case in an A-chain.

On the other hand, variables, or \bar{A} -bound traces, in these theories, make up and head their own chain; t_i in (2-3) heads its own A-chain, and is necessarily Case-marked. Chomsky (1981) attributes this necessity to the Θ -Criterion in the following way. If the Case Filter is to be subsumed under the Θ -

¹ On the notion of Visibility cf. chapter 1 and 5 of this thesis; cf. also Chomsky (1981), chapter 6 specially PP. 336-344.

Criterion (cf. Chomsky 1981, Stowell 1981, and Levin and Massam, 1984), then all Θ -marked NP's must receive Case in order to be visible to Θ -role assignment at LF. Since, in these theories, a variable trace is always the head of its A-chain, it must be Case-marked to satisfy the Θ -Criterion.

6.3 The Problem

The data which was examined in previous chapters argue that certain aspects of the theory of Case and of chains outlined above must be modified. We have seen that in several cases, NPs which are not in Θ -chains (defined as A-chains which include a Θ -position), do in fact require Case. First, we saw that Ld'd and ECM'd NP's require Case. These NP's are in \bar{A} -positions (i.e. they are never assigned a Θ -role, and they do not form A-chains with the Θ -position with which they are coindexed. So clearly, by the theory above, they should not need to be Case-marked. We saw that topicalized and Wh-questioned NPs which are in $\bar{\Theta}$ -positions must inherit the Case of their extraction site. And finally, it is clear that non-thematic subjects need Case. Here, the NP in question is in an A-position, but this particular position is a $\bar{\Theta}$ -position; the NP does not make up a Θ -chain with the embedded position with which it is coindexed, and hence, the NP should not require Case-marking for Visibility of Θ -roles. However; non-thematic subjects do require Case, as I argued in chapter 5. Furthermore; there are cases of ECM and LD, discussed in chapter 5, where the ECM'd NP and the Ld'd NP are not even coindexed with a Θ -position. Yet, these NPs must be Case-marked.

If the proposed analysis is on the right track, as it appears to be, then the notion of chain outlined above is inadequate for Case-assignment to NPs in [α , CP] (ECM'd NPs), [α , IP] (topicalized NPs), [SPEC, CP] (wh-questioned NPs),

and non-thematic subjects. Modifications and extensions are thus required to accommodate the constructions discussed in this thesis.

6.4 A-chains and \bar{A} -chains

Since the constructions discussed in the previous chapters include NPs which are not in A-chains, but they clearly require Case, I propose that the domain of the Case Filter (see below) be expanded to include not just A-chains (chains headed by an NP in an A-position), but also \bar{A} -chains (chains headed by an NP in an \bar{A} -position)². I assume that move- α results in the formation of a chain, consisting of the trace(s) and the moved NP. If the NP is moved to a position which is characteristically assigned a Θ -role, the chain is called an A-chain (argument chain, because the position is an argument position). If the NP is moved to a position which is never assigned a Θ -role, eg. an adjoined position, or [SPEC, CP], the chain is called an \bar{A} -chain.

The notion of chain, in the sense that I am using the term here, was first introduced in Chomsky (1981). Chomsky introduced 'Grammatical Function Chains' as abstract records (abstract representations) of derivational history after the application of Move- α . In (4) below, for example, we have the chain (*John*, e_2 , e_1), indicating that movement has been from the position of e_1 to that of e_2 and then to the head position (the moved NP) occupied by *John* :

(4) John seems to have been hit by a thunderbolt

(4) is formed by two applications of move-NP (passive followed by raising). A pair of successive elements in a chain are described as a link of the chain. Thus, the chain (*John*, e_2 , e_1) has two links; (*John*, e_2) and (e_2 , e_1). The chain is an abstract representation of *John* that is its head. Each position in the chain (e_1 , and e_2) records a point of the derivation at which the head bears some

² See (13) below for a precise definition of the notion chain.

grammatical function (subject of, object of etc.) that it may not directly bear at S-structure.

In our perception, the notion of chain is not limited to instances of move- α , but it also includes NP's that remain in their D-structure position at S-structure, as in cases of \bar{A} -subjects (Ld'd and ECM'd NP's) which are base-generated and do not arise by move- α .

An informal characterization of chain as revised here is provided below:

- (5)
- a. NP-trace and its antecedent in an A-position form an A-chain.
 - b. An NP in an A-position that is not coindexed with a trace forms an A-chain of one member.
 - c. An NP in an \bar{A} -position and its trace form an \bar{A} -chain.
 - d. An NP in an \bar{A} -position that is not coindexed with a trace forms an \bar{A} -chain of one member.

The following illustrates (a-d) of (5). The subject position of a passive clause (6) is not a Θ -position, as evidenced by non-arguments that appear in this position (6):

(6) John_i was hit t_i

(7) It was surmised that Mary kissed John

Thus, in (6) where the argument *John* appears in a non- Θ -position, *John* and t_i make up a single chain -- an A-chain -- which is assigned a Θ -role because the trace in the object position of *kiss* is assigned a Θ -role. The same is true of the subject position of Raising predicates such as *certain* in (8). The argument *Mary* in (8a) is in a non- Θ -position, as indicated by the fact that a non-referential element, such as *it* can appear in this position (8b):

- (8)
- a. Mary_i is certain [t_i to win the race]
 - b. It is certain that Mary will win the race

With respect to the Θ -Criterion, the representation *Bruce ... t* is well-formed; because, although *Mary* is in a non- Θ -position, it participates in an A-chain which terminates in a Θ -position.

In (9) below *Mary* and *John* each form a vacuous (one link) A-chain, each of which is assigned a distinct Θ -role:

(9) Mary met John.

The two arguments in (9), each constituting an A-chain, are in Θ -positions; they receive their Θ -roles by virtue of being each a member of a one link chain. If an argument participates in a chain, then it receives its Θ -role only by virtue of its membership in the chain, not by virtue of the position that it occupies.

I assume that move- α in (10) and (11) result in the formation of an \bar{A} -chain:

(10)

- a. [_{CP} Who_i [_{IP} did Mary meet t_i]]
 b. [_{CP} Who_i [_{IP} did you think [_{CP} t_i [_{IP} Mary met t_i]]]]

(11)

- a. [_{IP} Mary_i [_{IP} we really like t_i Because she is so pleasant]]
 b. [_{IP} Mary_i [_{IP} we really like [_{IP} t_i' [_{IP} to visit t_i Because she is so pleasant]]]]

In (10a) *who* and *t* constitute an \bar{A} -chain where the head of the chain, *who*, is in an \bar{A} -position. Likewise, in (9b) *who*, *t'*, and *t* make up an \bar{A} -chain headed by *who*.

In (11a) *Mary* and *t* make up an \bar{A} -chain, since the head of this chain *Mary* ends up in an \bar{A} -position adjoined to IP as a result of move-a. Likewise, in (11b) *Mary*, *t'*, and *t* forms an \bar{A} -chain headed by the NP *Mary*.

An \bar{A} -chain consisting of one member is illustrated in (12):

(12) John Mary likes him

The NP *John* in (12) is in an \bar{A} -position and it heads its own \bar{A} -chain which consists of one member, namely the NP *John* itself.

The above discussion entails that the distinction between A–position and \bar{A} –position occupied by the head is crucial for defining the type of chain being formed. Whether the head of the chain is in an \bar{A} –position or not determines whether the chain in question is an A–chain or an \bar{A} –chain.

Chains are thus derived by A–movement, that is, movement to an A–position, or by \bar{A} –movement, that is, movement to an \bar{A} –position, or they are trivial, or they are derived by movement from an \bar{A} –position. Movement from an \bar{A} –position is instantiated by movement of non-thematic subjects in Arabic from a CP adjoined position--an \bar{A} –position to the matrix subject position. It was argued in chapter 5 that this movement occurs under non-Case assigning verbs; the NP adjoined to CP fails to receive Case in this position, hence the need for Case forces the NP to move to get Case in the matrix subject position from INFL. See the structure (7) below in chapter (7).

I define the notion *chain* as follows:

(13)

$C = (\alpha_1, \dots, \alpha_n)$ is a chain if and only if:

- (i) α_1 is an NP (the head of the chain is an NP, as are its other elements).
- (ii) α_m locally X-binds α_{m+1} (X-bind = A–bind or \bar{A} –bind) by the application of move- α .
- (iii) for m, where m is greater than 1, α_m is a non-pronominal empty category.
- (iv) C is maximal, i.e., is not a proper subsequence of a chain meeting (i-iii).
- (V) α_1 and only α_1 is assigned Case.

The basic idea expressed by this definition is that the head (the highest member) of the chain must be an NP, and that the set of positions relevant to the

chain be maximal,³ and must arise through the application of move- α . The definition also requires that the head of the chain be the only member in the chain that 'has Case', and that all members of the chain bind the lowest position (the position bound by every other member of the chain), as a result of move- α .

It is necessary to state what it means 'to have Case':

(14) 'Has Case':

An NP α has the Case K if α is in a chain containing an NP to which the Case K is assigned.

I now make a formulation of Case-assignment:

(15) Case-assignment:

A chain is assigned Case when it includes a position governed by a Case-assigner, or a position having Case inherently (by default).

The essential property of default Case marking, as the term implies, is that it applies only where no other Case is available. I propose that an NP receives a Case feature as a result of one of the modes of Case-assignment. Default Case-marking then is another way Case features may appear on an NP, a proposal justified by Case-marking of adjuncts. Adjuncts in Arabic always receive lexically-triggered default accusative Case. I can state this in the following generalization:

(16) Default Case-marking Convention:

NPs are assigned nominative Case provided that they are ungoverned and that they do not inherit Case. Adjuncts are assigned accusative Case.

³ The requirement that a chain be maximal is designed to circumvent a problem that would otherwise arise quite generally for any chain that has more than one link. Without this requirement, the derivation of the sentence in (1)

(1) John_i was beaten t_i

could result in two chains, one consisting of two links *John* and its trace t_i , and the other consisting of just t_i in the object position of the passive verb. Since the definition of chain requires that every chain must have one Case, it would follow that, assuming that chains do not have to be maximal, (1) is ruled out, since the chain t_i lacks Case.

An example in English where this proposal seems plausible is that discussed in Larson (1985) where it is suggested that certain adverbial NPs, which are termed "bare NP adverbs", receive default oblique Case.

It should be noted that some elements of the definition of chain in (13) are similar to Chomsky's (1981) definition of chain, though definition (13) does not correspond to Chomsky's definition. Chomsky's definition requires that the set of positions in a chain be A-positions, as a consequence of his visibility hypothesis (to be revised below), and that the lowest position be a Θ -position. On the other hand, our definition of a chain is not necessarily Θ -based, since it does not stipulate that the structurally lowest position be assigned a Θ -role (see below for discussion).

Chomsky (1981: 334) assumes the principle (17) for Case-assignment to chains and the Case Filter (18) :

(17) The chain $C = (\alpha_1, \dots, \alpha_n)$ has the Case K if and only if for some i , α_i occupies a position assigned K by β .

(18) Every lexical NP is an element of a chain with Case.

It is important to mention again that there is a difference between the theory of Case and chains presented here and the one presented in Chomsky (1981). Chomsky restricts the domain of the Case Filter to A-chains, and thus also restricts the domain of Case inheritance to these chains. This is because he assumes that lexical NP's in \bar{A} -positions do not need to be Case assigned, since they are not part of A-chains.

It should be clear that in the theory presented here β in (17) is taken to refer to either an X^0 , or to the default rule assigning nominative Case to adjoined NPs in Left-dislocation structures. It is also important to note that I am assuming the notion of Case inheritance as a property of both A-chains and \bar{A} -chains; hence when β assigns Case to α (α is a head of a chain consisting of

more than one link, i.e., a moved NP), α inherits the Case assigned by β to its D-structure position.

Another aspect of the theory of grammar is the visibility of elements in a sentential structure for interpretation. The constructions discussed in this study indicate that the visibility hypothesis in the strong sense- i.e. where the Case Filter is entirely derivable from the Θ -Criterion cannot be maintained. In the following section, I propose a revision of the notion of visibility, which makes the property of having Case a crucial syntactic property for licensing and interpretability.

6.5 A Revised Notion of Visibility

6.5.1 'Having Case' and Visibility

The theoretical implications of LD, ECM and non- Θ -subjects lead us to propose that a Θ -interpreted chain is only one of the possible kinds of chains. The notion that every chain must contain exactly one Θ -position needs to be revised to include the data discussed in earlier chapters. I suggest that a chain can be interpreted non-thematically by predication in the sense of "aboutness relation" with the rest of the sentence, a relation in which Θ -indexing is possible but not obligatory as in Massam (1985).

The restriction I propose on the assignment of "the aboutness relation" is that the NPs that would receive this interpretation must be assigned Case. Case is a feature that makes NPs visible not to the Θ -Criterion at LF, but to the Principle of Full Interpretation. In other words, within this proposal, the Case Filter is extended from being a condition on A-chains to being a condition on both A-chains and \bar{A} -chains. It is reinstated as a constraint on all aspects of LF interpretation, Θ -assignment being one such aspect. Case is seen as a condition on interpretation at LF, making chains visible not to the Θ -Criterion,

but to the Principle of Full Interpretation, which can be satisfied in a limited number of ways to be discussed below. This extended Case Filter is as in (19):

(19) Case Filter

The head of an A-chain and an \bar{A} -chain (X-chains) must be Case-assigned.

The mechanism of Case inheritance will ensure that, if the tail of the chain (the lowest position) is Case-assigned, it will transfer its Case to the head of the chain, and in this way the head is appropriately Case-assigned.

The Case Filter can be motivated by relating it to considerations of LF interpretation. I state the X-chain visibility condition as follows:

(20) X-chain visibility condition:

An X-chain must be visible. An X-chain is visible to the Principle of Full Interpretation when it is Case-assigned.

There is a phonologically empty NP *PRO*, which is never Case-assigned; nevertheless, a chain consisting of *PRO*, is visible. The same is true of the trace that *PRO* binds, as in (21) where a Θ -role is assigned to the trace *t* and transferred to the head *PRO* of the chain (*PRO*, *t*):

(21) It is time [*PRO*_i to be introduced *t*_i to the visitors]

Thus, the element *PRO*, which is an argument is visible to the PFI even though not Case-marked, a direct counterexample to the Visibility Condition in (20).

Thus, I modify the second part of the condition to: "An X-chain is visible to the Principle of Full Interpretation if it is Case-assigned or is *PRO*." Note, however, that the Visibility Condition in (20) extends to *PRO*, and the chain (*PRO*, *t*) in (21) without modification if I assume that *PRO* has inherent Case.⁴

⁴ Note that non-arbitrary *PRO* has features for gender and number, as shown by agreement (a clause-bound phenomenon) in control structures:

- (1)
a. Mary tried [*PRO* to become a pilot (*pilots)]
b. The men tried [*PRO* to become pilots (*a pilot)]

Under the Visibility hypothesis (20), an NP may receive interpretation if it is Case-marked, or more precisely in terms of chains, if it is in a Case-marked chain, or if it is PRO. I can now state that for every chain (A-chain and \bar{A} -chain) there must be a Case-marked position, and still have this derivable from the visibility condition, redefined as a condition on LF interpretation which includes Θ -interpretation and other types of interpretation. This is an extension of the traditional visibility hypothesis from being a condition on Θ -role assignment to a broader condition on all aspects of LF interpretation (hence licensing).

6.6 Interpretation and Licensing

I assume the Principle of Full Interpretation (PFI) of Chomsky (1986a). The PFI requires that every element of PF and LF be interpreted. An element α can satisfy the PFI by being "either an argument, or the trace of an argument, a predicate or an operator. If an argument, α must be assigned a Θ -role; if a predicate, α must assign a Θ -role; and if an operator, α must bind a variable." (Chomsky, 1986: 101).

Ld'd and ECM'd NPs in Arabic are in \bar{A} -adjoined positions to which no Θ -role is assigned, nor do they in all cases in Iraqi Arabic bind a variable. I propose that ECM'd NPs and Ld'd NPs are interpreted non-thematically by an "aboutness relation" with the rest of the sentence. Within this proposal, Case is viewed as a condition on all aspects of LF interpretation (cf. 24)

Unlike LD and ECM in which variable binding is not strictly required, the requirement on topicalized and wh-moved NPs is very tight in that they must

I might assume that non-arbitrary PRO inherits its features from its antecedent; alternatively, I might assume that non-arbitrary and arbitrary PRO have inherent number; thus arbitrary PRO is plural in Italian, but singular in Spanish, as adjectival agreement shows.

bind a variable. I do not believe that there exists a functional difference between a topicalized NP and a *wh*-moved NP; the two maintain an operator-variable relation. Both sentences in (22) are grammatical:

(22)

- a. *kita:b-an_i* *hasib-tu* *ʔamr-an* *qaraʔa* *t_i*
 book-acc thought-1sg ʔamr-acc read
 "A book, I thought ʔamr read."
- b. *ma:ʕa_i* *hasib-ta* *ʔamr-an* *qaraʔa* *t_i*
 what thought-2sgm ʔamr-acc read
 "What did you think ʔamr read?"

The topicalized NP in (22a) is in an \bar{A} -position since it is an adjoined position. The NP does not acquire its Case nor its Θ -role directly (assigned to it by a lexical head), but rather by inheritance from its trace by virtue of its membership in an \bar{A} -chain, of which the topicalized NP is the head. The same holds for the *wh*-phrase *ma:ʕa* in (22b). *ma:ʕa* is the head of the \bar{A} -chain consisting of *ma:ʕa* and *t_i*, with its Case inherited from its variable trace. The chain bears a single Θ -role, since its tail is assigned a Θ -role by the verb *qaraʔa*. Both sentences in (23) are ruled out by the same general principle, the PFI which requires every operator to bind a variable at LF for purposes of interpretation:

(23)

- a. **ʔamr-an_i* *daraba* *ʔaʕ-u:-hu_i* *t_i*
 ʔamr-acc hit brother-nom-his
 "ʔamr_i, his_i brother hit *t_i*."
- b. **man daraba* *ʔaʕ-u:-hu_i* *t_i*
 who hit brother-nom-his
 "Who_i did his_i brother hit *t_i*?"

At LF, the topicalized NP would therefore have the status of an operator, like the *wh*-phrase. In the class of operators, one distinguishes between those marked for the feature $[-wh]$, and those which are not.

To summarize, I note the following facets of licensing:

(24)

- a. an argument is licensed by being in a Θ -position.
- b. A *wh*-operator is licensed by appearing in the specifier of CP at S-structure, from where it must bind a variable, conforming to the condition against vacuous quantification.
- c. A topicalized NP is licensed by binding a variable at S-structure.
- d. A *Ld'd* NP is licensed by predication. This notion of predication subsumes the "aboutness relation" with the rest of the sentence, and coindexation with a Θ -position.
- e. An *ECM'd* NP is licensed by predication in the sense of (23d).
- f. A non- Θ -subject is licensed by coindexation with a Θ -position, a facet of predication, as in (23d).

6.7 Summary of Chapter 6

In this chapter I have modified and extended the standard view of chains and Case. The standard view of chains restricts the domain of chain formation and Case assignment to A-chains. This is due to the Visibility hypothesis since, under this view, A-chains are the only chains which contain Θ -positions. I have extended the Case Filter to apply to A-chains and to \bar{A} -chains as well. This is because NPs which are not in A-chains require Case just like those in A-chains.

Chapter 7

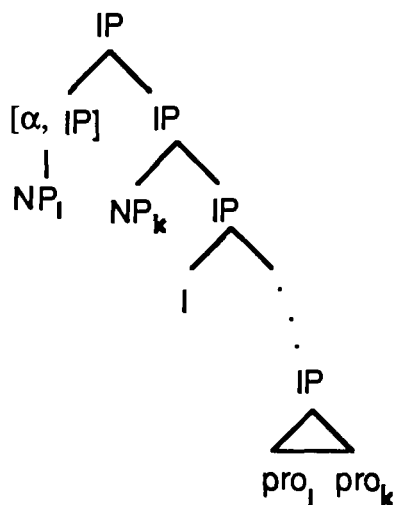
Conclusion

This chapter is a conclusion that will bring the thesis to a close by summarizing and integrating the important results embedded in the analyses of the constructions discussed in this study, and that are relevant to the various sub-theories of UG.

7.1 Range of Constructuons

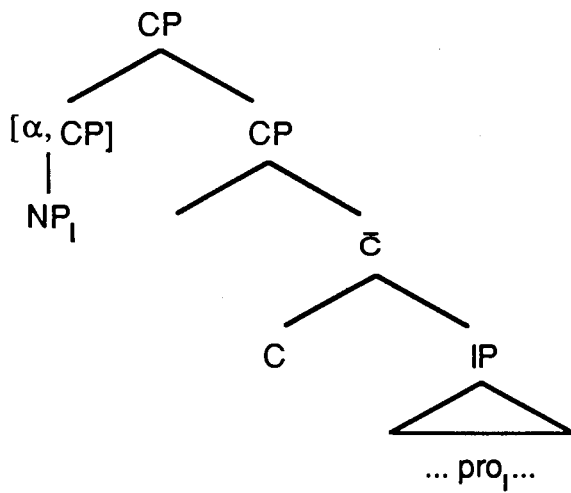
This dissertation centered on the analysis of constructions involving \bar{A} -/A-position relations in Arabic within the principles and parameters approach embodied in the Government-Binding Theory. Now, I briefly review the possibilities for \bar{A} -/A-position NP relations examined in the previous chapters. First, it is possible for an NP to be base-generated in a position adjoined to IP $[\alpha, IP]$, (possibly multiply) and to be coindexed with (an) NP (pronoun(s)) in (an) A-position(s), as in LD:

(1)



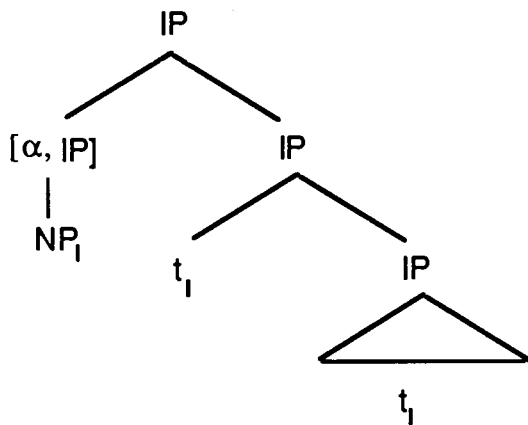
A second instance of this type of relation is possible, but with adjunction to CP, as in (2):

(2)



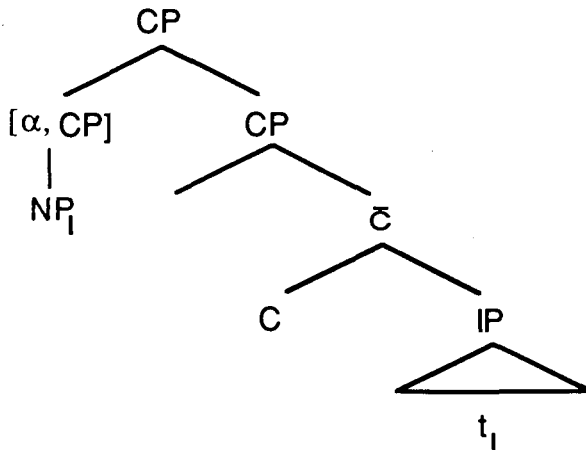
It is also possible for an NP to move and adjoin to IP, (possibly successively), as in topicalization:

(3)



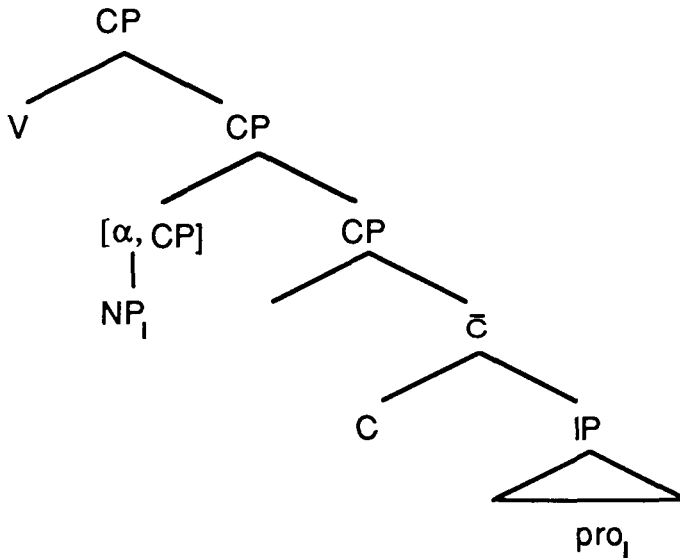
A second instance of Topicalization is possible with adjunction to CP as diagrammed in (4):

(4)



It is also possible for an NP to be base-generated in a position adjoined to CP, $[\alpha, CP]$, and to be coindexed with an embedded subject, object, or oblique NP (pronoun) in an A-position. This position is an \bar{A} -position dominated by the node CP and is sister to it. This process is seen in Exceptional Case-marking constructions, where NP_i in (5) receives Case from a governing non-thematically related verb to which it is not a sister:

(5)

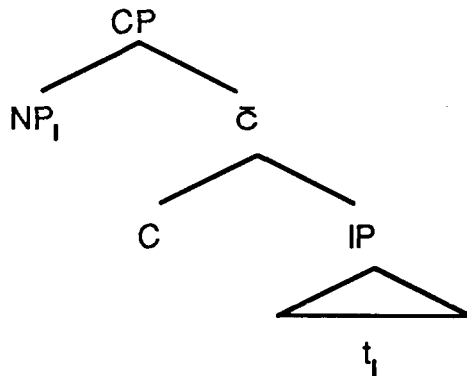


The non-sisterhood relation between NP_i and V in (5) is dictated by the Projection Principle, the hypothesis that syntactic structure must reflect lexical

properties (thematic structure) at all levels. In other words, the Projection Principle characterizes the mapping between thematic structure and grammatical structure. Grammatically, NP_i acts as an object (although NP_i is a non-sister to V) of the matrix clause due to government relation holding between the matrix verb and NP_i , which induces Case-assignment to NP_i , and the possibility of undergoing object-referring rules in the matrix clause, such as passivization and reflexivization.

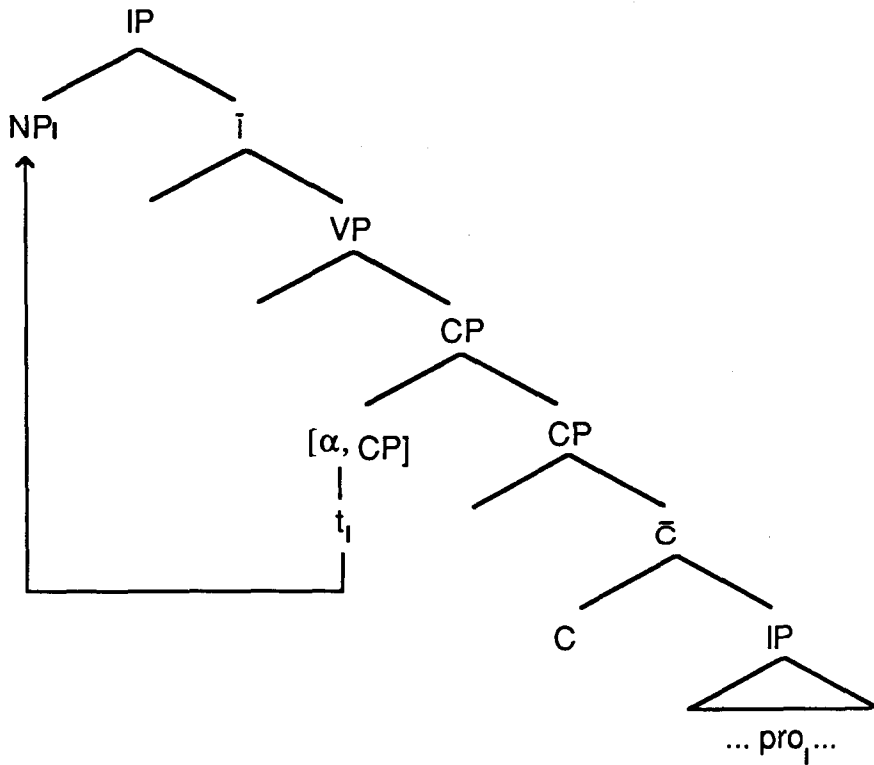
There is also the straightforward movement of wh-phrases to the specifier position of CP:

(6)



Finally, there is the obligatory Case-triggered movement of an NP from the position $[\alpha, CP]$ to the matrix subject position of non- Θ -assigning predicates, such as *yabdu* 'seem', *yadharu* 'appear', with coindexation relation with an embedded subject, object or oblique object NP (pronoun). This relation is expressed by non-thematic subject constructions, as in the diagram (7):

(7)



It was shown that Arabic exhibits a productive use of \bar{A} -IP-initial and sentence-internal base-generated adjunction sites. D-structure embedded IP adjunction sites are the regular locus of Ld'd NPs from which they are governed and assigned accusative Case by the Case assigning COMP *?anna*. D-structure matrix IP adjunction sites, which are not introduced by a complementizer are also a possible locus for Ld'd NPs. In this case the Ld'd NP acquires the default nominative Case. IP adjunction sites, arising at S-structure, also provide a locus for topicalized NPs (an instance of move- α) inheriting the same Case assigned to their D-structure position. D-structure CP adjunction sites are the regular locus of NPs ECM'd under government by verbs to which they bear no thematic relation. I provided supporting evidence that Case is routinely assigned to the specifier position of IP and CP, thus

arguing for the definition of government as in chapter (1), if Case-marking is to take place under government.

Another central concern of current syntactic theory is licensing of elements within sentential structures. A number of results that emerged from the last three chapters have special relevance to the theory of licensing. Arguments are licensed by being in Θ -positions. A-positions which are not Θ -positions are licensed by either forming chains bearing a Θ -role, or by predication -- coindexing with an embedded Θ -position. Arabic Non-thematic subjects is an example of the latter case. \bar{A} -positions are licensed by being in chains with a Θ -role, as in wh-phrases and topicalized NP's, or by predication (having a coindexing relation with a Θ -chain, and the "aboutness relation" with the rest of the sentences, as in Left-dislocation).

7.2 Theoretical Implications for UG

In this dissertation, I have investigated a wide range of constructions and analyses. Now, it is time to take stock of some of the theoretical implications and results of this research for various subtheories of UG.

7.2.1 Case Theory

There are a number of important results that are directly relevant to Case theory. I provided strong empirical motivation for Case theory involving the primitive syntactic relations of configurationality, directionality and adjacency.

The bulk of chapter 2 has been devoted to defending the hypothesis that the VSO order of Arabic is obtained from an SVO D-structure configuration by fronting INFL and V to the left of the subject NP. The motivation for this rule has been ascribed to the setting of a single parameter of linguistic theory involving a rightward directionality of Case-assignment by INFL and other Case assigning

categories. For Arabic, this parameter is set to apply rightward. The behaviour of gerunds is a case in point. The ascription of the verb fronting rule to a rightward parameter setting for government and Case-assignment made an important prediction about word order in the gerundive construction.

The analysis presented in chapter 4 of topicalization and wh-questions constructions provided strong support for Case inheritance, and shows that it plays a significant role in the grammar. Case inheritance is a property regulated by the Case Filter, as the Case Filter forces Case inheritance by lexical NP's which fail to receive Case by direct assignment.

Moreover; the manner in which Case is assigned has been shown to be significant, as direct assignment of Case has been distinguished from Case inheritance, and from Case-assignment by default. The latter is relevant to a subset of Ld'd NPs, which gets nominative Case in the absence of an obvious Case assigner, thereby circumventing the effects of the Case Filter.

The domain of application of the Case Filter has been extended to include NPs in A-positions and NPs in \bar{A} -positions. The principal sort of cases that justified this approach are topicalized, ECM'd and wh-NPs, in addition to Ld'd NPs. Moved NPs to an \bar{A} -position inherit Case at S-structure in the same way that NPs in an A-position do. ECM'd NPs are in \bar{A} -position, yet they must get accusative Case by direct assignment by a governing verb in the matrix clause, that is not by inheritance. Ld'd NPs are in an \bar{A} -position, yet they must be assigned accusative Case directly by a governing complementizer; in the absence of a Case assigning complementizer, they must default to nominative Case.

Another important property regulated by the Case Filter is the principle of Case conflict. Case conflict, as generally conceived of, is a prohibition against the assignment of two different (i.e., conflicting) Cases to a single NP. I

alleviated the notion of Case conflict to a principle of UG, and generalized it to rule out structures containing an NP such that the NP has received two Cases conflicting or otherwise from two different sources.

These properties provide further evidence that Case plays an important role in a variety of contexts, and supports in general our claim that having or not having Case is more significant than which particular Case feature an NP has acquired. This point will be further discussed in the following subsections.

7.2.2 Chains, Case and Θ -Theory

I suggested an approach to chains that takes a quite different tack from those generally discussed in the literature. All of the chains discussed in the works cited in section (6.2), are chains that consist exclusively of A-positions, that is to say, positions to which a Θ -role can be assigned by some predicate. One of the results based on the analysis of adjoined NPs and constructions involving extraction from an A-position to an \bar{A} -position has particular relevance to the theory of chains.

The domain of construction of chains should not be limited to A-positions, as it is widely assumed. But rather it should be extended to include \bar{A} -positions as well. The principal motivation for this revision of chains is based on constructions involving NPs base-generated in \bar{A} -positions and constructions involving extraction.

In my approach, whether the head of the chain (the structurally highest member) is an operator or not determines whether the chain in question is an A-chain or an \bar{A} -chain. This means the distinction between A-positions and \bar{A} -positions that the head ends in defines the kind of chain being formed. Elements in \bar{A} -positions, if they are lexical NPs, can count as the only Case-bearing head of the \bar{A} -chain, just like elements in A-positions do in A-chains.

In chapter 6, I presented a theory of chains that attempts to accomplish this task.

On the basis of the analysis of adjoined NPs and non-thematic subjects in chapter 5, a principal outcome of this theory of chains has been the introductions of non- Θ -chains, that is, chains that do not receive a Θ -role directly assigned to them by a lexical head V, nor by a maximal projection such as VP. As argued in chapter 5, non- Θ -chains must be assigned Case, the presence of such chains in the grammar violates the standard hypothesis that reduces the Case Filter to a well-formedness condition on the assignment of Θ -roles at LF. This hypothesis is known as the visibility condition, the requirement that to be assigned a Θ -role, a chain must have Case, or be headed by PRO. I proposed an account in which the Case Filter is reinstated as a broad condition on LF interpretation including Θ -marking and all aspects of Interpretation. This approach can be reconciled with the traditional notion of visibility, as I shall explain in the next section.

I examined the status of the Θ -Criterion and the notion of D-structure as the level where only thematic NPs appear. The evidence presented in chapter 5 shows that part of the Θ -Criterion: every argument position must be a Θ -position can in fact be derived from a more general principle of the Principles and Parameters Theory: the principle of Full Interpretation (FI). FI requires that every grammatical entity be assigned an interpretation at PF (if present at the level of analysis where the phonological/phonetic interpretation is assigned to a sentence) and at LF (the component that assigns a semantic interpretation to a sentence). Thus FI forbids uninterpretable phonemes, free variables, vacuous operators, as well as uninterpretable arguments.

7.2.3 The Visibility Hypothesis Revised

The visibility hypothesis, the requirement that having Case is a requirement on the assignment of Θ -roles to A-chains has been revised in chapter 6 to an X-chain visibility condition:

(8) X-chain Visibility Condition:

An X-chain must be visible. An X-chain is visible to the Principle of Full Interpretation, if it is Case-assigned, or is PRO.

I motivated the Case Filter by relating it not to the Θ -Criterion, as it is commonly done, but to the Principle of Full Interpretation, a general principle of UG that requires elements in sentential structures to receive an appropriate interpretation and to be licensed in a finite number of ways. I suggested an extension of the visibility condition from being a condition on the assignment of Θ -roles at LF to a broad condition on LF interpretation including Θ -role assignment, and other forms of interpretation. This is accomplished by expanding the domain of the Case Filter, the linchpin of Case theory. The Case Filter has been revised to be a requirement on lexical NP's in A-positions and \bar{A} -positions, rather than a requirement on Θ -chains reducible to the Θ -Criterion. In this revision Case, essentially the abstract relation holding between NPs and governors, is a feature that makes chains (A-chains and \bar{A} -chains) visible to the principle of Full Interpretation, and not to the Θ -Criterion. I maintained the classical distinction between A-chains and \bar{A} -chains, but required the Case Filter to apply to both types of chains, as a consequence of the Principle of Full Interpretation.

The property of Case is a crucial component of interpretability, and thus must be assigned in some manner to make chains visible for LF Interpretation. Having Case, or not having Case (be it nominative, accusative, genitive, or otherwise) whether assigned directly, inherited, or by default, is a syntactically

significant property beyond simply having a particular Case feature in some context, and in some manner, and not some other Case feature.

7.2.4 The ECP

Some important results emerged from this research with respect to the ECP, a principle of UG requiring empty categories to be properly governed. I suggested that a clitic may appear as a result of move- α to properly govern the trace that fails to be properly governed. In other words, the clitic is a proper governor for a trace that is not in a configuration of proper government. The obligatory presence of an overt clitic, coindexed with the trace left by move- α in complement position of N, P and the preposition-like complementizer *?anna* in Arabic is forced by the ECP to permit the trace in question to be properly governed. This is so, because the categories N, P, and *?anna* are not proper governors, (although they are governors and are able to assign Case) and thus movement from the position that immediately follows these categories would leave a trace that is in violation of the ECP.

Another important result concerning the ECP is that two instances of IP counts as a barrier blocking antecedent government, hence proper government. Strong empirical motivation for this approach came from the interaction of wh-movement with topicalization and left-dislocation structures. Adjunction to IP blocks further extraction uniquely from the positions of subjects and adjuncts, while extraction from object position is generally permitted. The ECP provided a principled and an elegant account of this asymmetry: further extraction of subjects and adjuncts over two instances of IP nodes is ruled out since it leaves a trace that fails to be properly governed by its antecedent or otherwise. In contrast, extraction of objects leaves a trace in a properly governed position, a position lexically governed by the verb conforming to the ECP.

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