

THE SYNTAX OF THE ARABIC DP

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Abstract

This thesis provides a minimalist account of the Arabic DP. The data used comes from Modern Standard Arabic and Makkan Arabic, a spoken variety used in Saudi Arabia. Using two varieties provides a more complete picture of Arabic DPs and sheds light on the relationship between standard and spoken Arabic.

I argue that head-to-spec movement takes place in all Arabic DPs and that this movement is a cyclic, minimalist alternative to standard Head Movement. I claim that the basic differences between Simple DPs and Free States on the one hand and Construct States on the other are derivable from the D projected in each structure; definite or indefinite D are projected in the former and Construct State D in the latter. I analyse Construct States headed by a number of categories: nouns, quantifiers, nominalised adjectives, numerals and verbal nouns. I claim that the similarities between these constructs are due to the use of Construct State D, and the special behaviour of each type is a reflection of the category of the head projected below D. I propose that the Arabic lexicon is rich and I present evidence for some complex word formation processes. Moreover, I propose that complex adjectives, often referred to in the related literature as Adjectival Constructs, which show a mixture of adjectival and construct properties, are adjectival compounds formed in the lexicon. I also argue that Verbal Noun Construct States in Modern Standard Arabic may be formed either in the lexicon or in the syntax, and that each option is associated with different structures and modificational patterns. Moreover, I claim that the restrictions on Verbal Noun Construct States in Makkan Arabic are a result of this variety having only lexically formed Verbal Nouns.

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Some parts of chapters 3 and 4, laying out the head-to-spec approach and applying it to Arabic DPs appeared in:

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- An article entitled “A Minimalist Approach to the Semitic Construct State” in *York Papers in Linguistics*, 9, 2009, 1-22 (Bardeas, 2009).

Declaration

This thesis has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree other than Doctor of Philosophy of the University of York. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by explicit references.

I hereby give consent for my thesis, if accepted, to be made available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

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Chapter 1

Introduction

1.1 The Syntax of the Arabic DP

Arabic syntax has for centuries been a rich topic of research, from the descriptive work of early Arab grammarians such as Sibawayh, Al-Zu'ajj and Ibn Jinni to the large body of analytical studies in the context of modern linguistic theory. Patterns like subject-verb agreement and different word orders have been extensively studied and analysed both in the “traditional” and “modern” approaches.

Arabic DPs, especially complex ones, have attracted a lot of interest in the generative literature. In this thesis I will attempt to present an account for most of the properties of the Arabic DP, with specific focus on Construct States - a genitive structure found in some Semitic languages. My analysis will be based on data from two varieties of Arabic: Modern Standard Arabic and Makkan Arabic. The main goal of my work is to formulate a minimalist account of Arabic DPs which both explains similar behaviour across various structures while still justifying the unique behaviour each one of them displays.

In this chapter I will introduce the two varieties I use and explain how they relate to and differ from each other (§1.2). I will also briefly present the theoretical assumptions I adopt and explain the transcription guidelines I employ (§1.3 and §1.4, respectively). In §1.5 I summarise the structure of the thesis.

1.2 Modern Standard Arabic and Makkan Arabic

Until recently, most of the generative studies of Arabic syntax tended to focus on Modern Standard Arabic, a descendant of Classical Arabic used throughout the Arab World nowadays. This tendency was probably an influence of the prestigious status of this variety and of the fact that the majority of Arabic speakers think of it as *the* Arabic language. However, there has been a growing interest in studying the spoken varieties of Arabic, mainly because they provide the researcher with more reliable native speaker judgements. Moreover, the different varieties of spoken Arabic have developed, and most probably are still developing, new structures and/or losing some patterns found in Modern Standard Arabic. This situation provides intriguing topics for research. From a sociolinguistic and historical linguistic point of view, it would be interesting to investigate, for example, whether the different spoken varieties are converging or diverging and whether they are all developing along parallel paths. From a syntactic point of view, the differences in behaviour between Modern Standard Arabic on one hand and the spoken varieties on the other might in fact help give a more accurate picture of how the syntax of Arabic is organised. For example, the availability of a given structure in one variety but not in another might explain the nature of that structure if this availability is taken to follow from other properties of each variety and/or structure. Comparing different varieties may in fact be interesting if the differences can be explained in the context of modern generative syntactic principles. By studying the behaviour of DPs in two varieties of Arabic, I hope to get deeper insights into the structure of Arabic DPs and explain why certain patterns are available in one variety but not in the other in a way which falls out from and supports my proposed analyses. The two varieties I use are Modern Standard Arabic and Makkan Arabic, a spoken variety. In the rest of this section I will give an overview of the social and historical status of each variety, of how they relate to each other and of the major structural differences between them.

Modern Standard Arabic is the language used in formal settings in the Arab World. It is a descendent of Classical Arabic, and structurally it is very similar, almost identical to it; the major differences between Classical Arabic and Modern Standard

Arabic are lexical in nature, with new words entering Modern Standard Arabic and some Classical Arabic words becoming absolute or completely dying out. Makkan Arabic is a spoken variety mainly used in some parts of the Western Region of Saudi Arabia. It is spoken by descendants of migrants from outside the Arabian Peninsula who moved to Makkah,¹ the Holy city for Muslims, in the course of the eighteenth and nineteenth centuries. Those migrants would have mainly come from Africa, India and East Asia. This immigration is not historically documented, but I speculate that the first generation of migrants would have had languages other than Arabic as their first language, and they would have used Standard Arabic as a *lingua franca* to communicate with each other and with the other migrants. Gradually Makkan Arabic developed as a dialect, preserving the majority of the syntactic properties and vocabulary of Modern Standard Arabic and borrowing some lexical items from other languages and varieties of Arabic. From an observational point of view, Makkan Arabic has not been greatly influenced by other Saudi dialects, and a speaker of this dialect would be easily recognised by speakers of other Saudi dialects as being “from Makkah”. Nevertheless, lately there has been increased mobility and contact in Saudi Arabia and the different Saudi dialects are undergoing some sort of a leveling process. In Makkan Arabic, the effect of that leveling is mainly lexical, as some words frequently used by older generations are gradually being replaced by more “main stream” words.

Modern Standard Arabic is a pro-drop, highly inflected language. Nouns, adjectives, verbs, quantifiers, demonstratives and other categories have complex paradigms of various forms. For example, nouns and adjectives are inflected for number (singular, dual, and plural), gender (masculine and feminine) and case (nominative, accusative, and genitive). Verbs are inflected for person, number, gender, tense, aspect and mood. Modern Standard Arabic also shows agreement in many environments. For instance, adjectives agree with nouns in number, gender, case and definiteness. There are two basic word orders in Modern Standard Arabic - Verb-Subject-Object

¹Makkah is sometimes spelled as “Mecca”. I use the former spelling because it is the official English spelling in Saudi Arabia.

(VSO) and Subject-Verb-Object (SVO) - and each one of these orders shows a different subject-verb agreement pattern. Basically, the verb fully agrees with the subject only in SVO; in VSO, the verb agrees with the subject in person and gender but not number, and the singular forms of verbs are used with subjects of all numbers. Scrambling is allowed, producing more word orders such as Object-Subject-Verb, but these would be derived from one of the basic word orders because they would preserve the agreement patterns and inflectional endings of the basic word order they are derived from.

Makkan Arabic is also pro-drop, highly inflected and shows agreement in many environments, but it has lost some of the inflectional features of Modern Standard Arabic. For example, Makkan Arabic does not use overt case endings and dual number is indicated only on nouns, but not on verbs or adjectives. Both SVO and VSO are used, but the the subject fully agrees with the verb in both orders. Scrambling is restricted, basically because less inflectional endings are used, providing less cues to help in descrambling structures. For example, in Modern Standard Arabic, it would be possible for the listener to process OVS structures because the object would be overtly accusative and the subject would be overtly nominative. However, as Makkan Arabic does not use overt case endings, a string of "DP V DP" would be potentially ambiguous between SVO or OVS in some contexts.

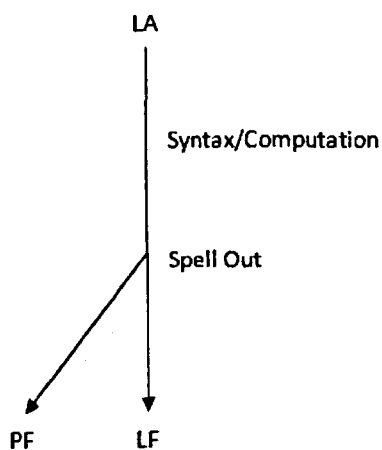
Makkan Arabic has lost some of the overt markings of Modern Standard Arabic, and this seems to have led to some restriction in word order. Because some of the structures available in Modern Standard Arabic had been gradually dropping out of use, that would have led to subtle changes in the syntactic system to eliminate unused elements, making the dialect more economical and practical for its users. It would be interesting if these speculations are tested in the course of a formal linguistic variation and change theory. But this is beyond the scope of this brief introduction, and I leave this topic for future research. However, the findings of my comparative study of Modern Standard Arabic and Makkan Arabic will shed some light on how the syntactic structure of the two languages is different, and that would illustrate the directionality and driving force of the change.

1.3 Theoretical Background

This thesis is set within the framework of the Minimalist Program proposed by Chomsky (1993, 1995b,a, 1999, 2000, 2004, 2005, 2008, 2007).² The basic assumption of Minimalism is that language is optimally designed and that linguistic theory should reflect that optimal design. Therefore, minimalist approaches to syntax attempt to reduce the theory to the essentials, eliminating many of the principles of earlier frameworks.

Since the basic function of language is to connect sound and meaning, minimalist syntax reduces the levels of representation to the two conceptually necessary ones: articulatory-perceptual “Phonetic Form” (PF) and conceptual-intentional “Logical Form” (LF). These two levels are known as the “interfaces”. Deep Structure and Surface Structure, the two levels leading to the interfaces as assumed in earlier frameworks, are eliminated from the theory. Building any structure proceeds over several stages, as illustrated in (1).

(1)



A part of the lexicon called the “Lexical Array” (LA) or “Numeration” (N) is selected, and the computational system builds a structure out of the LA. After the

²The majority of the theoretical assumptions introduced in this section are common to these sources.

structure is built, it is interpreted by the interfaces and the structure gets spelled out in phases. I will discuss each of these stages below.

The first step towards building a structure is selecting the lexical items which constitute the Numeration. These lexical items consist of features which are relevant to either syntax, semantics or phonology. These features may be either interpretable or uninterpretable. Interpretable features are features which are relevant to the interfaces and can be interpreted by them. Uninterpretable features need to be eliminated during the course of the derivation before the structure is sent to the interfaces because they are not interpretable at those levels. For example, person and number features on nouns are interpretable; these features are relevant for the semantic interpretation of the structure, and therefore they do not need to be eliminated before Spell Out. However, c-selectional features, for instance, are uninterpretable, as they are relevant only to the syntactic part of the derivation, not to the interfaces. For example, the c-selectional feature for a nominal on a transitive verb is relevant to the structure building mechanism, and this feature needs to be eliminated before the structure is sent to the interfaces.

The computational system - syntax - selects items from the Numeration to build structures. The most basic operation in the syntactic component is Merge. Merge takes two items and merges them together, creating a set. There are two types of Merge: External Merge and Internal Merge (Chomsky, 2004). In External Merge, the computational system takes a lexical item from the Numeration and merges it to the structure. In Internal Merge, also known as “Move”, one of the merged items comes from within the other; in other words, a previously merged item is merged again. This remerging is currently assumed to be copying (Chomsky, 1995a); the computation takes a previously merged item and remerges it, leaving a copy of the item in its original position. The copies of the lexical item form a chain, and higher elements of a given chain must c-command lower elements. C-command is defined as (2).

- (2) α *c-commands* β if
- a. α does not dominate³ β and
 - b. every γ that dominates α dominates β as well

This guarantees that the element merged by Internal Merge is merged at the root. This requirement for Internal Merge to apply at the root also applies to External Merge and it follows from a more general principle known as the Extension Condition (3).

- (3) **Extension Condition:** all operations, must extend the root.

(Chomsky 1993: 23)

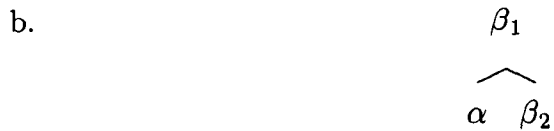
According to the Extension Condition, structures must be extended only at the root, and this requirement ensures that the derivation is cyclic, i.e., that the derivations move in one direction.

The set created by Merge is given a label. The label of the set is the label of one of the items combined by Merge. For example, if α and β are merged, the label would be either α or β , depending on which one of the two determines the properties of the whole set. The item which passes its label to the set is the one which “projects” and it is considered the head. Thus, in (4a), α_2 is the head, but in (4b) β_2 is the head.

- (4) a.
- $$\begin{array}{c} \alpha_1 \\ \wedge \\ \alpha_2 \quad \beta \end{array}$$

³In (1), a dominates b, c, d, and e; c dominates d and e; and b, d, and e do not dominate any other constituent. (Chomsky, 1995b)

- (1)
- $$\begin{array}{c} a \\ \wedge \\ b \quad c \\ \wedge \\ d \quad e \end{array}$$



This projection and labeling system shows a departure from earlier frameworks such as X-bar Theory and Government and Binding. In earlier frameworks, all lexical items necessarily project at least three levels: a head, a bar level and a phrasal level, as shown in(5).



Chomsky (1995a, ff.) proposes a bare phrase structure theory where bar levels are not used. He argues that the Inclusiveness Condition forbids the introduction of any new elements during the derivation other than those in the Numeration. Each entry in the Numeration consists of features, with no bar levels or phrasal levels. For example, X is found in the Numeration, but X' and XP are not. Therefore, when a head X projects, the label given to the projection should be X, not X' or XP.

In a “perfect language,” any structure Σ formed by the computation ... is constituted of elements already present in the lexical elements selected for N; no new objects are added in the course of computation (in particular, no indices, bar-levels in the sense of X-bar theory, etc).

(Chomsky 1995a: 393-394)

Chomsky proposes that instead of specifying bar and phrasal levels, one should identify maximal and minimal projections, as he explains in the following extract.

Minimal and maximal projections must be determined from the structure in which they appear without any specific markings; ... they are relational properties of categories, not inherent to them. There are no such entities as XP (X^{max}) or X^0 (X^{min} , terminal element) in the structures formed

by C_{HL} Given a phrase marker, a category that does not project any further is a maximal projection XP and one that is not a projection at all is a minimal projection X^0 ; any other is an X' , invisible at the interface and for computation. (Chomsky 1995a: 396)

For example, in (6) $X1$ is a minimal projection, $X3$ is a maximal projection and $X2$ is neither maximal nor minimal. In other words, the status of a given node as maximal, minimal or neither is determined from the configuration it occurs in and it is not inherent to the label of the node. This way of defining projections makes it possible for a given node to be both maximal and minimal. Y and Z are both maximal and minimal because they fit both definitions.



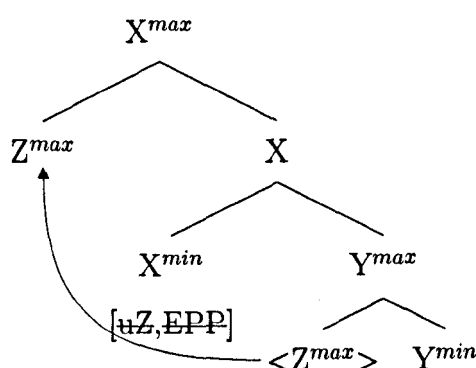
In this framework, complements and specifiers are defined in different terms from the ones assumed under X-bar theory. Instead of being defined as the sister of X (a head), complements are defined in terms of first Merge. Thus, the node first merged with a given head is its complements. Specifiers are the constituents introduced in the structure by a second or subsequent applications of Merge to the same head. According to these definitions, Z in (6) is the complement of X and Y is the specifier of X . Since Merge produces unordered sets rather than ordered pairs, there is nothing in the theory adopted here to specify that complements are merged to the right of the head and specifiers to its left. Linear Order is rather the result of PF processes. I assume that adjuncts are also linearised at PF, but they are distinct from complements and specifiers in that adjuncts are optional maximal projections merged - or adjoined - to maximal projections.

One other basic operation in the computational system is Agree. Agree is a relationship between a probe and a goal, with the probe c-commanding the goal. The probe has an unvalued feature which needs to be valued and checked by being

in an Agree relation with a matching valued feature. Thus, the probe selects a goal with a matching feature from within the structure. As a result of Agree, the features on the probe are valued and deleted, and the goal remains in situ.

In some cases, the probe has an EPP feature, which requires an element to be merged to the edge of the probe (Chomsky, 2000). When a given probe has a feature which needs to be checked and an EPP feature, the goal would move (or be copied) from a position within the *complement* of the probe to its *specifier* position, as shown in (7).

(7)



In other words, Internal Merge or Move is assumed to occur as a result of a probe selecting a goal and causing it to move.

It is sometimes assumed that both the probe and the goal need to be active in order for them to be in a feature-checking relation, such as Agree (Chomsky, 1995a). In other words, both the probe and the goal should have some features which need valuing or checking, and the “matching” operation would affect all these features. This is the principle of Greed; in order for the goal to have the feature of a probe checked, the goal itself must get something out of the relation. For example, The subject moves from spec/v to spec/T, checking T’s EPP and c-selectional N feature features, and at the same time T checks the case features on the subject.

After all the required syntactic operations take place, the structure is transferred to the interface levels via an operation called Spell Out. In Spell Out, the phonological features of the structure are stripped and sent to PF, where the structure is pronounced. The remaining features would be semantic features and those would be processed by LF. Morphological structure is assumed to be to be a part of PF; it is a post Spell Out level (Chomsky, 1995a). Morphology processes the spelled out struc-

ture and then sends it to phonology to be pronounced. If the structure sent to LF and PF is interpretable at those levels, the derivation is said to *converge*. If however, the structure does not conform to the principles of one or both of the interface levels, the derivation would *crash*. Chomsky proposes that there is no interaction between PF and LF. Any operation which takes place in either level does not have a reflection on the other. For example, if the structure is spelled out with a feature that is not interpretable at LF, it cannot be assumed that a PF operation can check that feature and then send that information to LF.

It has been proposed by Chomsky (1999, 2000) that Spell Out happens in phases. In other words, the structure is built at different stages and each part is sent to the interfaces at the time it is completed, not when the whole structure is built. So, a subsection of the Numeration is selected and placed in active memory and that subsection is used to build a part of the structure. That part is then spelled out and another subsection of the Numeration is selected, and so on. One of the theoretical advantages of derivation by phase is that it reduces the burden on active memory. Instead of having the whole Numeration and structure in active memory throughout the derivation, only a selection of the Numeration and a part of structure are processed at a time.

So how is that subarray selected? Chomsky (1999, 2000) proposes that each phase has a head and that each time a subarray is selected, only one phasal head should be selected. He also proposes that each phase should determine an object which could be relatively independent at the interface levels; it should have an independent meaning. Chomsky argues that phases should represent propositions, and he proposes that phasal heads are v^* and C. The strong, transitive v (v^*) projection would include a verb with all its theta roles assigned; the internal argument would be a complement of V and the external argument would be the specifier of v^* . Similarly, a C projection would be a full clause and would represent a complete proposition.

Chomsky (1999, 2000) proposes that derivation by phase is subject to the Phase Impenetrability Condition. Once a phase is sent to the interfaces, the internal structure of the phase is not accessible to operations in the higher phase. However, the

head and the edge of the phase can still be accessed by the immediately higher phase. The edge of the phase is the specifier(s) of that phase, and it constitutes an “escape hatch” where elements which need to be accessed by the higher phase are placed.

- (8) **Phase-Impenetrability Condition:** In phase *a* with head H, the domain of H is not accessible to operations outside *a*, only H and its edge are accessible to such operations. (Chomsky 2000: 108)

The Phase Impenetrability Condition ensures the cyclicity of derivations; once a phase is completed, its internal structure can no longer be accessed by syntax, ensuring that derivation only moves upwards. In other words, when a certain phrase (Phase 1) is spelled out, everything in that phase, except for the head and the edge, is handed over to the interfaces and is no longer accessible. When the immediately higher phase (Phase 2) is spelled out, the head and edge of the lower phase (Phase 1) are sent to the interfaces together with everything in the higher phase (Phase 2) except for the head and the edge of that phase.

In this section, I gave a brief overview of the syntactic theory assumed in this thesis. I adopt mainstream minimalist assumptions outlined in Chomsky (1993, 1995b,a, 1999, 2000, 2004, 2005, 2008, 2007). In brief, I assume Bare Phrase Structure, where no bar levels are used. To build a structure, a Numeration is selected, and syntactic computation builds the structure which is then spelled out and sent to the interface levels, proceeding in phases.

1.4 Transcription and Glossing Guidelines

The Arabic examples in this thesis are transcribed according to the following guidelines:

- A hyphen is used to separate easily identifiable morphemes. For example *al-walad* “the book” or *kitaabu-ha* “book her” (her book). Case endings will not be separated from nouns and adjectives. In the majority of cases, nominative case is represented as *u*, accusative case as *a* and genitive case as *i*.

- The symbols in table 1.4 are used for transcribing Arabic consonants. The symbols are arranged according to the Arabic alphabet. However, the last sound in the right-hand column [g] is used only in Makkan Arabic and it is the equivalent of Modern Standard Arabic [q].

Table 1.1: Transcription Guide for Consonants

symbol	IPA equivalent	symbol	IPA equivalent	symbol	IPA equivalent
ʔ	ʔ	z	z	q	q
b	b	s	s	k	k
t	t	š	ʃ	l	l
ṭ	θ	ṣ	s ^ʕ	m	m
j	ʒ	ḍ	d ^ʕ	n	n
ḥ	ħ	ṭ	t ^ʕ	h	h
x	χ	ḏ	z ^ʕ	w	w
d	d	ʕ	ʕ	y	j
ḍ	ð	ġ	ɣ	g	g
r	r	f	f		

- Short vowels are transcribed using one vowel letter (*i*, *o*, and *a*), and long vowels are represented using two vowel letters (*ee*, *oo*, *aa*).

The Arabic examples in this thesis are glossed according to the following guidelines:

- Verbs are glossed using the relevant English verb in the relevant tense. For example, the Arabic verb *raah* is glossed as the English verb “went”, rather than “go-past”.
- Agreement morphology features on verbs are glossed between parentheses following the verb. The order of the relevant features is: Person [1(st), 2(nd), 3(rd)]; Gender [m(ale), f(emale)]; and Number [s(ingular), dual p(lural)]. If one of these features is not relevant for a given verb, it will not be included.
- Nouns are glossed in the relevant number. For example, the Arabic plural *kotob* is glossed as “books”.

- Nouns, adjectives, and demonstratives are followed by a set of symbols explaining their inflectional morphology enclosed in parentheses. The order of the relevant features is: Gender [m(ale), f(emale)]; Number [s(ingular), dual p(lural)]; and case [nom(inative), acc(usative), gen(itive)]. As case is overtly marked only in Modern Standard Arabic, it will be glossed only in examples from that variety.

I also use the same guidelines for the Arabic examples I quote from other sources. However, for examples from other languages, I maintain the guidelines of the source.

1.5 Organisation of the Thesis

This thesis is organised as follows. Chapter 2 is a basic introduction to the Arabic DP. The purpose of this chapter is to familiarise the reader with the Arabic DP and introduce some background information needed to follow the subsequent chapters. In chapter 3 I discuss the issue of Head Movement, an important part of the standard analyses of the Arabic DP and propose that this type of movement should be modified to make it more compatible with minimalist syntax. In chapters 4, 5, and 6 I discuss the structure of the Arabic DP in general as well as of several types of the complex Arabic DP known as the Construct State. Each of these types is headed by a different category: nouns, quantifiers, adjectives, numerals and verbal nouns. I propose a way to explain the shared behaviour of these constructs as well as the special patterns associated with each head. Chapter 7 draws some conclusions, presents some theoretical implications of the analyses proposed and suggests some future studies.

Chapter 2

Introducing the Arabic DP

2.1 Introduction

The Arabic DP has been an interesting topic of research because its behaviour is quite complex and intricate.¹ The more closely one examines the data, the greater the number of issues that need to be explained. In this thesis, I will attempt to dissect and analyse the syntactic behaviour of the Arabic DP using data from the two varieties of Arabic introduced in chapter 1. But before that, this chapter introduces the Arabic DP in a broad sense in order to familiarise the reader with some basic facts which will be needed to follow the arguments presented in the rest of this work. I will first briefly illustrate the Arabic case system (§2.2) and then discuss the Arabic determiner system (§2.3). In §2.4 and §2.5 I will explain the basic usage and behaviour of Arabic adjectives and numerals, respectively. I will then introduce the properties of two types of DP in Arabic, simple DPs and Construct States (§2.6). In §2.7, I briefly introduce Arabic quantifiers, and in §2.8 I discuss the use of demonstratives. I will then explain the relative ordering of the different elements in the Arabic DP, particularly the ordering of modifiers with respect to one another (§2.9). In §2.10

¹Since Abney (1987), it has been generally assumed in the generative literature that a D (determiner) is projected in the structures previously analysed simply as NPs. This serves to give noun phrases a more elaborate structure, making them structurally comparable to verbal projections. Throughout this thesis, the use of the term DP will generally refer to such structures; i.e., noun phrases which occur in syntactic positions normally associated with nominal structures.

I briefly explain that the bulk of the literature on the Arabic DP assumes that at least one instance of Head Movement takes place in the derivation of the structures studied here. Finally, §2.11 concludes the chapter.

2.2 The Arabic Case System

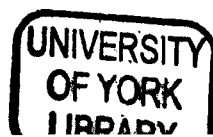
Modern Standard Arabic marks structural case overtly on nouns and on some modifiers, but Makkan Arabic does not. In this section, I will briefly explain the different cases Arabic has and how they are marked on different kinds of nouns.

Modern Standard Arabic overtly distinguishes three cases: nominative, accusative and genitive. These cases are marked on the majority of simple nouns and modifiers by affixing short vowels to the end of the word. The short vowel used for nominative is *-u*, for accusative it is *-a* and for genitive it is *-i*. For example, the nominative form of *kitaab* “book” is *kitaabu*, the accusative is *kitaaba* and the genitive is *kitaabi*. Similarly, the nominative form of the adjective *jadeed* “new” is *jadeedu*, the accusative is *jadeeda* and the genitive is *jadeedi*. However, there are some exceptions to this general rule. Sound feminine plurals² mark accusative case with *-i*, not an *-a*; the accusative form of *ṭaalibaat* “(female) students” is *ṭaalibaati*, not **ṭaalibaata*. Moreover, some nouns, called “diptotes” use the accusative ending *-a* to mark both accusative and genitive case. For example the genitive form of the name *ʔibraaheem* “Abraham” is *ʔibraaheema*, not **ʔibraaheemi*.

Dual and some plural nouns and modifiers mark case by different affixes. Nominative case is marked on dual forms by affixing *-aani*, e.g. *baabaani* “two doors”, while accusative and genitive case are marked with the affix *-aini*, as in *baabaini* “two doors”. Sound masculine plurals are marked nominative by the affix *-oona*, as in *modarrisoona* “(male) teachers”, and accusative or genitive by the affix *-eena*, such as *modarriseena* “(male) teachers”.

It is also interesting to note that Arabic adverbs are marked for accusative case.

²Arabic has two kinds of plural: broken and sound. Broken plurals show an internal change in the morphological form of the noun (eg. *kitaab* “book”, *kotob* “books”). Sound plurals, however, are formed by adding a suffix to the singular noun (eg. *moslim* “Muslim”, *moslimoona* “Muslims”).



In fact, adverbs have the same form as indefinite singular masculine accusative adjectives. For example, a word such as *sareeʿan* “fast” may be either an adjective or an adverb, as shown in (1a) and (1b), respectively.

- (1) a. raʔaito qitaara-n sareeʿa-n. (MSA)
 saw(1-s) train(m-s-acc) ind fast(m-s-acc) ind
 “I saw a fast train.”
- b. katabto al-waajiba sareeʿan (MSA)
 wrote(10s) the homework(m-s-acc) fast
 “I wrote the homework quickly.”

Makkan Arabic, however, does not mark case overtly. A given noun or adjective, such as *baab* “a door” or *jameel* “beautiful”, would have the same form whether it is used in a position associated with nominative, accusative or genitive case. As briefly mentioned in §1.2, this has led to less flexibility in the word orders permitted in this variety.

The Arabic case system is a complex one, but it generally makes a three-way distinction between nominative, accusative and genitive case. In Modern Standard Arabic, this distinction is usually encoded with three different markings, but in some cases, the markings of accusative and genitive case are the same. Nevertheless, these overt case markers are not used in the spoken variety used here, although the same case distinctions are assumed to be in use.

2.3 The Arabic Determiners

DPs in Arabic are marked as definite or indefinite using a determiner system which consists of a definite article and an indefinite article. Definite nouns in Modern Standard Arabic and Makkan Arabic are marked in the same way, but indefinite nouns are marked differently in each variety.

In both standard and spoken Arabic, definite nouns are marked with a prefix *al-*.³ The final *l* in this prefix is assimilated to the first consonant of the noun if that

³At the beginning of an utterance and in some environments in the middle of speech a glottal stop is added to the beginning of the Arabic definite article.

consonant is alveolar, i.e., a consonant which shares the place of articulation of the [l] sound.⁴ This phonological process takes place in most, if not all varieties of Arabic, including Modern Standard Arabic and Makkan Arabic, the two varieties studied in this thesis. Example (2a) shows a case without assimilation, while examples (2b) and (2c) show assimilated definite articles.

- (2) a. al-baitu (MSA)
 the house(m-s-nom)
 “the house”
- b. ar-rajolu (MSA)
 the man(m-s-nom)
 “the man”
- c. at-tollaab (MA)
 the students(m-p)
 “the students”

The status of the indefinite article is less clear. Traditionally (see Wright, 1896), and in most of the generative literature on Semitic syntax (such as Fassi-Fehri, 1989; Shlonsky, 2004; Kremers, 2003), the indefinite article in Modern Standard Arabic is considered to be nunation (or in traditional terms, *tanween*), which is the suffix *-n* used mainly on indefinite nouns. The main reason for this widespread view is the fact that nunation is in complementary distribution with the definite article, as examples (3) and (4) show.

- (3) al-baitu-(*n) (MSA)
 the house(m-s-nom) ind
 “the house”

-
- (1) ?al-kitaabu hona. (MSA)
 the book(m-s-nom) here
 “The book is here.”

Moreover, when a given word is the last word in an utterance, the case ending is dropped. However, because the majority of the examples in this thesis are DPs and not full sentences/ utterances, I will ignore these two phonological rules when transcribing. Thus, I will always transcribe the case endings (when applicable) and will not use a glottal stop before *al-*.

⁴The consonants which cause [l] to be assimilated when they are the first consonant in the word the definite article is affixed onto are: t, ʔ, d, ɗ, s, š, ʃ, ɗ, ʔ, ʕ, l and n.

- (4) (*al)-baitu-n (MSA)
 the house(m-s-nom) ind
 “a house”

Nevertheless, Fassi-Fehri (1993a, 2004) proposes that nunation is not the indefinite article in Modern Standard Arabic. He draws support for this proposal from the following data (Fassi-Fehri 1993a: 216-217).

- (5) a. (ʔal)-waladaani (MSA)
 the boys(m-d-acc)
 “(the) two boys”
- b. (al)-moʔminoona (MSA)
 the believers(m-p-nom)
 “(the) believers”
- c. moḥammadun (MSA)
 Muhammad(nom)
 “Muhammad”

Fassi-Fehri claims that the final *-n* in the examples in (5) is the nunation *-n*. Examples (5a) and (5b) have the definite article and example (5c) is a name. He argues that indefinite articles are not compatible with either of these environments. It would be a contradiction for a noun to be marked with both a definite and an indefinite article. Similarly, names (proper nouns) are inherently definite because they refer to a single individual, making their marking with an indefinite article intuitively impossible. Thus, Fassi-Fehri concludes that nunation is not the indefinite article because nunation can occur in environments where indefinite articles are not expected.

I do not accept Fassi-Fehri’s argument that the data in (5) prove that nunation is not an indefinite article. Examples (5a) and (5b) show a dual noun and a sound plural. I propose that the final *-n* is actually a part of the morphology of these nouns. I draw support for this idea from two observations. The first is that the typical cases of nunation always involve an *-n* which is not followed by any vowel, as shown in the MSA examples in (6) below. It could be suggested that there is a vowel at the end of nunation and that this vowel is dropped if it is followed by a pause, as is the case for word-final vowels in Arabic. However, this suggestion is not on the right track. As

shown in (6c), even in connected speech there is no vowel after the *-n* in *nisaaʔu-n*. The fact that a vowel is not used at the end of nunation in connected speech shows that there is no word-final vowel in nunated words.

- (6) a. baabu-n (MSA)
 door(m-s-nom) ind
 “a door”
- b. rijaalu-n (MSA)
 men(m-p-nom) ind
 “men”
- c. nisaaʔu-n jameelaatu-n (MSA)
 women(f-p-nom) ind beautiful(f-p-nom)
 “beautiful women”

However, the *-n*'s at the end of the dual and sound plural nouns cited by Fassi-Fehri are followed by a vowel *-i* ((5a) and (5b)). This supports the argument that these cases actually do not involve nunation. Moreover, the fact that the *-n* in these words is a part of the morphological form of dual and sound plural nouns can be supported by the fact that other types of plural, particularly broken plurals, do not end in this sound, as shown in (7).

- (7) a. al-kotobu(*ni) (MSA)
 the books(m-p-nom)
 “the books”
- b. al-boiootu(*ni) (MSA)
 the houses(m-p-nom)
 “the houses”

Thus, this *-n* is specific to dual nouns and one type of plurals, supporting the argument that it is morphologically governed, unlike nunation which takes the same form whichever noun it is affixed onto.

The final *-n* on the proper noun in (5c) cannot be explained using the same arguments, though. This affix is actually similar to typical nunation in that it is not followed by a vowel. However, this use of the *-n* suffix is traditionally viewed as a separate type of *tanween* (nunation) and it observes a complex system of constraints

(see Wright 1896: volume 1, 235-252). Simply put, and glossing over many issues involved, this type of nunation is used on proper nouns which consist of one part (*ʔaḥmadu-n* “Ahmad” vs. *ʿabdolahi-(*n)* “Abdullah, worshipper of Allah”) and are historically Arabic (*xaalidu-n* “Khalid” vs. *yosofu-(*n)* “Yosof, Joseph”). It is usually claimed that the purpose of nunation in these cases is to show that these nouns are “true nominals”. This type of nunation is not possible on all names, unlike the “indefinite” nunation which is allowed on all indefinite nouns.⁵ Therefore, the use of *-n* on proper names can be seen as a separate type of nunation. It does not mean that the indefinite article can be used on proper names in Arabic. It rather shows that there is more than one type of nunation in Arabic. One type of nunation marks a given noun as indefinite, whereas the other serves different purposes. Thus, in this thesis I will treat nunation on common nouns as the Arabic indefinite article.

However, in most of the spoken Arabic dialects, nunation is not used; indefinite nouns are not marked with any overt article, as shown in example (8) from Makkan Arabic. Simply, the absence of the definite article signifies indefiniteness.

- (8) bait (MA)
house(m-s)
“a house”

Therefore, I propose that the indefinite article in Makkan Arabic is null; there are at least two determiners in this dialect: the definite article, an overt prefix *al-*, and the indefinite article, which is covert.

In this section, I have outlined the determiner systems of the two varieties of Arabic used in this thesis. Both varieties share the same definite article, but the indefinite article is overt in Modern Standard Arabic and null in Makkan Arabic.

⁵Heads of Construct States, to be introduced in §2.6, are an exception to this. But this restriction is structurally governed and not specific to nunation, but also to the definite article, as will be explained in §4.2.

2.4 Adjectives

The most common use of adjectives in Arabic DPs is as modifiers. In this use, adjectives follow the noun they modify and agree with it in definiteness, number, gender and case; Arabic has noun-adjective concord. In this section I will illustrate this use of adjectives, review some of the main accounts in the literature and explain how I assume modified DPs are derived.

The normal position for adjectival modifiers in Arabic is to the right of the head noun. This is true in both Modern Standard Arabic and Makkan Arabic, as shown in (9).

- (9) a. *bintu-n* *jameelatu-n* (MSA)
 girl(f-s-nom) ind pretty(f-s-nom) ind
 “a pretty girl”
- b. *al-kombiotar* *aş-şageer* (MA)
 the computer(m-s) the small(m-s)
 “the small computer”

As the examples in (9) show, postnominal adjectives agree with the noun they modify in number, gender, definiteness and (in Modern Standard Arabic) case. For example, in (9a) both the noun *bintu* “girl” and the adjective *jameelatu* “beautiful” are feminine singular and they have nominative case markings. Moreover, both the head noun and the adjective bear nunation, which is the indefinite article in Modern Standard Arabic, as explained in §2.3. However, there is an exception to this agreement rule. Plural inanimate nouns always trigger feminine singular agreement features on the adjective, as shown in (10).

- (10) a. *al-kotobu* *al-jadeedatu* (MSA)
 the books(m-p-nom) the new(f-s-nom)
 “the new books”
- b. *al-boioot* *al-kabeera* (MA)
 the houses(m-p) the big(f-s)
 “the big houses”

Adjectives may be modified by degree adverbs, both in Modern Standard Arabic and Makkan Arabic, as shown in (53).

- (11) a. rajolu-n ʔaweelu-n jeddan (MSA)
 man(m-s-nom) ind tall(m-s-nom) ind very
 “a very tall man”
- b. ʃooʔ ʕaali marra (MA)
 voice(m-s) loud(m-s) very
 “a very loud voice”

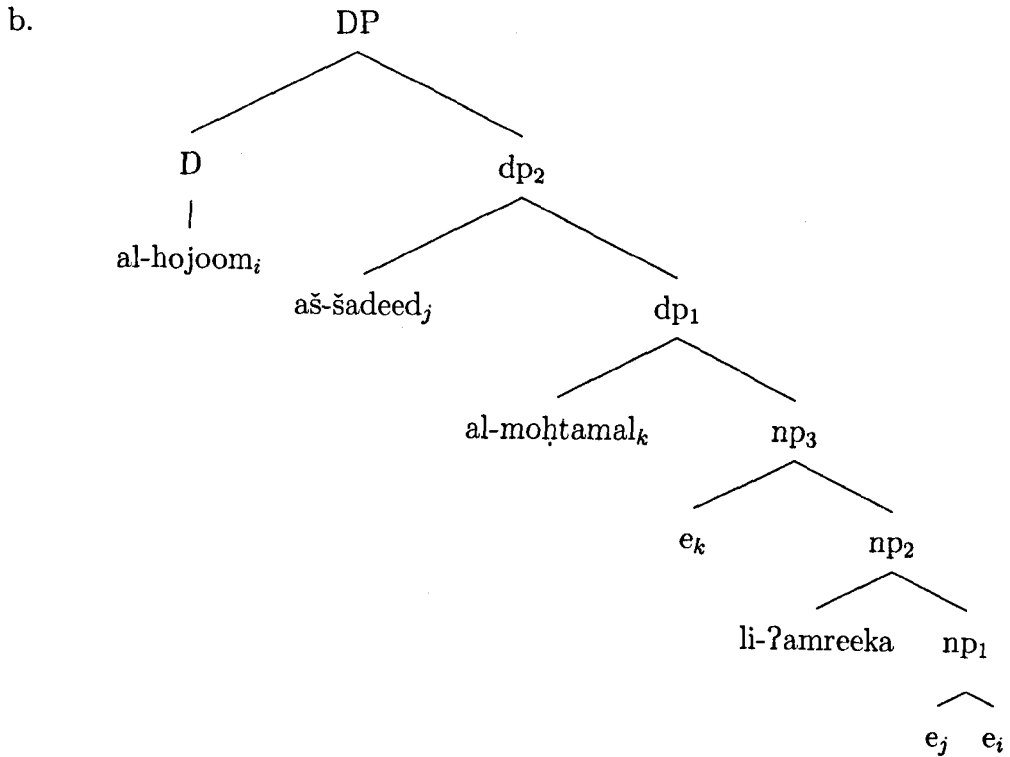
In cases where two or more adjectives are used, the adjectives are noted to observe Mirror Image Ordering (MIO); i.e., different classes of adjectives appear in the opposite order to what is observed in languages with prenominal adjectives. Fassi-Fehri (1999) notes that the respective order of certain classes of adjectives in Arabic is the opposite of that found in English, as reflected in the Modern Standard Arabic examples in (12) and their English translations (Fassi-Fehri 1999: 107).

- (12) a. al-kitaabu al-ʔaxḍaru al-kabeeru (MSA)
 the book(m-s-nom) the green(m-s-nom) the big(m-s-nom)
 “the big green book”
- b. ʃaiu-n ʃeeniu-n ʔaxḍaru-n
 tea(m-s-nom) ind chinese(m-s-nom) ind green(m-s-nom) ind
 jaiedu-n (MSA)
 excellent(m-s-nom) ind
 “an excellent green Chinese tea”

In (12a), the Arabic adjective denoting size follows the adjective denoting colour. Example (12b) shows that in Arabic origin adjectives come before colour ones, and colour adjectives come before quality denoting ones. The English translations of both examples show that the opposite orders are found in English.

There have been some proposals in the literature attempting to explain this MIO effect by assuming that the postnominal position of Arabic adjectives is derived and that this ordering is the result of a number of movement operations. In such approaches, the adjective(s) would be base generated to the left of the noun. One such account is Fassi-Fehri's (1999) analysis of Arabic adjectives. He proposes that all adjectives in Arabic are first merged to the left of the noun and that the postnominal position and the MIO effect is the result of a series of movement operations which move APs to the specifiers of higher functional projections which he calls “dps”, operating in a nesting manner, as shown in (13) (Fassi-Fehri 1999: 124).

- (13) a. al-hojoomu aš-šadeedu al-moḥtamalu
 the attack(m-s-nom) the violent(m-s-nom) the probably(m-s-nom)
 li-ʔamreeka (MSA)
 of America
 “the probable violent attack by the U.S.”



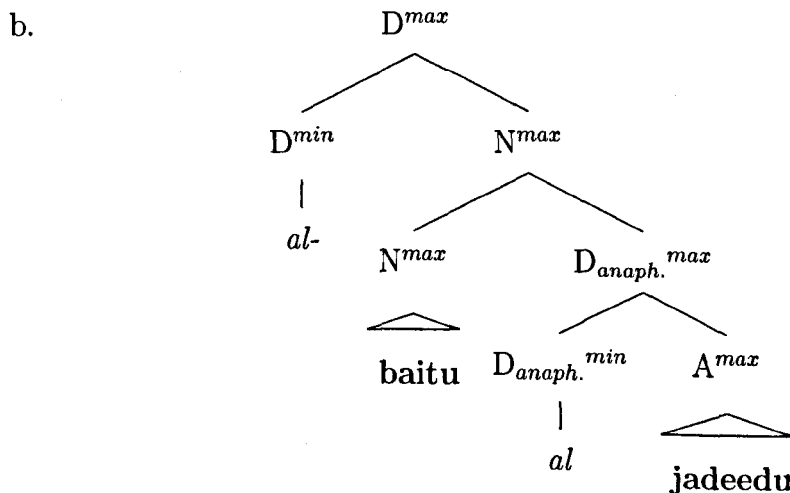
Shlonsky (2004) also assumes that adjectives are base generated to the left of nouns, but he proposes that the postnominal position of adjectives is the result of NPs moving to a position higher than adjectives. These proposals are greatly influenced by Kayne’s (1994) antisymmetrical approach to syntax, which assumes that all structures are strictly left branching. The main problem with these approaches is the fact they postulate extra projections in order to make positions for the moved elements. These projections are “created” in the course of the derivation, and this is against the Inclusiveness Condition introduced in §1.3.

Kremers (2003), however, proposes that adjectives are base generated to the right of the noun and that adjectives do not move in the course of the derivation of the Arabic DP. Moreover, he claims that the MIO is a PF phenomenon, a reflection of the linearisation procedures which apply to Arabic. In this thesis, I adopt Kremers’s position because it is more minimalist in nature than the antisymmetrical approaches.

Fassi-Fehri (1999) proposes that there are Agr features on adjectives and that it is these features which are matched with the noun to ensure agreement in number, gender and case. As for agreement in definiteness, he assumes that APs are actually DPs, but that the Ds projected above APs are anaphoric and they must be bound by a referential D, the latter being the D associated with nominal projections. Kremers (2003) assumes that each of the agreement features has its own functional projection above AP, and that Head Movement combines the head adjective with the features. Like Fassi-Fehri (1999), Kremers also assumes that there is a D projected above APs, and that this D needs to be bound by a nominal D.

In this thesis, I adopt Fassi-Fehri's approach to noun-adjective agreement in Arabic; i.e., I assume that case and phi-features are Agr features on the adjective which have to be matched and checked against those of a local noun. In other words, full concord holds between the noun and the adjective. I also adopt the idea shared by Fassi-Fehri and Kremers regarding the definiteness marking on the adjective. In other words, I assume that that definiteness agreement between an adjective and the noun it modifies is a binding relation between two Ds: an anaphoric D projected above the adjective and the D projected above the noun. Thus, I assume that a modified DP such as the one shown in (15a) is derived as shown in (15b).⁶

- (15) a. al-baitu al-jadeedu (MSA)
 the house(m-s-nom) the new(m-s-nom)
 “the new house”



⁶This analysis will be modified in 4, taking Head Movement into account.

In this section, I showed that modificational adjectives occur to the right of the noun they modify and agree with it in definiteness, number, gender and case. Following Fassi-Fehri (1993a), I assume that agreement in definiteness is the result of an anaphoric D being projected above the adjective and that number, gender and case are Agr features on the adjective which need to be checked against matching features on the modified noun. When more than one adjective are used as postnominal modifiers, the adjectives occur in MIO with respect to one another, and I claim, following Kremers (2003), that this MIO is a PF phenomenon. In the next section, I will illustrate the modificational use of numerals and claim that they behave similarly to postnominal adjectives.

2.5 Numerals

Numerals in Arabic may occur in a postnominal position, and in this use they show similar patterns and behaviour as those of adjectives. In this section I will briefly discuss the postnominal use of cardinal and ordinal numbers and suggest that these numerals are derived in the same way adjectives are.

Postnominal cardinal numbers agree with the noun they modify in definiteness and case. Agreement in gender is clear only in the case of *waḥid* “one” and *ṭiṭnaan* “two” in Modern Standard Arabic, but in Makkan Arabic gender agreement takes place only with “one”. I assume that agreement in number also takes place because number is an inherent feature on numerals. The examples in (16) are from Modern Standard Arabic, but the same patterns apply to Makkan Arabic, with the exception of overt case endings.

- (16) a. *baitu-n* *waḥidu-n* (MSA)
 house(m-s-nom) ind one(m-nom) ind
 “one house”
- b. *waraqata-n* *waḥidata-n* (MSA)
 paper(f-s-acc) ind one(f-acc) ind
 “one piece of paper”

- c. fataataani iṭnataani (MSA)
 girls(f-d-nom) two(f-nom)
 “two girls”
- d. ar-rijaalu aṭ-ṭalaatatu (MSA)
 the men(m-p-nom) the three(nom)
 “the three men”
- e. an-nisaaʔu aṭ-ṭalaatatu (MSA)
 the women(f-p-nom) the three(nom)
 “the three women”

In (16a) and (16b) the cardinal number “one” agrees with the noun it modifies in number (being singular by nature), gender, case and definiteness. It takes the form *waahid-* or *waḥīdat-* depending on whether the previous noun is masculine or feminine. Examples (16d) and (16e) show that with the number *ṭalaat-* “three”, gender agreement does not take place although case, number and definiteness agreement does. I propose that the reason for this could be that numbers from three upwards in Modern Standard Arabic (and from two upwards in Makkan Arabic) do not have a gender feature. However, this issue of agreement in numerals would require studying the properties of agreement in Arabic in detail, which is outside the scope of this thesis; therefore, I will not attempt to give an analysis here.

Ordinal numbers can also occur postnominally and agree with the nouns they modify in number, gender, definiteness (and case). The examples I use to illustrate this agreement are from Modern Standard Arabic, but the same patterns apply in Makkan Arabic as well.

- (17) a. ar-rajulu aṭ-ṭaaliṭu (MSA)
 the man(m-s-nom) the third(m-s-nom)
 “the third man”
- b. al-marʔatu aṭ-ṭaaliṭatu (MSA)
 the woman(f-s-nom) the third(f-s-nom)
 “the third woman”
- c. aṭ-ṭollaaba al-ʔawaaʔila (MSA)
 the students(m-p-acc) the first(m-p-acc)
 “the first students”

- b. qalamu-n (MSA)
pen(m-s-nom) ind
“a pen”
- c. †aoilatu-n jadeedatu-n (MSA)
table(f-s-nom) ind new(f-s-nom) ind
“a new table”
- d. fikrata-n †ani al-maaddati (MSA)
idea(f-s-acc) ind about the course(f-s-gen)
“an idea about the course”
- (19) a. al-walad (MA)
the boy(m-s)
“the boy”
- b. baab (MA)
door(m-s)
“a door”
- c. modarrisa našce†a (MA)
teacher(f-s) active(f-s)
“an active (female) teacher”
- d. waḥda †an †areeg †oxt-i (MA)
one(f-s) from road(m-s) sister(f-s) my
“someone sent by my sister”

The DPs in (18a), (18b), (19a) and (19b) each consist of only a noun and a definite or indefinite article. Examples (18c) and (19c) are modified simple DPs, consisting of a noun, an indefinite article and a postnominal adjective. In these examples, the adjectives agree with the head nouns in definiteness, number, gender (and case). Examples (18d) and (19d) consist of an indefinite noun and a PP complement. The use of a determiner is obligatory in simple DPs. In Modern Standard Arabic it is not possible to use a noun on its own without *al-* or nunation, as shown in (20).

- (20) a. (*al)-madrasatu (MSA)
the school(f-s-nom)
“the school”
- b. madrasata-(*n) (MSA)
school(f-s-acc) ind
“a school”

Although it is possible for DPs to consist of a noun without an overt determiner in Makkan Arabic, as in (19b), such a DP would be indefinite, and thus I assume that an indefinite article is in fact projected in the structure, although this article is not overt.

The second type of Arabic DP is the Construct State. This is syntactically more complex than a simple DP because the head noun, which occurs in initial position, is followed by a genitive phrase, as in (21).

- (21) *waladu* *ar-rajoli* (MSA)
 son(m-s-nom) the man(m-s-gen)
 “the man’s son”

The head of this structure is *waladu* “son”, and *ar-rajoli* “the man” is marked for genitive case. Note also that the head noun does not bear any article, which is not possible in simple DPs as noted earlier. However, the whole DP inherits the definiteness value of the genitive element. For example, in (21) *ar-rajoli* “the man” is definite and as a result the whole Construct State DP is definite, as shown in the translation provided. The test often used to determine definiteness spread is based on the fact that Arabic adjectives agree with the noun they modify in definiteness, as well as other features (see §2.4). When adjectives modify the noun head of a Construct, they occur after the genitive phrase as shown in (22).

- (22) *baitu* *al-ʔosrati* *al-kabeeru* (MSA)
 house(m-s-nom) the family(f-s-gen) the big(m-s-nom)
 “the family’s big house”

The adjective *al-kabeeru* “big” agrees with the head *baitu* “house” in gender, number and case, and therefore the adjective can only be a modifier of the head. However, the definite article is used on the adjective and the genitive phrase, but not on the head of the Construct State. The fact that a definite adjective is used to modify the head is often taken to suggest that the head is covertly definite, and that the head inherits this definiteness feature from the genitive phrase. This will be further explained and analysed in chapter 4.

Thus, Construct States can be defined as nominal structures consisting of a nominal head and a genitive component where the head does not accept determiners but

inherits the definiteness of the complement.

Construct States are used in Makkan Arabic as well, but as expected in this dialect, case is not overtly marked on genitive component.

- (23) baab al-bait (MA)
 door(m-s) the house(m-s)
 “the door of the house”

Adjectives and numerals can be used in patterns which reflect the main properties of Construct States, particularly being followed by a genitive DP and the restriction on the use of determiners on the head, as shown in (24) and (25).

- (24) jameelatu al-wajhi (MSA)
 beautiful(f-s-nom) the face(m-s-gen)
 “with a beautiful face”

- (25) ṭalaatatu ṭawlaadi-n (MSA)
 three(nom) boys(m-p-gen) ind
 “three boys”

This prenominal use differs from the postnominal use with regards to agreement. As shown in (24), the adjective does not fully agree with the following noun; the adjective *jameelatu* “beautiful” is feminine, whereas the noun *al-wajhi* “the face” is masculine. In fact, prenominal modifiers, adjectives in particular, form a number of structures and show complex agreement behaviour. For the purposes of this chapter, it is enough to note that the Construct State is one of the uses of adjectives and numerals; an adjective or a numeral may be the head of a Construct State, occurring in a position which might be seen as “prenominal” and being followed by a genitive DP. However, I will defer a detailed discussion of the various patterns of such constructs to Chapter 5.

In this section, I have introduced the two basic types of Arabic DPs - simple and Construct State - and discussed the main properties of each one of them. In short, the head noun in a simple DP obligatorily carries a determiner, but the head of a Construct State does not. Modifiers of the head noun of a simple DP directly follow it, but modifiers of the head of a Construct State come to the right of the genitive phrase. Moreover, the Construct State includes a genitive phrase and the definiteness

value of this phrase spreads to the whole DP. Adjectives and numerals may also be the heads of structures which share the basic properties of Construct States. However, this brief description oversimplifies the picture; there are many interesting patterns and issues to discuss, which I will focus on in chapters 4, 5 and 6 of this thesis.

2.7 Quantifiers

Quantifiers in Arabic can be used in four possible patterns. They can occur on their own (26a), prenominally (26b), postnominally (26c) and they may be floating (26d).

- (26) a. al-kollu (MSA)
the all(nom)
“everyone”
- b. ba^cdu al-ʔawlaadi (MSA)
some(nom) the boys(m-p-gen)
“some boys”
- c. al-ʔaʔfaalu kollu-hom (MSA)
the children(m-p-nom) all(nom) them(m)
“all the children”
- d. aʔ-ʔaalibaatu jiʔna kollu-honna. (MSA)
the students(f-p-nom) came(3-f-p) all(nom) them(f)
“all the (female) students came.”

The prenominal use of quantifiers has the typical characteristics of Construct States in that genitive case is marked on the DP following the quantifier, as shown in (26b). However, the most studied uses of the quantifiers are the ones shown in (26c) and (26d), where the quantifier is affixed to some sort of a “bound pronoun” and either follows the noun or is floating at the end of a sentence. It is sometimes proposed that the positions of the quantifier in these two cases are derived from the prenominal structure (26b) (Shlonsky, 1991a,b, for example). However, some propose that the prenominal use of quantifiers is not derivationally related to postnominal and floating ones (Benmamoun, 1999, for example). I adopt the position that these two uses are not derivationally related; I assume that prenominal quantifiers are heads of Construct States and postnominal ones are modifiers, with the option of floating.

However, it is not possible to justify this position until the structure of the Construct State is explained, and this will make exploring the relationship between the various structures and comparing the two approaches possible. Therefore, I will defer giving a detailed analysis of quantifiers till §4.7, after I have discussed the nominal Construct State in detail.

Like adjectives and numerals, quantifiers can be used prenominally or postnominally. In their prenominal uses, these categories head Construct State constructions. In their postnominal use, they all function as modifiers. In the next section, I will discuss demonstratives, which superficially resemble adjectives, numerals and quantifiers because they can also be used prenominally and postnominally. Nevertheless, there are significant differences between the prenominal use of demonstratives on the one hand and of the other modifiers on the other, suggesting that prenominal demonstratives do not form Construct States.

2.8 Demonstratives

Demonstratives in Arabic are sometimes treated as modifiers because, like other modifiers, they can be used prenominally and postnominally. However, there are important differences between modifiers on the one hand and demonstratives on the other, especially in their prenominal use. In this section, I will discuss the two uses of demonstratives. I will argue that postnominal demonstratives are modifiers whereas prenominal ones are projected above D.

There are two demonstratives in Modern Standard Arabic, one expresses proximity of the object to the speaker (proximal demonstrative) *haada* “this” and another for lack of proximity (distal demonstrative) *daak* “that”. Each one of these demonstratives inflects for number, gender and sometimes case, giving a complex grid of forms. Makkan Arabic also has two basic demonstratives *haada* “this” and *hadaak* or *daak* “that”, and each one also inflects for number and gender.

There are two possible positions for demonstratives in both Modern Standard Arabic and Makkan Arabic. A demonstrative may either follow or precede the noun,

and in both cases, the definite article must be affixed onto the noun.

- (27) a. haada *(al)-waladu (MSA)
 this(m-s) the boy(m-s-nom)
 “this boy”
- b. *(al)-waladu haada (MSA)
 the boy(m-s-nom) this(m-s)
 “this boy”

Whether the demonstrative precedes or follows the noun, it agrees with it in number and gender. Examples (28a) and (28b) show agreement in gender, as the demonstrative has feminine inflection both when it is before after the noun. Examples (28c) and (28d) show that both prenominal and postnominal demonstratives agree in number, as the form of the demonstrative used is the plural one.

- (28) a. haadihi al-fataatu (MSA)
 this(f-s) the girl(f-p-nom)
 “this girl”
- b. al-fataatu haadihi (MSA)
 the girl(f-p-nom) this(f-s)
 “this girl”
- c. haaʔolaaʔi ar-rijaalu (MSA)
 these(m-p) the men(m-p-nom)
 “these men”
- d. ar-rijaalu haaʔolaaʔi (MSA)
 the men(m-p-nom) these(m-p)
 “these men”

In Modern Standard Arabic, demonstratives do not overtly inflect for case, except for the dual proximal ones, as shown in the contrast in the form of the demonstratives in (29a) and (29b).

- (29) a. haadaani al-kitabaani (MSA)
 these(m-d-nom) the books(m-d-nom)
 “these two books”
- b. haadayni al-kitabaini (MSA)
 these(m-d-gen) the books(m-d-gen)
 “these two books”

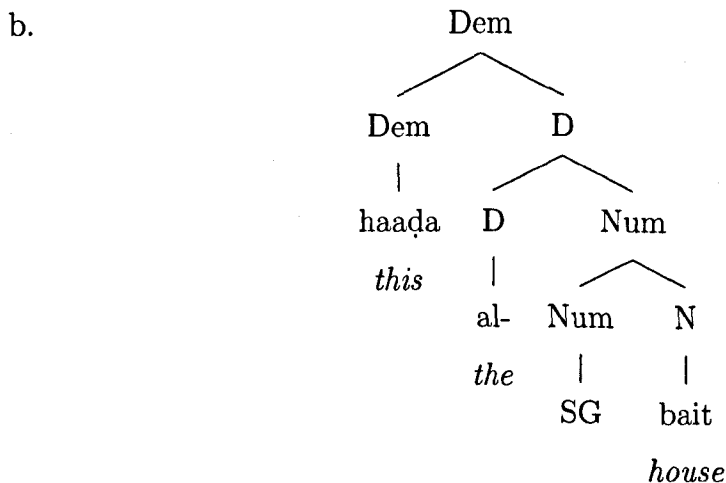
Given the fact that dual proximity demonstratives inflect for case, I will assume that all demonstratives agree in case, albeit it covertly.

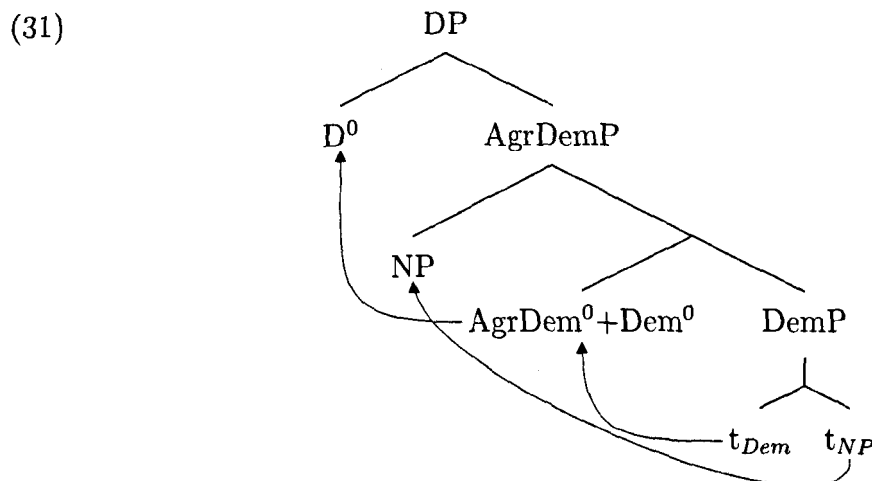
Demonstratives are different from the Arabic modifiers discussed in this chapter in that demonstratives behave in the same way whether they occur before a given noun or after it. In both positions, demonstratives agree with the noun in number, gender and case. As explained in §2.6, the other modifiers show agreement only when they occur postnominally, not prenominally. Moreover, whereas the DPs following prenominal adjectives, numerals and quantifiers are marked for genitive case, demonstratives agree in case with the following DP and do not impose any specific case on it. These facts suggest that prenominal demonstratives do not form Construct States, and as such they require a special analysis.

Kremers (2003) and Shlonsky (2004) treat the two positions of Arabic demonstratives as derivationally unrelated. They argue that prenominal demonstratives are heads of a Dem(onstrative) projection, whereas postnominal ones are modifiers.

Both Kremers (2003) and Shlonsky (2004) propose that prenominal demonstratives are not modifiers, but that they are heads of a Dem projection. The difference between the two proposals is that Kremers projects “Dem” above “D” ((30) from Kremers (2003: 67)), whereas Shlonsky projects “Dem” below “D” and assumes that Dem moves and adjoins to D ((31) from Shlonsky (2004: 1502)).

- (30) a. *haaḍa al-baitu* (MSA)
 this(m-s) the house(m-s-nom)
 “this house”





In Kremers's system, agreement features are on the demonstrative itself, whereas in Shlonsky's proposal, agreement between the noun and the demonstrative takes place in a head/spec configuration in an Agr projection. Kremers's analysis explains the order Demonstrative-Definite Article-Noun in a straightforward way. The demonstrative is projected above D. However, Shlonsky assumes that the demonstrative is adjoined to D. This is not supported by the data, since the definite article, which is a prefix, is not affixed onto the demonstrative, but onto the following noun. If it were affixed onto the demonstrative, the word order would be Definite Article-Demonstrative-Noun, since the definite article is a prefix, not a suffix.⁸ Thus, I adopt Kremers's analysis because it is supported by the data; prenominal demonstratives occur in a separate Dem projection above D.

Kremers (2003) and Shlonsky (2004) consider postnominal demonstratives to be modifiers, similar to adjectives. This is because the behaviour of these demonstratives is similar to typical Arabic modifiers; they agree with the noun they modify in number, gender and case. I follow Kremers and Shlonsky in this assumption, and I assume that definiteness agreement takes place in this case as well. I have pointed

⁸Ihsane (2003) analyses Moroccan prenominal demonstratives in way that shares some elements of Shlonsky's (2004) one. She projects Dem below the definite article, and then moves the demonstrative and adjoins it to the "Def" head. She draws support for this idea from the fact that prenominal demonstratives in Moroccan Arabic are contracted forms consisting of a demonstrative and a definite article. However, that analysis could be correct for varieties like Moroccan Arabic, but it is hard to extend it to other varieties of Arabic where the same dependency between the demonstrative and the definite article does not exist.

out at the beginning of this section that demonstratives obligatorily co-occur with a definite noun, as shown in (27); thus, I propose that demonstratives have an inherent definite feature, and this feature matches the definite feature of the definite article on the noun.

The data discussed in this section suggest that prenominal and postnominal demonstratives are derived differently. Prenominal demonstratives are Dem heads projected above D, whereas postnominal demonstratives are modifiers which are right adjoined to the maximal N projection. Under this approach, in their postnominal use, demonstratives are similar to other Arabic modifiers, whereas their prenominal use is different from the prenominal use of modifiers. In the next section, I will discuss the relative order of the different types of Arabic modifiers with respect to one another and to the head of the DP and show that their order differs depending on whether they are used prenominally or postnominally.

2.9 Word Order in the Arabic DP

Arabic DPs may include a range of postnominal modifiers: adjectives, numerals, quantifiers and demonstratives. Each one of the first three categories may be used prenominally as the head of a Construct State. Demonstratives may also be used prenominally, but in this case they are the heads of a Dem projection, not a Construct State. In both their postnominal and prenominal uses, these “modifiers” may be used in combinations. However, the order they occur in with respect to one another is different in each case.

It is often noted in the literature that postnominal modifiers in Arabic observe Mirror Image Ordering (MIO); i.e., modifiers appear in an order which is opposite to that observed in languages with prenominal modifiers (Fassi-Fehri, 1999; Kremers, 2003; Shlonsky, 2004, and others). Fassi-Fehri (1999) gives the order in (32) for postnominal modifiers in Arabic.

(32) N > A > Num > Card > Ord > Dem > Quant

(Fassi-Fehri 1999: 114)

Some of these orderings can be observed in the following examples.

- (33) a. al-ʔawlaadu al-kibaaru aṭ-ṭalaatatu ʔolaaʔika
 the boys(m-p-nom) the old(m-s-nom) the three(nom) those
 kollu-hom (MSA)
 all(nom) them
 “all those three old boys”
- b. ar-rijaalu aṭ-ṭaieboona haaʔolaaʔ kollu-hom
 the men(m-p-nom) the kind(m-p-nom) these all(nom) them
 (MSA)
 “all these kind men”

In (33a), the order of the postnominal modifiers is adjective, numeral, demonstrative, quantifier, and in (33b), the adjective comes first, followed by the demonstrative and then the quantifier. As is clear from the English translation, this is the opposite of the order found in a language with prenominal modifiers. Following Kremers (2003), as pointed out in §2.4, I assume that this ordering is a PF phenomenon regulated by the linearisation rules of Arabic.

When these categories are used preminally, the order they occur in is the opposite to that of postnominal modifiers, as shown in (34).

- (34) a. kollu haaʔolaaʔi aṭ-ṭalaatati al-ʔawlaadi (MSA)
 all(nom) these the three(gen) the boys(m-p-gen)
 “all these three boys”
- b. kollu haaʔolaaʔi ar-rijaali aṭ-ṭaiebeena (MSA)
 all(nom) these the men(m-p-gen) the kind(m-p-nom)
 “all these kind men”

Contrasting (33a) and (33b) on the one hand and (34a) and (34b) on the other shows that prenominal and postnominal modifiers occur in the opposite order with respect to one another. While the order is numeral-demonstrative-quantifier in (33a), the mirror order of quantifier-demonstrative-numeral is found in (34a). Similarly, the quantifier follows the demonstrative in (33b) but precedes it in (34b). Since all prenominal “modifiers” are heads of their own projections, I take this ordering to be a matter of categorial selection; each head selects what type of complement it takes.

To summarise, Arabic adjectives, numerals, quantifiers and demonstratives can be used either before or after nouns. Prenominally, these four categories are the heads of their own projections, taking the noun (or D in the case of demonstratives) as a complement. Postnominally, however, they are modifiers and they agree with the noun they modify in definiteness, number, gender and case. These categories may co-occur with each other, and their relative ordering is different in each of the two uses. So far in this chapter, I did not discuss how the Arabic DP itself, regardless of the modifiers, is derived. In the next section, I will briefly mention one common element in the analyses proposed for the derivation of the Arabic DP: Head Movement of N-to-D.

2.10 The Arabic DP and Head Movement

It is often assumed in the literature that the derivation of the different types of the Arabic DP involves at least one instance of Head Movement in the sense of Travis (1984), where one head moves and adjoins to the immediately higher head. Usually, this movement is assumed to be N-to-D as shown in (35).



For simple DPs, the main motivation for this movement is often the affixal nature of determiners in Arabic (Fassi-Fehri, 1993a, for example). However, some propose that the movement of N-to-D takes place in some cases but not in others. For example, Kremers (2003) argues that N moves to D only when D is the indefinite article. Shlonsky (2004) proposes that Head Movement takes place in Semitic languages only if the attracting head does not assign genitive case. For example, as mentioned in §2.8, he assumes that prenominal demonstratives - which do not endorse genitive case

on their complements - move to D, but he argues that the other prenominal modifiers, which require genitive case on the complements, do not move to D. Nevertheless, even in those systems where Head Movement is not always involved, this type of movement is still used at least in some structures.

However, the status of Head Movement as standardly defined, where a head moves and adjoins to a higher head as shown in (35) above, has recently been challenged, and there has been a theoretical debate in the literature about whether this operation is compatible with the principles of minimalist syntax. In chapter 3, I will discuss standard Head Movement in detail, explain why it has been challenged recently, review the literature which attempts to resolve the theoretical issues involved and explain my approach to the problem.

2.11 Conclusion

In this chapter, I have given a bird's eye view of the Arabic DP. I have explained the Arabic determiner system, which marks definiteness by a prefix *al-* and indefiniteness by a suffix *-n*. I have introduced two basic types of DP, Simple and Construct State, and explained the basic properties of each. Simple DPs consist of a determiner and a head noun and optional modifiers, whereas Construct States consist of a head noun and a genitive phrase. I also discussed the postnominal use of several Arabic modifiers. I pointed out that these modifiers may also occur prenominally, and that in this position adjectives, numerals and quantifiers have characteristics of Construct States, whereas demonstratives do not. At the end of the chapter I pointed out that standard Head Movement has repeatedly been proposed to be a part of the derivation of the Arabic DP. However, this movement has lately been considered to be theoretically problematic. Before discussing Head Movement in the context of the Arabic DP, I will present a general review of this movement and the theoretical issues related to it and propose that standard Head Movement can be modified to make it more compatible with current syntactic assumptions.

Chapter 3

Head Movement in Current Linguistic Theory

3.1 Introduction

Syntactic Head Movement has been used in the generative literature to account for a wide range of data in a large number of languages, including the structure of the Semitic DP, as pointed out in §2.10. This syntactic operation is usually thought to be a basic part of syntactic theory. However, minimalist requirements of recent approaches have put Head Movement under scrutiny, leading to various proposals to banish this movement from syntax or at least modify the way it operates in order to make it more harmonious with the latest developments in syntactic theory. Nevertheless, if Head Movement in the “standard” sense is to be modified in one way or another, alternative analyses would have to be provided in order to accommodate the data previously explained by this movement operation.

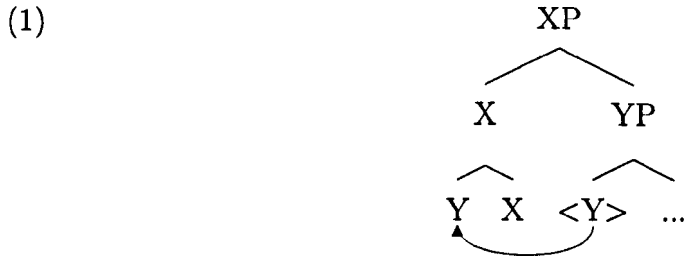
In this chapter, I will investigate the bases of the proposals which attempt to exclude or modify Head Movement, with the aim of evaluating the different arguments to decide whether or not they are valid. I will also review some proposed routes for reanalysing this movement operation in order to provide more “minimalist” analyses for the data standard Head Movement has been used to explain. I will then lay out the details of a head-to-spec account of Head Movement, mainly adopting Matushansky’s

(2006) account in claiming that syntax and morphology both play a part in Head Movement. However, I will address some of the problems in Matushansky's account and suggest some alternatives to some of the details of her proposal. My main contribution to this account is proposing an alternative approach to the morphological part of the analysis, especially in how this relates to multiple Head Movement.

In §3.2, I will introduce standard Head Movement and illustrate the way it operates by presenting some of the structures it has been used to explain. In §3.3 I discuss the recent proposals which claim that a minimalist system should have only one type of movement, and that Head Movement should be either treated as a post-syntactic operation or be redefined to make it more "similar" to Phrasal Movement. I will also investigate the claim that Head Movement lacks semantic effects and consider some proposed semantic effects of certain cases of Head Movement (§3.4). In §3.5 I evaluate the proposal that Head Movement must be a part of morphology and discuss some of the implications of that approach. In §3.6 I will discuss and evaluate the main issue raised against Head Movement: its violation of the Extension Condition. In §3.7 I will present some of the major proposals in the literature to reformulate standard Head Movement in order to overcome the theoretical problems it has been claimed to have, and in §3.8 I explain the reanalysis proposal I adopt, which consists of two basic elements, one syntactic and one morphological. Finally, §3.9 concludes the chapter.

3.2 Standard Head Movement

In early syntactic theories, movement or displacement was considered a major part of syntactic derivations. It was assumed that both heads and phrases move, and each type of movement was proposed to have different constraints. Because of the distinction between head positions and phrasal positions (see Emonds, 1976), heads were assumed to move to other head positions; i.e., moved heads were adjoined to higher heads, as shown in (1).



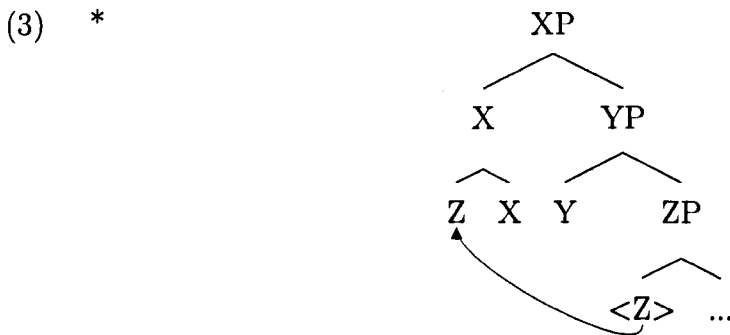
Head Movement (HM) was claimed by Travis (1984) to be subject to the Head Movement Constraint (HMC) quoted in (2), a claim which was generally accepted in the literature.

(2) **Head Movement Constraint (HMC):**

An X^0 may only move into the Y^0 which properly governs it.

(Travis 1984: 132)

Essentially, the HMC states that HM may not potentially cross over one head to adjoin to a higher one.



The HMC is essentially very similar to other movement-regulating/restricting principles in syntactic theory in the framework of Government and Binding and earlier, such as Relativized Minimality (Rizzi, 1990).¹ The reason heads were assumed to target higher heads and not specifier positions, for example, is mainly because syntactic theory at that time made clear distinctions between head positions and phrasal positions and there was a requirement for movement to maintain the head vs. phrase

¹The basic idea of Relativized Minimality is that a constituent or a node X cannot be attracted (and moved) if there is a closer node Y that can potentially be targeted, and Y c-commands X. In the same way, standard Head Movement may not skip over one head to target another head lower in the structure.

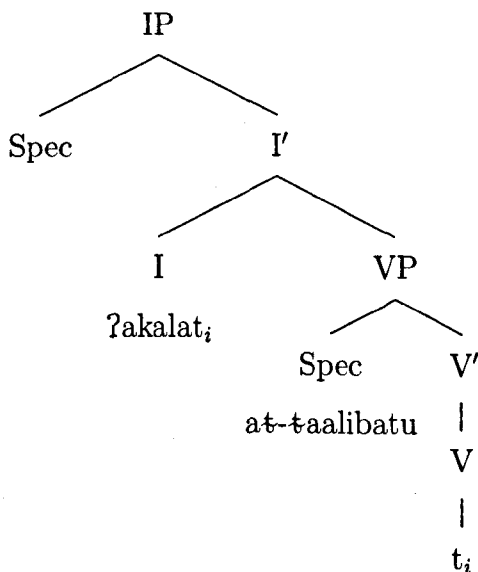
distinction. Thus, a head would be required to move to a head position and a phrase would be required to move to a phrase position, following the Structure Preservation Constraint of Emonds (1976), which will be defined and discussed in §3.7.

Head Movement has been used to account for a wide range of structures including VS word order in Arabic (Fassi-Fehri, 1993a; Ouhalla, 1994, and others) and Verb Second (V2) in Germanic languages (Travis, 1984; Schwartz and Vikner, 1996, and others) in the verbal domain, and Semitic Construct States in the nominal domain (Ritter, 1989; Borer, 1999, and others). These cases are representative of the major application of of HM: V-to-I, I-to-C and N-to-D movements. I will briefly illustrate each one of these cases.

Several people have proposed that verbs in Arabic move to I (Fassi-Fehri, 1993a; Plunkett, 1993; Benmamoun, 1997; Harbert and Bahloul, 2002; Parkinson, 1995). For example, Benmamoun (1997) considers the optional VS order in Arabic sentences to be the result of V-to-I movement, with the subject staying in situ. He analyses the sentence in (4a) as (4b) (Benmamoun 1997: 34-35).

- (4) a. *ʔakalat at-ʔaalibatu.* (MSA)
 ate(1-f-s) the student(f-s-nom)
 "The student ate."

b.



Another major case of Head Movement is I-to-C. This movement is usually assumed to take place in V2 languages, such as German, resulting in a verb always

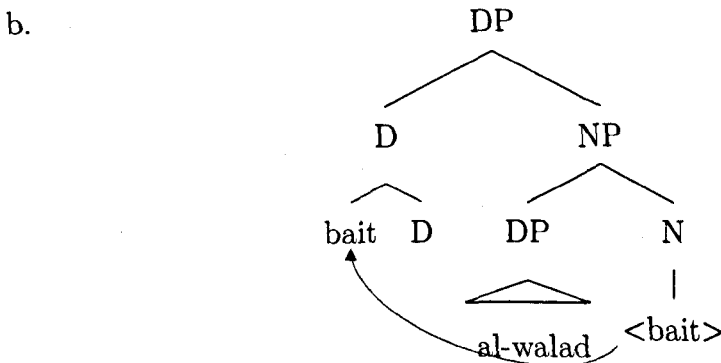
being in the second position in matrix clauses. For example, in (5), from Travis (1984: 110), the finite auxiliary moves to the second position in the sentence, moving first to I and then to C.

- (5) Die Frau hat das Buch gelesen (German)
 the woman has the book read
 "The woman has read the book."

The nonfinite verb *gelesen* stays in its merge position; The fact that it cannot move to I and skip over the auxiliary can be explained by the Head Movement Constraint: V is not able to move to I because I is not the head immediately higher than V.

The Semitic Construct State, the genitive construction briefly introduced in §2.6, is generally claimed to involve at least one instance of Head Movement, usually assumed to be N-to-D (Borer, 1999; Fassi-Fehri, 1989, 1993a; Mohammad, 1990; Ritter, 1987; Siloni, 1991, and others). Under these approaches, the Arabic Construct State DP in (6a) could be represented as in (6b).²

- (6) a. bait al-walad (MA)
 house(m-s) the boy(m-s)
 "the boy's house"



There have been reports in the literature of (apparent) violations of the Head Movement Constraint, what might be taken to be "Long Head Movement" (Lema and Rivero., 1990; Lema and Rivero, 1992; Rivero, 1991, 1993; Bennis, 1992; Roberts, 1994). An example of a structure which has been proposed to involve Long Head

²Construct States will be extensively discussed in chapters 4, 5 and 6 of this thesis. The analysis presented here is simplified because this structure is used here only as an example of structures analysed using standard Head Movement.

Movement is one where a nonfinite verb is moved, skipping over an auxiliary, as in the Bulgarian sentence in (7) (Lema and Rivero. 1990: 334).

- (7) PROČEL sŭm knigata (Bulgarian)
 READ have+Pres+1s book+the
 “I have read the book (completely).”

In order to resolve the conflict between these cases and the Head Movement Constraint, some have argued for reducing the Head Movement Constraint to more general principles such as the Empty Category Principle (ECP)³ (Chomsky, 1991; Lema and Rivero., 1990; Roberts, 1994, for example), whereas others offered alternative analyses to these structures, ones which do not violate the Head Movement Constraint (Pollock, 1989; Caink, 1999).

As briefly shown in this section, standard Head Movement has been a useful method for analysing a variety of syntactic structures in different languages. However, in the last decade, Head Movement started to be criticised as being incompatible with the Minimalist Program (Boeckx and Stjepanovic, 2001; Chomsky, 1999, 2000; Mahajan, 2000, and others). In the rest of this chapter, I will briefly evaluate the major arguments presented against Head Movement and discuss proposals attempting to resolve them.

3.3 Head Movement vs. Phrasal Movement

It has been suggested in some recent work that it is against the spirit of Minimalism to have both Head Movement and Phrasal Movement in syntactic theory since these two types of movement have rather different mechanisms and constraints (Chomsky,

³The ECP was defined in, Chomsky (1981) as (1).

- (1) The Empty Category Principle (ECP): [αe] must be governed (in some sense).

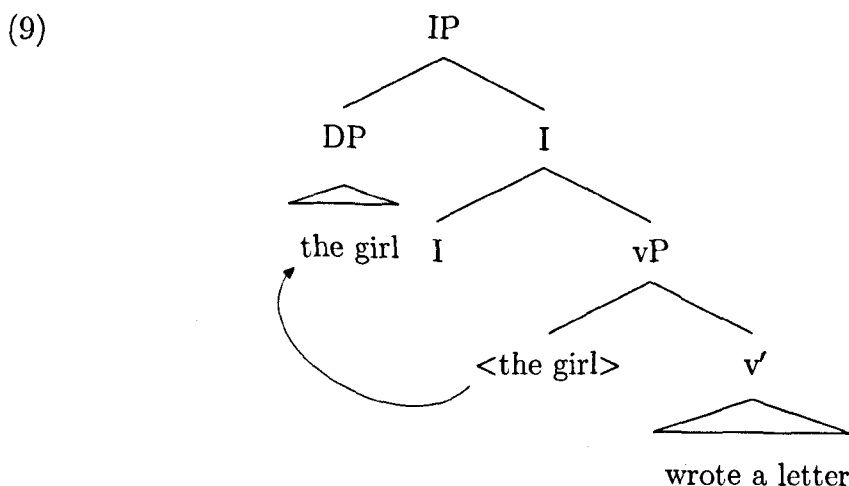
(Chomsky 1981:250)

This principle, however, is not compatible with current minimalist approaches because “government” is no longer a definable relation in syntactic theory.

1999, and others). In this section I will explain this idea and then review some of the literature which tries to resolve this issue.

Head Movement and Phrasal Movement are standardly assumed to move “heads” and “phrases” to different positions in the phrase marker. On the one hand, standard Head Movement, as explained in §3.2, moves a head and adjoins it to the immediately higher head; i.e., it targets “head positions”.⁴ On the other hand, Phrasal Movement targets “phrasal positions”. For example, the subject in the English sentence in (8) is assumed to move from *spec/v* to *spec/I*, as shown in (9).

(8) The girl wrote a letter.



Chomsky (1999: 31) claims that Head Movement and Phrasal Movement have different checking mechanisms. While the relevant features can be checked via head adjunction in Head Movement, a moved phrase checks a feature if it lands in the specifier of the attracting head. Chomsky illustrates this idea using subject-to-*spec/T* and *V-to-T* movement in verb raising languages. Assuming that in this case *T* has both a strong [*uV*] feature and a strong [*uN*] feature, both features need to be checked. In a system which includes both standard Head Movement and Phrasal Movement, the two uninterpretable features are checked in different ways. The [*uV*] feature is checked by moving and adjoining *V* (a head) to *T*, whereas the [*uN*] feature is checked by moving a nominal (phrase) to *spec/T*. If there are two checking mechanisms, why can't they be used interchangeably? For example, why can the [*uV*] feature not be

⁴In §3.7 I will argue against the notion of “head positions” as such.

checked by moving a VP to spec/T? Similarly, why can a D or an N, for instance, not adjoin to T in order to check T's [*u*N] feature.⁵

Another difference between these two kinds of movement relates to locality restrictions. Head Movement seems to be more local than phrasal movement. Head Movement can apparently only raise a head to the immediately higher one, as discussed in §3.2. On the other hand, Phrasal Movement can skip a projection and land in the specifier position of a higher one. For instance, the *wh*-phrase in (10) is initially merged as an argument of the verb. The *wh*-word first moves to spec/*v*; in this position, the *wh*-word is at the edge of the *v*-phase and can be accessed by probes in the higher phase, in accordance with the Phase Impenetrability Condition (PIC) (Chomsky 2000: 108) introduced in §1.3. The *wh*-word then moves from spec/*v* directly to spec/C, skipping over the I projection.⁶

(10) What did he <what> eat <what>?

The diagram shows the sentence "What did he <what> eat <what>?". A horizontal line is drawn below the words "did he <what> eat". From the left end of this line, an arrow points up to the word "What". From the right end of the line, an arrow points up to the word "<what>".

Some linguists have accepted the argument that Head Movement and Phrasal Movement are different and have adopted the position that having two kinds of syntactic movement operations is not desirable. In order to make the theory more minimalist, some opt for minimising the differences between these two operations and perhaps unifying Head Movement and Phrasal Movement into one kind of movement (Mahajan, 2003; Matushansky, 2006; Vicente, 2007, for example). Some others, however, prefer to banish Head Movement from syntax to a post-syntactic level, namely PF, leaving Phrasal Movement as the only syntactic movement (Boeckx and Stjepanovic, 2001, and others).

⁵Alexiadou and Anagnostopoulou (1998, 1999) propose that in Null Subject languages, EPP features can be checked by adjoining a V^0 to I. This proposal is not directly related to the issue Chomsky raises. Alexiadou and Anagnostopoulou parameterise the checking mechanism in regard to different languages. Chomsky, however, asks why the two different mechanisms are not available in the same language. Moreover, Alexiadou and Anagnostopoulou's system involves raising DPs or V^0 s, different projections of different lexical items. Chomsky's question, on the other hand, relates to the maximal vs. minimal projections of the same lexical item.

⁶This of course is an oversimplification of the locality condition on phrasal movement, but it suffices for the present purposes.

An example of the first approach is Mahajan (2003). He proposes a system whereby Head Movement is analysed as remnant phrasal movement targeting the specifier position of the attracting head. The main goal of his system is to provide an antisymmetric analysis where both subject-object-verb (SOV) and subject-verb-object (SVO) languages have the underlying word order SVO.

Mahajan makes the following assumptions. He assumes that the object DP universally moves leftwards inside the VP, landing in spec/V, and that VPs uniformly land in the specifier of I to check I's V feature. He argues that the order of the object with respect to the verb depends on whether or not the object vacates the VP before the latter moves to spec/I. He proposes that in SVO languages, the object DP moves out of the VP and lands in the specifier of a higher Det projection before the VP moves, as shown in (11).

(11) SUB [_{VP} t'_{OBJ} V t_{OBJ}] OBJ [_{PredP} t_{SUB} t_{VP}]

(Mahajan 2003: 224)

On the other hand, he proposes that in SOV languages the object does not move any further than spec/V, and that the whole VP moves and lands in spec/I.

(12) SUB [_{VP} OBJ V t_{OBJ}] [_{PredP} t_{SUB} t_{VP}]

(Mahajan 2003: 224)

In his system, apparent verb movement is proposed to be (remnant) Phrasal Movement.

Mahajan's (2003) proposal requires several movement operations in order to derive the different word orders, and some of these movement operations have not been properly motivated. He claims that the movement of the object inside the VP is universal, but this claim has to be investigated with regard to a large number of languages before it is accepted. Mahajan tries to maintain the antisymmetrical assumption that all languages share a basic word order, but in order to do that he has to take an indirect route, resulting in a less "minimalist" system. One has to question whether such an approach is the appropriate solution to the issue of Head Movement. Citko (2008b,a) argues that this approach seems "ad hoc" when considered in relation

to other cases of Head Movement, and that such accounts make unmotivated claims about movements and positions. Roberts (to appear) also argues against remnant movement approaches to Head Movement and points out that sometimes there are no “clear triggers” for some of the movements proposed.

Matushansky (2006) and Vicente (2007), to be discussed in detail in §3.6, also propose a unified treatment of Head Movement and Phrasal Movement; they propose that both kinds of movement can target the specifier of the attracting head. Head-to-spec movement has also been defended in work by Toyoshima (2000, 2001) and others. On the one hand, these proposals share one element of Mahajan’s (2003) analysis, which is the landing site of the movement. On the other hand, they are different because Mahajan’s approach tries to prevent heads from moving independently, whereas the other approach (as in Matushansky, 2006; Vicente, 2007, and others) allows heads to move but claims that they do not adjoin to higher heads but rather land in specifier positions.

The other approach to the issue of two types of movement is to banish Head Movement from the domain of syntax, an approach advocated in Chomsky (1999) and Boeckx and Stjepanovic (2001). They draw support for their proposal from a psycholinguistic study by Grodzinsky and Finkel (1998), which Chomsky and Boeckx and Stjepanovic take to suggest that the two types of movement have different effects on the performance of aphasics, supporting the hypothesis that each type takes place in a different system.

Grodzinsky and Finkel analyse aphasic’s grammaticality judgements of sentences involving traces of moved XP’s and X⁰’s. They adopt the Trace Deletion Hypothesis (TDH), which states that traces of phrasal movement are deleted in aphasic’s grammatical representations (Grodzinsky, 1986). Grodzinsky and Finkel claim that if traces are essential in determining the grammaticality status of a given sentence, aphasics will fail to process the sentences, resulting in loss of comprehension. Grodzinsky and Finkel (1998) report a higher error rate in grammaticality judgements of XP movement (such as subject raising and wh-movement, i.e. NP movement) than those of X⁰ movement (such as subject auxiliary inversion, i.e., I-to-C), supporting the

hypothesis that the TDH relates only to traces of phrases, but not heads.

Chomsky (1999) and Boeckx and Stjepanovic (2001) take Grodzinsky and Finkel's findings to support the idea that Phrasal Movement and Head Movement are in fact different operations. Chomsky (1999) suggests that a phonological treatment of Head Movement would explain the discrepancy in the way traces of the two kinds of movement are represented in aphasic's grammar. Given that the syntactic representations of aphasics are impaired, if Phrasal Movement, but not Head Movement, takes place in the syntax, it follows that the impairment will affect only traces left by the former, not the latter.

The findings of Grodzinsky and Finkel (1998)'s study, however, are open to interpretation. There could be an independent reason why aphasics treat traces of heads differently from traces of phrases. Different behaviour does not necessarily entail that Head Movement and Phrasal Movement take place at different systems. For example, it could be the case that traces of minimal vs maximal projections are treated differently, or that the deletion process can affect only maximal projections. Moreover, the TDH itself has been challenged (Caramazza et al., 2005; O'Grady and Lee, 1991, for example). Thus, alternative interpretations for the data might be available under different approaches.

In this section I presented one of the arguments sometimes used to suggest that Head Movement should not be a syntactic operation: that it is more economical to have one syntactic movement operation rather than two. It is true that a more minimalist system would have the smallest *possible* number of operations and constraints, but only as long as the reduction does not render some data inexplicable. In other words, a system which has one kind of syntactic movement is superior if and only if it is able to account for at least the same range of data as a system with two (or more) kinds of movement. Thus, applying Ockham's razor to this aspect of syntactic theory does not necessarily produce optimal results if the data supports allowing both heads and phrases to move. Thus, the strength of this argument against an independent Head Movement mechanism seems not to be sufficient on its own.

3.4 Head Movement and Meaning

Chomsky (1999) claims that Head Movement does not have an effect on meaning, suggesting that this movement does not take place in the domain of syntax. In this section, I will explain why Chomsky proposes that Head Movement lacks semantic effects and then present some arguments in the literature which attempt to prove that there are in fact meaning effects of Head Movement.

Chomsky (1993) has proposed that all languages should have uniform syntax and that any idiosyncracies should be attributed to the interface levels: Phonetic Form (PF) and Logical Form (Lf). Chomsky (1999: 30) claims that verb movement does not have any effect on meaning, in the sense that verbs are interpreted in the same way in all languages whether these languages raise verbs or not, suggesting that verb position is an “idiosyncrasy”. Thus, Chomsky argues, verb movement should take place at PF. In other words, the structure sent to LF would have the verb in its base-generated position in all languages. Any change in verb position is expected to take place at PF, and the movement would be triggered at that interface level and governed by its principles. Since the structure would have been sent to LF prior to the movement, there would be no effect on meaning. This idea, however, is not as straightforward as it seems.

Matushansky (2006) claims that Chomsky’s argument does not really relate to whether or not Head Movement has semantic effects. This is because what Chomsky (1999) is referring to is the meaning of individual lexical items, in this case verbs. Matushansky notes that movement may change the meaning of the totality, not of individual words or constituents. Vicente (2007) also notes that the most widely studied case of Head Movement, V-to-I, which is the case Chomsky (1999) uses to illustrate his idea, does not involve movement of any quantificational heads, hence the lack of a clear effect on interpretation. Thus, the question should really be whether there are cases where Head Movement affects the meaning or semantic representation of a whole structure.

Matushansky (2006) constructs an argument based on the scopal interpretation of modals to show that Head Movement does have semantic effects and consequently

should be considered a syntactic operation. She argues that modals interact with negation in their scopal interpretation, and that this interaction is affected by movement. For example, Matushansky claims that in (13) (Matushansky 2006: 104) the universal modal *should* takes scope over negation.⁷

- (13) Yolanda shouldn't leave. Mod > Neg

Assuming that the modal is base generated in a verbal projection below negation, for the modal to outscope negation the modal must move before the structure reaches LF - as a part of the structure's syntactic derivation. If the structure were sent to the interface levels with the modal in the scope of negation and the modal only moved at PF, the scopal interpretation of the modal would not be derivable. This is because when the structure is spelled out and sent to the interface levels, the modal would be in the scope of negation at LF. Even if the modal moves at PF, that would not affect the the scopal configuration already sent to LF.⁸

Lechner (2006, 2007) constructs another argument to prove that Head Movement can in fact have semantic effects. His argument is based on instances of so called scope-splitting, as in (14) where negation and the universal quantifier form one syntactic constituent *not every pearl* but they behave differently with respect to the possibility modal *can*. Negation outscoops the modal, whereas the universal quantifier is in the scope of the modal.

- (14) Not every pearl can be above average size. $\neg \diamond > \forall$

"It is not possible that every pearl is above average size."

⁷Matushansky leaves aside the question of why modals take scope the way they do. I am going to consider scopal interpretation to be a property of the semantic behaviour of modals and accept the patterns used in Matushansky (2006).

⁸Matushansky proposes that in the cases where negation outscoops a modal, such as the case of *can*, as in (1) (Matushansky 2006: 104), the modal still moves in the syntax.

- (1) Yolanda can't leave. Neg > Mod

At LF, the modal reconstructs to its original position, with no effect on the PF position of the modal in respect to negation.

Lechner adopts the scope splitting analysis of von Stechow (1993) and Penka (2002) where negative indefinites have a syntactic feature [+neg] which has to be licensed in the scope of an abstract negative head in spec/Neg. The negative NPs themselves, in this case *not every pearl*, are interpreted as their “contradictories”, in this case *every pearl*. This allows negation to be separated from the universal quantifier.

For the quantified phrase (QP) *not every pearl* (interpreted as *every pearl*) to be in the scope of the modal, the QP must reconstruct at LF. Lechner, however, argues that the QP cannot reconstruct to its original position because of the constraint in (15) (Lechner 2006: 51).⁹

⁹In this system, a strong NP is an NP with a universal quantifier. Lechner motivates this constraint based on the following data. (Lechner 2006: 49).

- (1) a. Every critic seemed to like the movie. *de re* / **de dicto*
 b. It seemed that every critic liked the movie. *de dicto*

The verb *seem* here is considered to have a modal function. In a *de re* interpretation, the quantifier outscopes the modal (Q > M), whereas in a *de dicto* interpretation, the modal outscopes the quantifier (M > Q). Thus, in (1a) the only available interpretation is that for every critic, it seems that he/she likes the movie. The interpretation of (1b) is that there is a situation which seems likely, and that situation is that every critic liked the movie.

In (1a), it is not possible for the universal quantifier to reconstruct to a position under “seem”, and hence the lack of the interpretation found in (1b). So initially, Lechner forms the Strong Constraint as (2) (Lechner 2006: 51).

(2) **Strong Constraint (1st version)**

Strong QPs do not reconstruct below raising predicates.

However, after considering the data in (3), he modified the constraint.

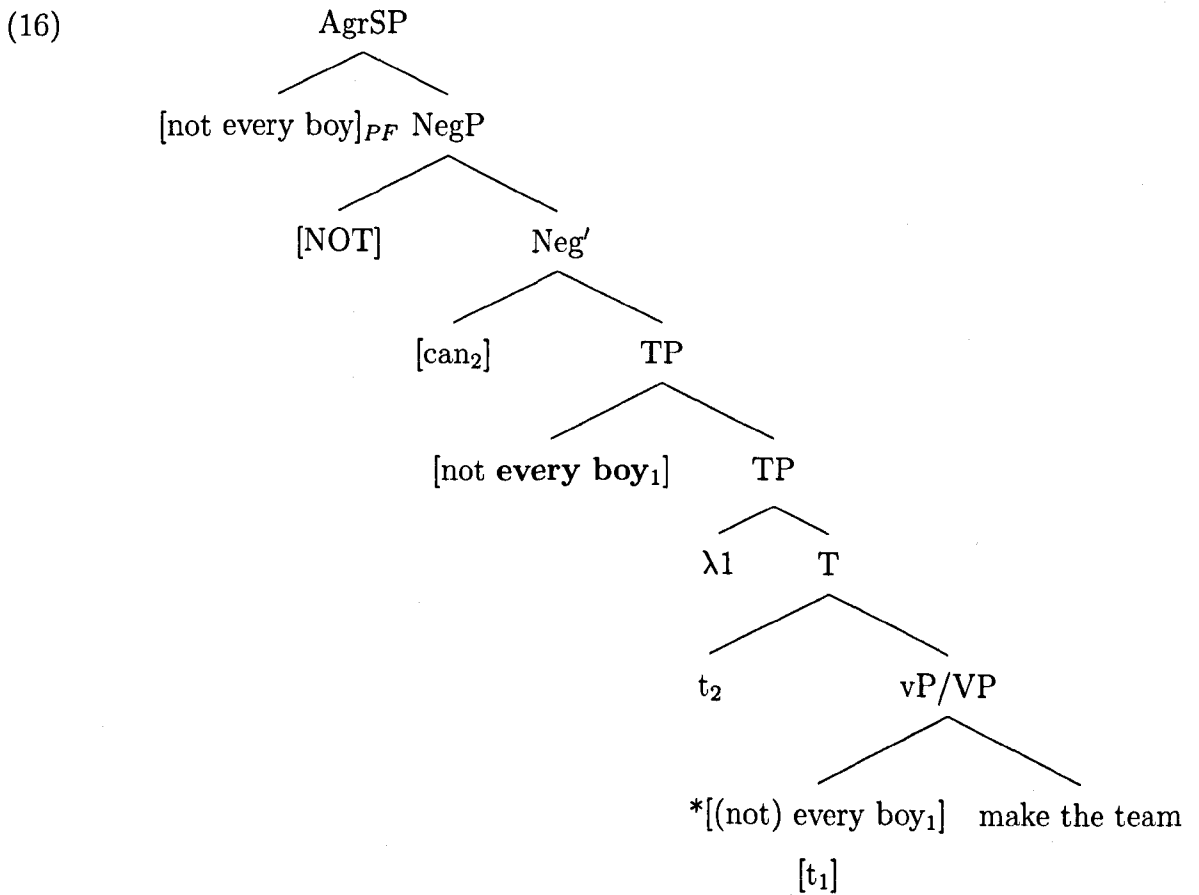
- (3) I expected everyone not to be there. $\forall > \neg/\neg > \forall$
 a. I expected₁ [_{XP} everyone₂ [_{VP} t₁ [_{NegP} not [_{TP} t₂ T⁰ to be ...]]]]
 b. I [_{XP} everyone [_{VP} expected [_{NegP} not [everybody to be ...]]]]

As shown in (3b), *everyone* can reconstruct into the embedded clause, so Lechner changes the constraint to state that the strong NP cannot reconstruct to a position below the T head of the embedded clause.

(15) **Strong Constraint**

A strong NP cannot reconstruct below T°.

Thus, he argues that the QP reconstructs to spec/T, which is higher than the merge position of the modal in his system. For the modal to outscope the universal quantifier after the reconstruction has taken place, the modal must be higher than its merge position; i.e., the modal should move to its derived position before Spell Out. The tree in (16), adapted from Lechner (2006, 2007), illustrates his proposal.¹⁰



Lechner concludes that modals are interpreted in their derived positions, not in their original positions, and that this lends support to his SAHM conjecture in (17).

(17) **SAHM conjecture**

There are instances of *semantically active head movement*.

¹⁰The * in the tree means that the NP cannot reconstruct to that site because of the Strong Constraint.

This argument adds further support to the idea that Head Movement does in fact have semantic effects.

Vicente (2007) cites another claim made by Roberts (2006) for the availability of semantic effects of Head Movement. Roberts argues that Head Movement does have semantic effects based on data related to the licensing of Negative Polarity Items (NPIs). Assuming that this licensing is essentially a semantic matter, Roberts proposes that Head Movement can create an environment where NPIs are licensed. He considers the data in (18) - (22) (Vicente 2007: 54), which he attributes to Richard Kayne.

- (18) Which sandwiches didn't anybody eat?
- (19) [*]Anybody didn't eat the tuna sandwiches.
- (20) [*]Which sandwiches did anybody eat?
- (21) [*]Which sandwiches did anybody not eat?
- (22) [*]Not anybody ate the tuna sandwiches.

Examples (18) and (19) show that the NPI *anybody* must be in the scope of negation (18), not vice versa (19). It cannot be claimed that the wh-word *which* in (18) licenses the NPI, because wh-words do not licence NPIs in their scope as shown in (20) and (21). Moreover, negation without Head Movement does not licence the NPI either, as (22) illustrates. In (22), there is a negative head *not* above the NPI, but the sentence is still not grammatical. Thus, Roberts argues that V-to-C, moving negation to a higher position (requiring/resulting in do-support), is a requirement for the licensing of the NPI in (18).

If NPIs are licensed at LF, the required movement should take place at syntax, before the transfer of the structure to the interface levels. If Head Movement were a PF operation, and "didn't" in (18) is not raised before the structure reaches LF, the NPI cannot be licensed. Since the NPI *is* licensed -(18) is grammatical - the relevant movement would have to be a part of the syntactic derivation. Roberts's conclusion then suggests that Head Movement is a syntactic operation. Roberts (to appear)

provides a similar argument using the data in (23) (Roberts to appear: 14), taken from McCloskey (1996: 89).

- (23) a. Which one of them doesn't anybody like?
 b. [*]They succeeded in finding out which one of them anybody didn't like.

The contrast between (23a), where the negative auxiliary has moved to C, and (23b), where the negative auxiliary is in T, shows that Head Movement can create an environment where NPIs are licensed.

Contrary to what Chomsky (1999) claims, Head Movement can be argued to have an effect on interpretation. The semantic effects discussed in this section could not be straightforwardly derived if Head Movement were a PF operation. Since the current minimalist theory does not allow PF operations to have an effect on LF (see Chomsky, 1995a),¹¹ the obvious conclusion is that Head Movement is a syntactic operation and that it takes place before the structure is sent to the interface levels. Thus, the argument that Head Movement does not have any meaning effects is not a valid reason why syntactic Head Movement should be banished from syntactic theory.

3.5 Head Movement: Morphology or Syntax

It is often noted in the generative literature that there is a link between rich morphology and Head Movement. This proposed dependency has led some linguists to argue that Head Movement is best treated as a morphological, rather than a syntactic operation. In this section I will introduce this idea and review some proposals for a morphological approach to Head Movement.

It has been repeatedly noted in the literature that V-to-I movement - one of the most studied cases of Head Movement - is mainly prevalent in highly inflected languages (Kosmeijer, 1986, and others). For example, Arabic is a highly inflected language and, as noted in §3.2, it is often argued that V-to-I movement is a part of the derivation of both SVO and VSO sentences (Fassi-Fehri, 1993a; Plunkett, 1993;

¹¹There are, however, some proposals in the literature for the opposite view, i.e., that PF and LF must be transparent to each other (Siloni, 2001, 2003, for example).

Benmamoun, 1997; Harbert and Bahloul, 2002; Parkinson, 1995, and others). However, this link has been fairly debated in the literature. While some argue that rich morphology leads a language to employ V-to-I movement (Vikner, 1994, 1995b,a; Rohbacher, 1999; Pollock, 1989; Ouhalla, 1988; Platzack, 1988; Platzack and Holmberg, 1989), others say that it is V-to-I movement which leads to rich morphology (Bobaljik, 1995; Thráinsson, 1996; Bobaljik and Thráinsson, 1998; Alexiadou and Fanselow, 2002). Some others, however, question the validity of this dependency. Bentzen (2003), for example, argues against this link on the basis of data from a Northern Norwegian dialect where V-to-I movement is available despite the dialect having a poor morphological system. Sprouse (1998) also claims that the setting of the verb raising parameter is independent of the acquisition of inflectional paradigms, therefore suggesting that there is no inherent link between the two. Nevertheless, this link between rich morphology and Head Movement is generally accepted, and some have proposed systems where the movement of heads takes place at a post-syntactic level in order to explain it.

Building on the assumption that Head Movement is usually associated with affixal properties of certain heads, Harley (2004) presents what she considers to be a “phonological” approach to Head Movement. She builds her system on Hale and Keyser’s (2002) proposal of Conflation as a concomitant of Merge. Hale and Keyser propose that Conflation takes place at the point two nodes are merged together only if one of the two nodes has a “defective” p-sig (phonological features), which means that that node cannot phonologically stand on its own. The process of Conflation means that the p-sig of the nondefective node is copied onto the label of the defective one. Harley illustrates this using the Mohawk example (24) (Harley (2004: 241) taken from Baker (1988)).

- (24) Owira’a waha’-wahr-ake’ (Mohawk)
 baby Agr-meat-ate
 “The baby ate meat.”

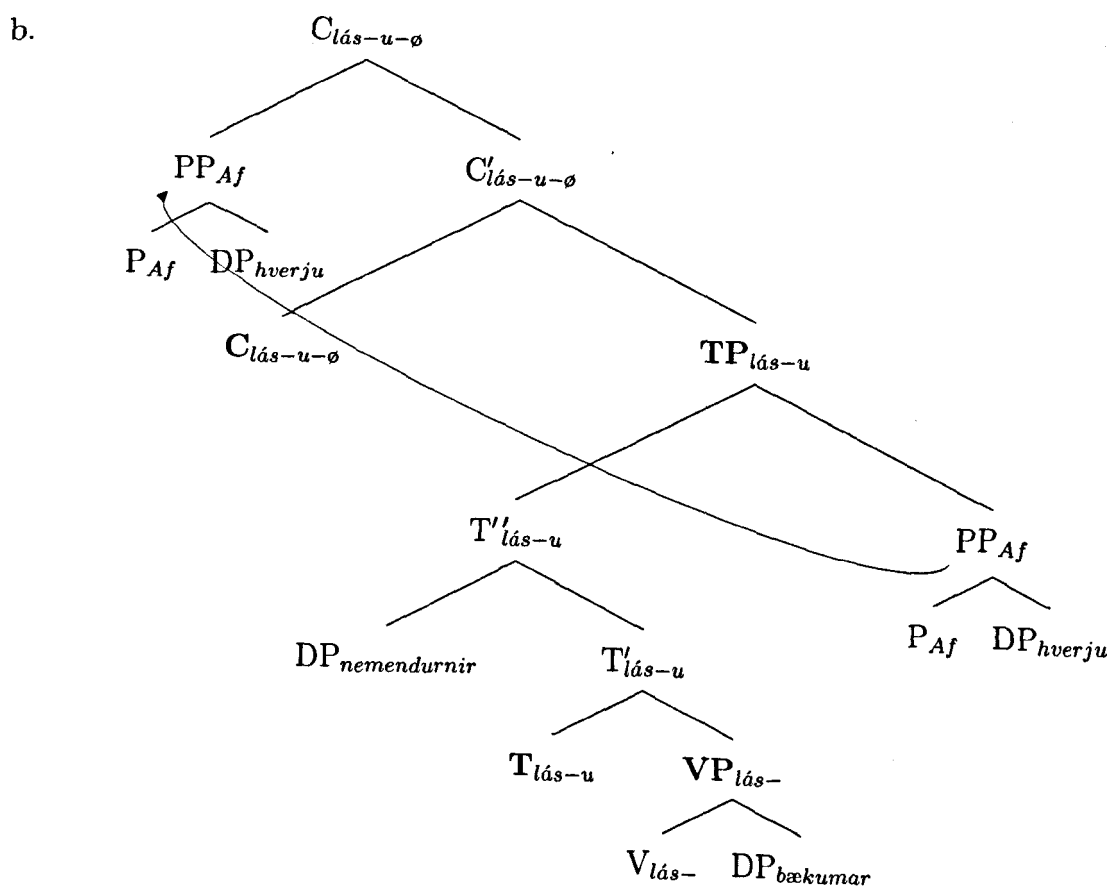
The derivation of the VP would start with merging the noun *wahr-* “meat” and the verb *-ake’* “eat”. Assuming that the p-sig of the verb is defective, the p-sig of the noun is copied onto it, and the combination projects and becomes the label, but

only the highest label is pronounced, as illustrated in (25) (Harley 2004: 242). In other words, the p-sig of the head (onto which the p-sig of the non-defective node is copied) becomes the p-sig of the maximal projection, and only the p-sig of the maximal projection is pronounced.



Harley (2004: 242) gives the derivation in (26b) for the the Icelandic wh-question in (26a).

- (26) a. Af hverju lásu nemendurnir bækumar (Icelandic)
 for what read.fin the.students the.books
 “Why did the students read the books?”



Harley proposes that Conflation takes place at two points in this derivation (the boldface nodes in (26b)): when T is merged with VP and when C is merged with TP. She assumes that the p-sigs of T and C are defective, leading the p-sigs of the

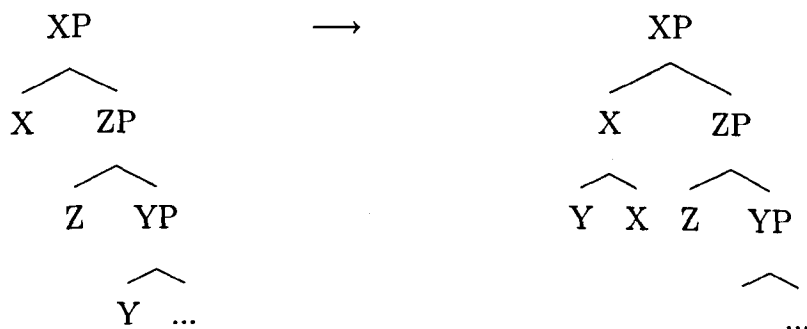
maximal projections they are merged with to be copied onto their labels. When the structure is pronounced only the highest copy of the verb is pronounced.

Despite what Harley claims, this proposal is in fact not purely phonological. Conflation is still a syntactic operation because it happens as a part of the syntactic operation Merge. What Conflation does is actually present a more elaborate version of Merge. As Harley herself points out, this proposal predicts that Head Movement does not - in fact cannot - have any semantic effect. This is because “Head Movement”, as the effect of Conflation, does not involve any movement. Consequently, Harley predicts that there will be no scope effects of Head Movement. This is contrary to what Matushansky (2006), Lechner (2006, 2007), Roberts (2006) (via Vicente (2007)) and Roberts (to appear) show, as explained in §3.4.

Parrott (2001) takes the purported dependency between V-to-I movement and rich morphology to suggest that Head Movement is morphological, and that heads move in order to satisfy the affixal/morphological requirements of functional heads. According to him, Head Movement is Move Terminal (MT), a movement operation which applies at the level of Morphological Structure (MS), which he assumes to be a post-transfer system, a part of the PF interface.

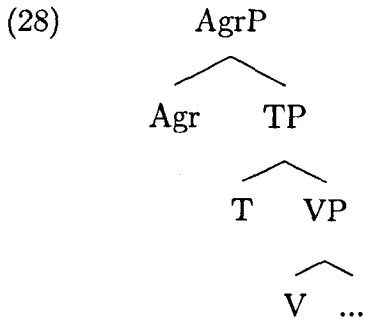
Parrott proposes that MT applies to pairs of adjacent as well as nonadjacent terminals, and that it can only raise the lower terminal (27). In (27) (Parrott 2001: 8), the relevant pair is non-adjacent, thus apparently violating the Head Movement Constraint.

(27) Move Terminal (Y, X)

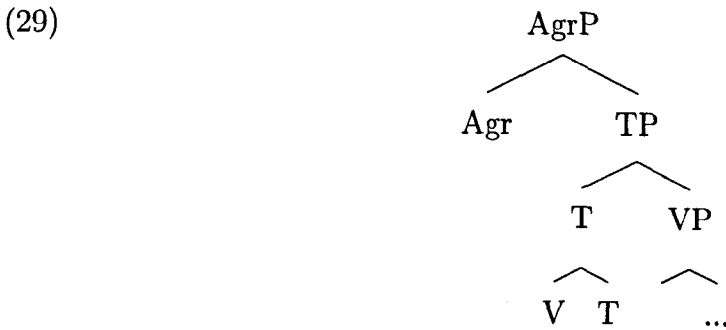


In Parrott’s morphological theory of Head Movement, V-to-I movement is the result of of the following derivational steps which take place at MS (Parrott 2001:

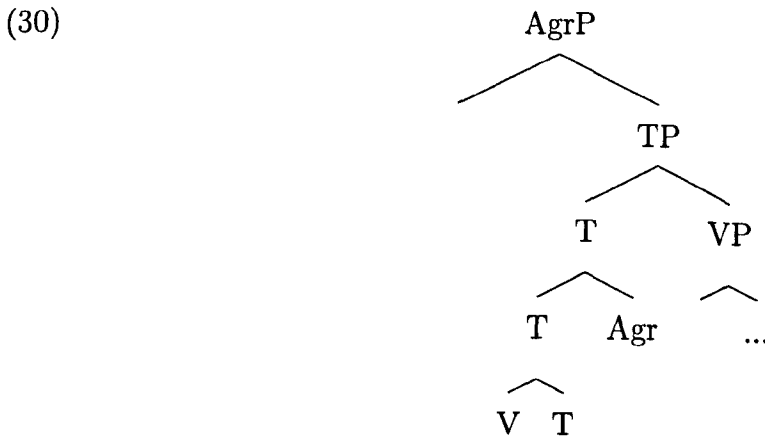
21-22). The structure in (28) is sent to MS with the verb in its base position.



MT raises V and adjoins it to T.



Merger¹² then lowers Agr and merges it with the T complex.



Parrott's system, however, can potentially over-generate. For example, in English, only auxiliary verbs undergo V-to-I (and I-to-C).

(31) John cannot sleep.

(32) * John sleeps not.

¹²In Parrott's system Merger can lower terminals, unlike MT, which can only raise terminals.

If it is the affixal requirements of T which motivate HM, English is expected to have two Ts: one with an affixal requirement, when auxiliaries are used, and another without these requirements, projected in auxiliary-less sentences. MT moves heads only when the first T is projected. Nevertheless, if Head Movement were delayed till MS and the T projected in the sentence were not the one needed, would morphology alone be able to sense the mismatch? For example, suppose that a T without any affixal requirements is projected and that the structure includes a Perfective projection. If syntax is not sensitive to the affixal nature of I, and morphology does not raise the perfect auxiliary because I is not affixal, (33) is wrongly predicted to be a grammatical English sentence.

(33) *John not has eaten.

In order to prevent sentence (33) from being generated, the Lexical Array would have to be able to anticipate morphology. Alternatively, both syntax and morphology would have to be sensitive to affixal requirements. The former option is theoretically untenable, and the latter is not minimalist. If both syntax and morphology were sensitive to the same requirements, the theory would become more complex, not simplified as Parrott claims. Arguing against PF approaches to Head Movement, Zwart (2001) and Vicente (2007) also note that a morphological or a PF treatment of Head Movement would make PF syntax-like, raising the question whether it is desirable to have two levels of structure with the same constraints. In other words, if such a treatment would require creating a (mini-)syntax in PF, syntax is most probably the component where the relevant operations should take place. Thus, a PF treatment of Head Movement does not seem to be theoretically advantageous.

Even if one accepts the dependency between rich morphology and Head Movement, an approach where heads only move at a post-syntactic level is potentially theoretically problematic and would result in some redundancy in how the levels of syntax and morphology are defined. An alternative would be to have a system which divides the “labour” between syntax and morphology. In this sense, syntax would “pave the way” for morphology. Morphological operations would operate on the output of the syntactic movement. I will say more about this approach in §3.7 below,

and in fact this is the approach adopted in this thesis.

3.6 Head Movement and the Extension Condition

Cyclicity is an important notion in syntactic theory. The Transformational Cycle (Chomsky, 1966), the Strict Cycle Condition (Chomsky, 1973), the Extension Condition (Chomsky, 1993), and the Phase Impenetrability Condition (Chomsky, 1999, onwards) are all different ways to ensure the cyclicity of derivations, i.e., that the derivation moves only in one direction and that once a lower stage is passed, no more syntactic operations can apply to it. Head Movement has been lately claimed to be counter-cyclic, and hence theoretically untenable. In this section, I will first explain how Head Movement is (apparently) counter-cyclic and report on some attempts in the literature to argue that standard Head Movement does not actually violate any principle under current syntactic assumptions.

The minimalist approaches to syntax ensure cyclicity using two principles: the Extension Condition (34) and the Phase Impenetrability Condition (35) (Chomsky 1993: 23).

(34) **Extension Condition:** all operations, must extend the root.

(35) **Phase-Impenetrability Condition:** In phase *a* with head *H*, the domain of *H* is not accessible to operations outside *a*, only *H* and its edge are accessible to such operations. (Chomsky 2000: 108)

The Extension Condition makes sure that structures are extended in one direction and at one relative position, the root of the structure. Merging a constituent to a position lower than the root changes the directionality of the extension and makes it less constrained. The Phase-Impenetrability Condition has a rather different role. It makes sure that the derivation progresses in “stages” and that once a stage has completed, anything internal to that stage cannot be “reached” by a probe in a higher stage.

Standard Head Movement has recently been noted to be in conflict with the Extension Condition. The moved head does not target the root. Instead, it adjoins to

a higher head, targeting a position below the root. Moreover, the moved head does not c-command¹³ its “trace” or Merge position. The fact that Head Movement violates one of the principles that ensure cyclicity in Minimalism has led some linguists to question its status in modern syntactic theory. Boeckx and Stjepanovic (2001) and Chomsky (1999, 2000), and others, propose that Head Movement should not be a part of syntactic derivations because it does not conform to the Extension Condition, which is assumed to be one of the basic syntactic principles. Others, however, believe that the conflict between HM and the Extension Condition is not as problematic as it seems.

Freidin (1999), for example, questions the status of the Extension Condition itself. He argues that the derivational cycle, which is reflected in the application of the Extension Condition, is redundant in Minimalism because its effect can be derived from other, more basic, principles of grammar. He claims that the lack of a Reformulation operation to redefine the relationship between nodes together with the absence of evidence for three-dimensional structures can account for the impossibility of merging an element anywhere but at the root. He gives the example in (36) to illustrate his proposal (Freidin 1999: 119).

(36) [_{CP} that [_{IP} was elected [_{NP} Adam]]]

Freidin claims that moving *Adam* to spec/I after C has been projected can be ruled out by the fact that such a movement would require the redefinition of the relationship between some nodes. For example, this movement would mean that the syntactic relation between the complementiser *that* and the IP would have to be redefined, since the structure of the IP would become different when *Adam* moves into spec/IP. Freidin believes that this redefinition would require an additional mechanism, hence it complicates the theory more. If redefinition were to be avoided, the movement would have to not interfere with the structure and the result would be a three-dimensional structure, which Freidin believes there is “little motivation” for. Freidin, then, argues that the Extension Condition does not need to be stated explicitly within Minimalism.

¹³For the definition of c-command, see (2) in chapter 1.

Nevertheless, even though Freidin (1999) thinks the Extension Condition as stated in (34) is redundant, he maintains the requirement for structures to be extended at the root. His argument actually adds support to the idea that all syntactic operations should take place at the root.

Roberts (2005, to appear) also argues that the effects of the Extension Condition are derivable from other syntactic principles, but that Head Movement in fact does not need to conform to this condition. He proposes that a system which employs both phases (Chomsky, 1999) and Edge Features¹⁴ (Chomsky, 2008)¹⁵ would require a slightly different definition of the Extension Condition. Roberts argues that movement operations have to conform to the Extension Condition only if they are derived by Edge Features.

Roberts adopts Chomsky's (2008) proposal that all movement is derived by phasal heads: v^{\max} and C^{\max} . He cites the following example from (Chomsky 2008: 149):

- (37) a. C [T [who [v^* [see John]]]]
 b. who_i [C [who_j [T [who_k v^* [see John]]]]]]
 c. who saw John?

According to Chomsky (2008), the phasal head C has an Agree feature and an Edge Feature. T inherits the Agree feature and causes *who* to move to spec/T. Roberts notes that this movement does not satisfy the Extension Condition, since C had

¹⁴In Chomsky (2008), Edge Features (EF) enable lexical items to be merged with a Syntactic Object (SO); a lexical item without an EF may only be an independent expression. If a lexical item has a complement, the EF of that lexical item is "minimally satisfied". This suggests that an Edge Feature may remain active after the initial Merge of the lexical item, thus allowing that lexical item to participate in further Merge operations, and this option seems to be particularly a property of phasal heads. Chomsky proposes that all cases of Internal Merge (or Move) are derived by phasal heads, or the heads which inherit features of phasal heads. For example, he suggests that the EPP feature on T may be replaced by an Edge Feature inherited by T from the phasal head C. However, all the cases discussed by Chomsky (2008) are cases of Phrasal Movement and he does not explain what effect, if any, a theory of Edge Features have on Head Movement.

¹⁵To explain the discrepancy in the dates, Chomsky (2008) first appeared as an unpublished manuscript in 2005, and it is this manuscript which Roberts (2005) refers to.

already been projected before the *wh*-word moved to *spec/T*. The Edge Feature on *C* then causes *who* to move again, landing in *spec/C*. As Roberts points out, this movement satisfies the Extension Condition, hence the proposal that only movements derived by Edge Features are required to satisfy the Extension Condition.

Roberts (2005, to appear) claims that head-to-head Movement is not derived by an Edge Feature and consequently it is not required to satisfy the Extension Condition. Thus, effectively, he argues that Head Movement as standardly defined is not problematic for minimalist syntax. However, Chomsky (2008) actually proposes that the Edge Feature of *C* may be inherited by *T* alongside the Agree Features, hence eliminating the need for EPP features. Thus, according to this proposal, the Merge of the subject in *spec/T* is also derived by an Edge Feature (inherited by *T* from *C*) and this operation also does not satisfy the Extension Condition. Thus, in the framework proposed by Chomsky (2008), there is no correspondence between Edge Features and the Extension Condition. It seems that a theory which assumes that all operations are derived by phasal heads cannot strictly maintain the same definition of the Extension Condition assumed in this thesis. The approach I am taking here does not employ Edge Features or make the assumption that all operations are derived by phasal heads, and therefore I will leave these issues and their implications for the theory for future research.

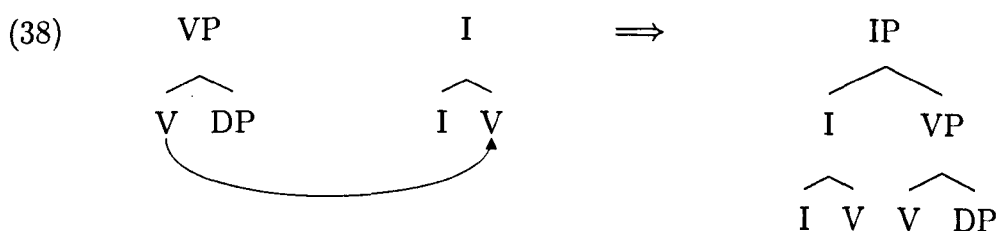
If one views cyclicity and the Extension Condition as important parts of syntactic theory, as I do, the fact that standard Head Movement does not obey the Extension Condition could be a valid argument against this movement. In this thesis, I adopt the view that Head Movement and the Extension Condition can be reconciled. In the next section, I will review some proposals in the literature which attempt to make the way heads move in the syntax more cyclic.

3.7 Reformulating Syntactic Head Movement

There have been several recent attempts in the generative literature to reformulate Head Movement in order to make it compliant with the Extension Condition. These

attempts generally aim to make Head Movement “cyclic” by avoiding the head-to-head adjunction as a part of the mechanism of the movement. In this section, I will briefly review some of these attempts, and then point out one common feature in most of them: allowing heads to land in specifier positions.

One of the earliest proposals to modify standard Head Movement is by Bobaljik and Brown (1997). They propose that Head Movement is an interarboreal operation.¹⁶ For Bobaljik and Brown, Head Movement consists of two basic derivational steps. Initially, a head is copied from one tree to another. This then is followed by merging the structure built in the first step with the structure the head originally moved from. Bobaljik and Brown give the following analysis of V-to-I movement (Bobaljik and Brown 1997: 346).



At PF, the lower instance of the head V is deleted and only the higher one is pronounced.

This analysis, however, is potentially theoretically problematic. It adds to the processing burden on the speaker and it might over-generate. If more than one tree is structured at the same time and constituents are allowed to be copied and merged with other trees, it is hard to perceive how this process can be constrained. How many trees can be generated side by side? Moreover, what motivates copying

¹⁶Bobaljik and Brown (1997) claim that nothing in the theory excludes interarboreal operations, and as a result, these operations are allowed until proven to be erroneous.

In interarboreal operations, two trees are structured in a parallel fashion and then merged. An example of such an operation is the merger of a DP into an argument position. For example, the internal structure of the subject DP in (1) is built independently and then merged with the rest of the structure.

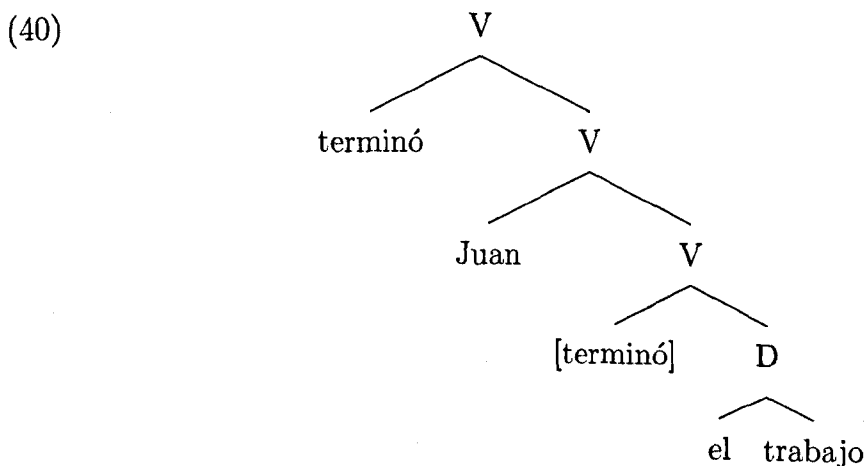
- (1) *The girl* talked to me yesterday.

elements from one tree to another? If a feature in one tree can probe into parallel trees and copy elements from them, what does that say about feature checking? This proposal actually raises serious theoretical issues which are at least as problematic as the ones it tries to resolve.

Contreras (2003) proposes another system for Head Movement which conforms to the Extension Condition. His system is based on *c*-selection as a trigger for movement, but for him *c*-selection requires Head Movement only if the feature required to check the *c*-selectional feature is on a lexical head which has already been merged in the structure. However, he proposes that the relevant operation is Merge rather than Move.

Contreras assumes that in languages like English, verbs are merged without tense inflections, and that there is a separate T projection in the structure. However, in languages like Spanish, verbs are merged fully inflected. In the latter case, T is a part of the verb itself and there is no separate T projection. T has a universal *c*-selectional requirement for V. In English, this requirement is satisfied by merging T with VP, thus the overt word order is SVO. In Spanish, however, since T is on V, this requirement is satisfied by re-merging V, as in the derivation of (39) in (40) (Contreras 2003: 98). PF then deletes the lower copy of the verb. This operations results in VSO order.

- (39) Terminó Juan el trabajo. (Spanish)
 finished John the work
 "John finished working."



Contreras's system does not violate the Extension Condition because the (re)merged element extends the root. However, there is a potential problem with this proposal. It is essential for this account that elements in the Lexical Array previously accessed by the syntax can be accessed and merged again, but this might overgenerate if there are no clear restrictions to ensure that only the required lexical item is (re)merged. An example of a derivation where this might be relevant is when a structure projects both a lexical verb and an auxiliary, and the auxiliary must be remerged (or raised, as movement frameworks assume). To illustrate this potentially problematic scenario consider the German sentence in (5) in §3.2, repeated as (41) below.

- (41) Die Frau hat das Buch gelesen (German)
 the woman has the book read
 "The woman has read the book."

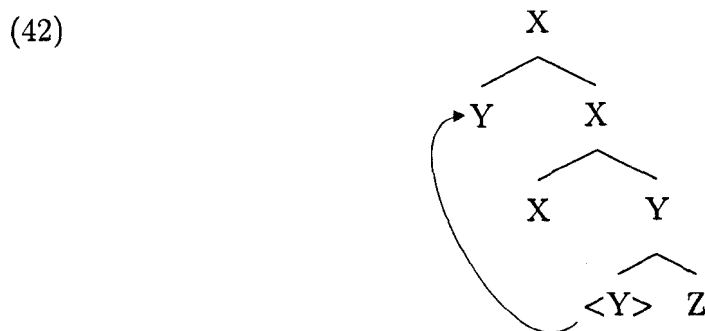
German is a V2 language and it is usually assumed that the tensed verb moves to C. If a sentence has only one verbal element, Contreras's system predicts that verb would be remerged from the lexicon. However, if there are two verbal elements, and the c-selectional feature is for *a* verb, what guarantees that is it the auxiliary, and not the lexical verb or perhaps another auxiliary, which is remerged? This would be achieved if, for example, there was a requirement for the remerged element to be tensed, since in this system verbs enter the derivation fully inflected. This, however, should be motivated. A possible motivation could be that the same lexical item bearing the c-selectional feature to be checked should be re-merged from the lexicon to check that feature. Nevertheless, if the re-merge process is restricted, what is the theoretical motivation for allowing the syntax to access the items in the Lexical Array which have previously been merged? Why cannot the required lexical item simply be mover (or copied) to the root? I will discuss this option more later in this section and in §3.8.

Fanselow (2004) proposes a "Münchhausen"¹⁷ style of Head Movement. In other words, a given head would have both the attracting and the attracted features and

¹⁷Fanselow explains the motivation for this term as the following: "...according to popular wisdom, the legendary count of Münchhausen managed to pull himself out a swamp by pulling his own hair." (Fanselow, 2004, footnote 10)

it would cause itself to move.

Fanselow argues that Head Movement would not violate the Extension Condition if the moved head Y landed in the specifier of the head X which has the feature to be checked.



This, Fanselow believes, would not be permissible since it is against the principle of structure preservation of Emonds (1976).

(43) **Structure Preserving Constraint (SPC):**

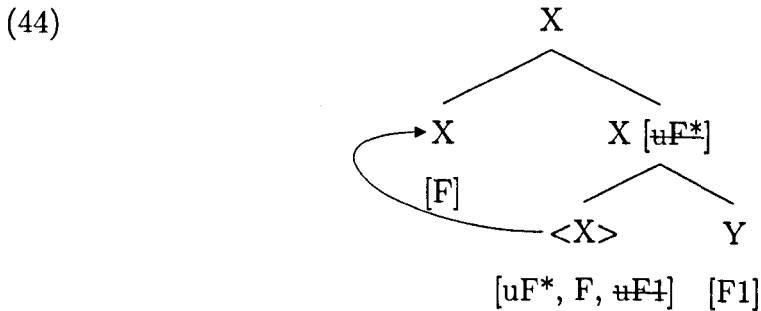
Major grammatical transformational operations are either root
or structure-preserving operations (Emonds 1976: 5)

Structure Preserving Transformation:

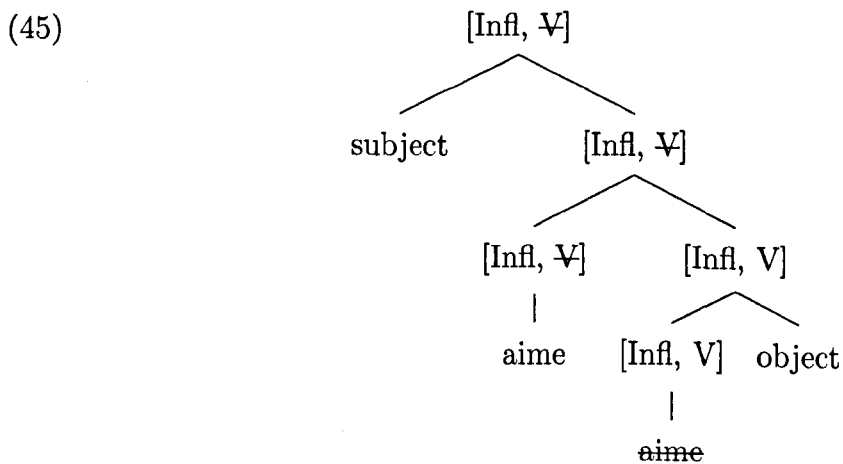
A transformation ... that introduces or substitutes a constituent C into a position in a phrase marker held by a node C is called "structure preserving." (Emonds 1976: 3)

The movement operation in (42) violates the Structure Preserving Constraint because the moved head Y is a maximal projection in its landing position, as it would not be dominated by any more instances of Y. This, Fanselow proposes, can be resolved if it is actually the moved head Y which will project after the movement, and not the target head. He argues that the only case where this situation is possible is when a certain head carries a strong uninterpretable feature [uF*] in need of checking and also the feature [F] that can check it. The [uF*] percolates up as a result of not

having been checked. Consequently, the head pulls itself up to check its own feature. So, the head moves within its own projection, by attaching to its own projection, then projecting yet further. The tree diagram (44) illustrates the proposed analysis.



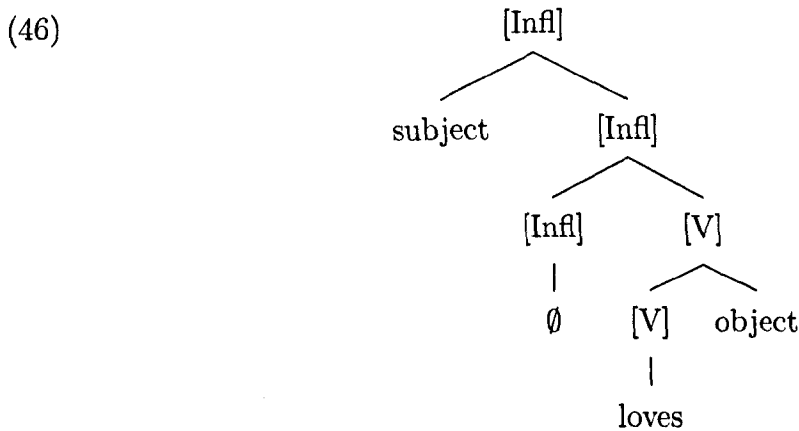
Fanselow proposes that verbs move in French but not in English because the Infl and V projections are configured differently in each language. He argues that in French Infl and V form one projection [Infl, V]. He draws support for this idea from the fact that French verbs are highly inflected. The feature V on this projection is uninterpretable and it needs to be eliminated, causing the verb to move within its own projection. Fanselow provides the derivation in (45) for a French sentence with the verb *aimer* “to love” (Fanselow 2004: 56).¹⁸



¹⁸Fanselow explains that his system is compatible with an analysis of adverbs (and negation) as adjuncts or secondary specifiers of a Infl-V projection, as suggested by Ernst (2001). Fanselow points out that his system predicts that the moved verb may land between any two specifiers or adjuncts of the Infl-V projection. He cites Italian examples from Cinque (1999) where the verb can land in different positions among adverbs and negation (For the examples, see Fanselow (2004: 57).

However, the idea that the verb may land virtually anywhere within its own projection will potentially over-generate. It needs to be more restricted.

On the other hand, he projects separate Infl and V for a non-verb-raising language such as English. In this case, there is no uninterpretable feature to cause the verb to move, as shown in (46) (Fanselow 2004: 57),



Fanselow's system shares some of the properties of Contreras (2003). In both accounts, verb-raising languages project inflected verbs and no separate Infl (or T) nodes. Both systems involve the checking of uninterpretable/c-selectional features by (re)merging the verb. While Contreras (2003) assumes that the verb is (re)merged from the Lexical Array, Fanselow (2004) proposes that the verb moves within its own projection.

Fanselow's Münchhausen style Head Movement is motivated by the attempt to conform to both the Extension Condition and the Structure Preserving Constraint. His attempt to conform to this constraint, in the sense that the moved head must be a head in its landing site, complicates and restricts his system. However, we should question whether this restriction is in fact necessary. In a theory which defines nodes as projections of lexical items and not as bar levels (Bare Phrase Structure) (Chomsky, 1995a, 2000, 2004, 2005, 2008; Boeckx, 2006), the Structure Preservation Constraint is actually not applicable.

To illustrate how the Structure Preserving Constraint is not compatible with a Bare Phrase Structure framework, take heads and phrases to be defined as in (47) and (48), respectively (Vicente (2007: 23) based on Chomsky (1995a: 393-394)).

(47) Head: a node which does not dominate any more projections of itself.

(48) Phrase: a node which is not dominated by any projections of itself.

These definitions allow for a node to be both a head and a phrase; in other words, the same node can be both a minimal and a maximal projection of the same lexical item. An example of this is Y in (49). Y neither dominates nor is dominated by any more instances of itself. Thus, Y is both a head and a phrase. If the Structure Preserving Constraint were relevant, how would Y move? Is it as a head or a phrase? In theory, it should be able to move as either.



A more concrete example is the partial derivation of the English sentence *they work* in (50). *Work* moves to v, but does it do that as a head or as a phrase?¹⁹

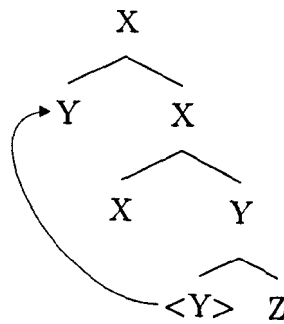


The distinction between heads and phrases is not neutralised, but it plays a different role from the one it plays in earlier theories. In other words, there are no “head positions” vs. “phrasal positions” as such. A given position can be defined as either (or both) depending on the constituent which occupies it. Thus, not only does the Structural Preserving Constraint not find a natural place in the current syntactic theory, but minimalist principles suggest that it should be dispensed with.

With this argument in mind, consider the tree in (42), repeated here as (51), the one which Fanselow rejects because it does not obey the Structure Preserving Constraint.

¹⁹This agreement applies only when the verb does not take arguments. Its aim is not to make a specific claim about verbs in English, but only to show that in a barless system, head positions and phrasal positions cannot be defined in the same way they used to be in earlier frameworks.

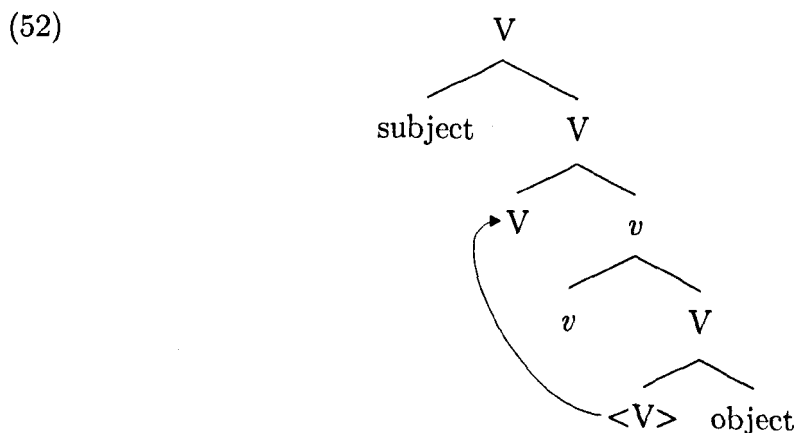
(51)



In (51), Y is both a head and a phrase in its landing site, according to the definitions in (47) and (48). There is no obvious reason why the landing site of Y should be considered a phrase because according to (47) it is also a head. A barless system would not appeal to the distinction between head and phrasal positions, and therefore the grounds on which Fanselow excludes this structure is not valid.

In the context of his proposal for a projectionless syntax, Bury (2003a,b, 2005) argues for an analysis where the moved head, not the attracting head, projects, or becomes the label, after the head lands in the specifier position; i.e., he does not impose the restriction that Fanselow (2004) does. In other words, he allows a head which is a different category from the attracting head to become the label after Head Movement. In simple terms, when a V moves to spec/*v*, the resulting structure is labeled V, not *v*. Furthermore, the V head moves to spec/T and the whole structure again is labeled V. Citko (2008a,b) claims that the idea that the moved head projects is counterintuitive and not theoretically desirable, but she does not explain why. I interpret Citko's comment as being based on the intuition that the attracting head is "stronger" or more prominent than the moved element. The attracting head is considered to be the one which specifies the properties of the projection because it is the one which derives the movement. The scenario where one head derives movement and then "hands over" the stronger position to the moved head seems problematic. A given head undergoes syntactic operations in order to check all its features and become a full projection. Therefore, if one other head is allowed to project, some property in that moved head must be able to "overcome" the attracting head. In order to support Bury's proposal, it must be shown that the moved head does have such a strong property.

Another potential problem with this proposal relates to the cases when External Merge or Phrasal Movement follows Head Movement. An example would be the External Merge of the subject. According to Bury's proposal, *v* causes V to move, and as a result V projects. Therefore, the subject would have to be merged as the spec/V, as shown in (52).



The question to consider here is how and why the subject is merged. If it is to check a feature on V, what makes it possible to delay checking this feature until *v* is merged and V moved? The same issue arises again when the subject is raised again to what in standard assumptions would be spec/T, but there is an added complication. In Bury's system, in a verb-raising language, V would move to spec/T, and as a result V projects. The subject would then need to move to spec/V again in an SVO language. The problem here is that the subject was already merged in the spec/V before V was moved to spec T. How can the subject be merged in spec/V again? Another issue arises when one considers non-verb-raising languages. In those languages, T does not cause V to move, and therefore the subject would be merged in spec/T. Is it theoretically desirable to have the subject in spec/V in some languages and spec/T in some others, and is this difference supported by data? This analysis raises some serious theoretical issues; projecting the goal does not seem to be a desirable option.

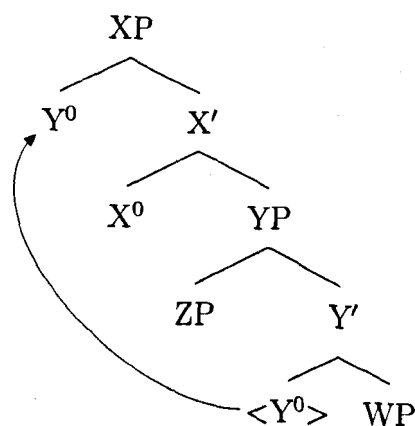
Matushansky (2006) proposes a syntactico-morphological approach to Head Movement which does not violate the Extension Condition and, as briefly noted in §3.3, minimises the differences between Head Movement and Phrasal Movement. She argues that both Phrasal and Head Movement are composed of feature-valuation fol-

lowed by re-Merge. Both types of movement are the result of c-selection,²⁰ and the structural relationship between the probe and the goal specifies whether the head of a certain projection or all of the projection moves, as will be explained in §3.8. She argues that the fact that Phrasal Movement and Head Movement are complementary suggests that they are not as distinct as they are normally thought to be. Under her analysis, Phrasal Movement is possible when Head Movement is not.

Matushansky proposes that Head Movement actually targets the root, landing in the specifier position of the attracting head, therefore conforming to the Extension Condition. Her system consists of two parts: head-to-spec movement as a syntactic operation and M-merger as a post-spell-out morphological operation.

The syntactic part of Matushansky's analysis involves the attracted head (the goal) moving and landing in the specifier of the attracting head (the probe). In other words, the c-selectional requirements cause the selected head to move to the specifier position of the c-selecting head, deriving the structure in (53).

(53)



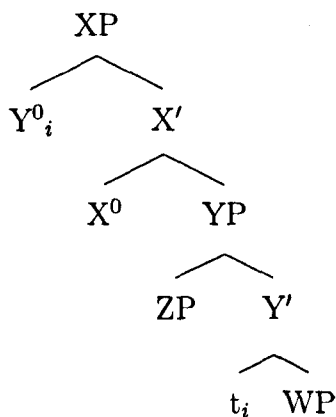
In the morphological component, the affixal requirements of X^0 cause M-merger to lower Y^0 and attach it to X^0 . Matushansky argues that M-merger is independent of Head Movement; she mentions cases of M-merger with Phrasal Movement (Romance clitic objects), M-merger without movement (Saxon Genitives), and Head Movement with delayed M-merger (Long Head Movement).

The basic idea of M-merger is that it converts the structure resulting from Head Movement (54a) to the structure in (54b), which is very similar to the structure

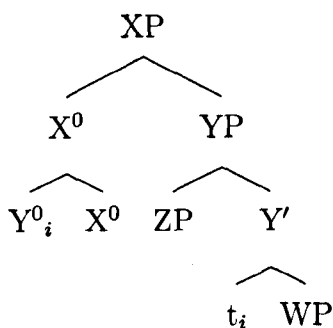
²⁰She defines c-selection as follows: A head may select the syntactic category (and the lexical content) of the head of its complement. (Matushansky 2006: 76)

resulting from standard Head Movement (Matushansky 2006: 81).

(54) a.



b.



The differences between this structure and the one resulting from standard Head Movement are that the structure in (54b) is ultimately formed in the morphological component and that it involves lowering one head to another, as opposed to raising in standard Head Movement. The resulting complex head in (54) can be raised once more by a higher head, as in the case of V-to-C.

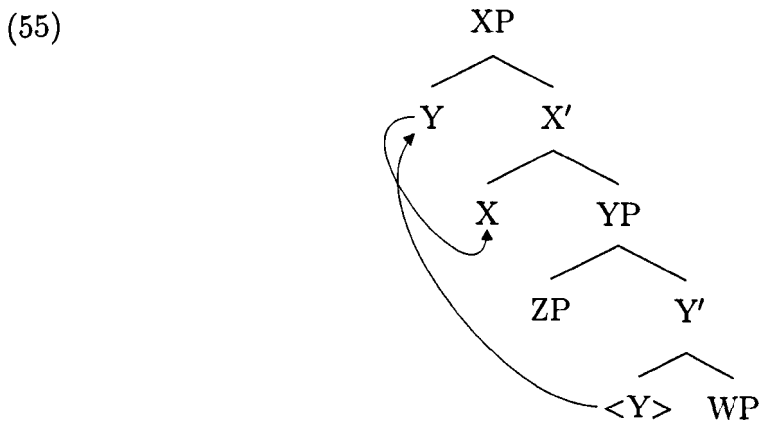
There is a problem with this proposal, however. Since M-merger occurs in the morphological component of the grammar, i.e., after Spell Out, how can the head still be accessible to syntax and be raised again, as is required in V-to-I-to-C, for example? To resolve this issue, Matushansky argues that M-merger must involve partial Spell Out of the resulting head; a head created by M-merger is a syntactic phase. Thus, the internal structure of the complex head is frozen, but it can still be accessed by syntax and raised.

For Matushansky's partial Spell Out to work, morphology would have to be a level between syntax and the transfer of the structure to the interface levels. This would imply that morphology can feed LF. If that is the case, then the boundaries between syntax and morphology are blurred. If, on the other hand, morphology is

not made to feed LF, morphology would be a post-transfer system, but this is not compatible with Matushansky’s own system. According to her, the complex head becomes a phase after M-merger. Since M-merger is a post-spell-out operation, how can syntax access the M-merged head if it has already been spelled out? The scenario of partial Spell Out is thus a problematic one.

To resolve this problem Vicente (2007), who partly adopts Matushansky’s (2006) analysis, proposes that M-merger actually takes place in the syntax, but this solution is not tenable either. First of all, it makes the theory more complex. If M-merger is derived by the affixal requirements of functional heads and M-merger takes place in the syntax, this might have one of two implications. The first is that all affixal requirements are met in the syntax, suggesting that word formation is only syntactic, a very controversial idea.²¹ The other is that both syntax and morphology are sensitive to affixal requirements. Unless the affixal requirements are different for syntax and morphology, the system will be more complex than a system which only allows morphology to deal with affixation.

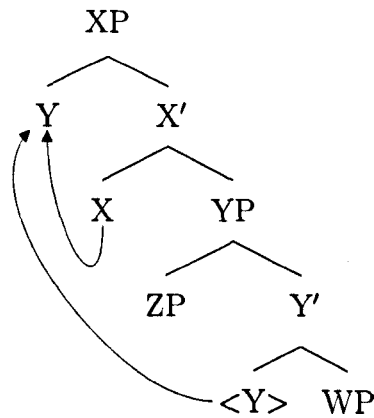
Another reason Vicente’s solution is problematic is fact that it either involves lowering as a syntactic operation or reintroduces standard head adjunction. If M-merger in Vicente (2007) involves lowering, as assumed by Matushansky (2006), this means that lowering is allowed in syntax, which is claimed not to be possible in current syntactic theory because it involves movement into a non-c-commanding position (see Chomsky (1995b: 42, 92, 139, 197, 254)).



²¹See Li (2005); Ackema and Neeleman (2007); Embick and Noyer (2007) for a discussion of this issue.

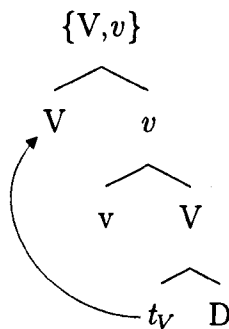
If, on the other hand, raising is involved, this effectively reintroduces head adjunction, thus having the same theoretical problems of standard Head Movement, with the added disadvantage of involving an extra step in the derivation.

(56)

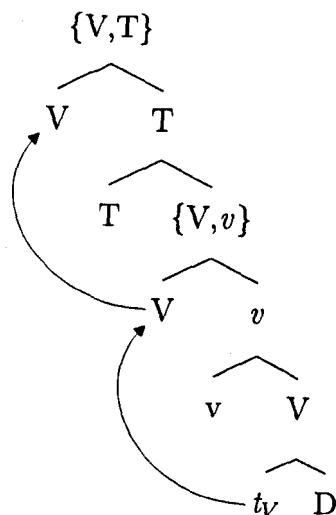


Citko (2008a,b) also proposes an analysis where the moved head (the goal) can land in the specifier position of the “targeted” head (the probe). Her system, however, is different from Matushansky’s proposal in three main points. Firstly, while Matushansky assumes that it is the attracting head which projects after the movement, as shown in (53), Citko proposes that both the probe and the goal project, as illustrated in (57) (Citko 2008a: 934).

(57) a.



b.



The tree in (57a) illustrates V-to- v movement. Citko assumes that v has an uninterpretable V feature and an EPP feature. The former feature is checked via Agree, whereas the latter feature causes the verb, which has an interpretable V feature, to move to spec/ v . As a result of the movement, the label of the resulting structure is projected from both V and v . Similarly, for V-to- v -to-T, V moves to spec/ v and then to spec/T. Citko claims that the fact that “Head Movement” is allowed only within extended projections of the “same” type supports her idea of Project Both.²² For instance, she claims that a D head may not move to the spec of a v , and vice versa. This, she argues, guarantees that there is no clash in nature between the two parts of the label. Nevertheless, Citko does not explain how she deals with instances of incorporation (see Baker, 1988), and whether she claims that those cases, which could for example involve the movement of an N to a V, are not cases of syntactic Head Movement under her proposal.

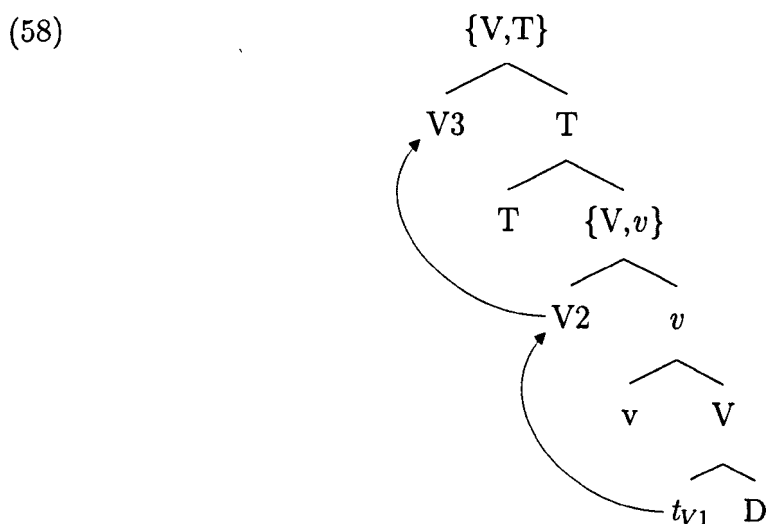
Citko does not provide any solid theoretical motivation for her “Project Both” analysis and it does not seem to be connected to allowing Head Movement to extend the structure at the root. Her motivation for “Project Both” is different from the motivation for head-to-spec movement. On the one hand, she proposes “Project Both” in the context of questioning the labeling mechanism in the Minimalist Program, arguing that more options are available than is standardly assumed. On the other hand, she adopts head-to-spec movement in order to make Head Movement

²²For information about extended projections see Grimshaw (1991).

more compatible with the Extension Condition. It is not clear that “Project Both” does have a real theoretical advantage.

Another difference between Matushansky’s and Citko’s proposals is the fact that there is a morphological element in the former, but not the latter. Citko does not argue against M-merger in Matushansky (2006); she rather briefly comments that the cases considered by Matushansky seem to suggest that M-merger is involved. Thus, it seems that Citko does not reject M-merger as a morphological operation which applies to the output of head-to-spec movement, but she believes that this morphological operation does not always have to follow Head Movement.

The third difference between these two analyses relates to cases which involve multiple applications of Head Movement, such as V-to-*v*-to-T. While Matushansky proposes that it is the complex head formed by M-merger of V and *v* which moves to spec/T, Citko assumes that the same head, in this case V, moves twice, as shown in (57b). I have already commented on the theoretical problems in Matushansky’s approach, but the latter is also problematic. Consider the status of the attracted element (the goal) in each of the two movement operations V-to-spec/*v* and V-to-spec/T in (57b), repeated below as (58) with the different Vs numbered.



While in the first case, V is the *only* element which projects (t_{V1}), in the second case V2 is *one* of the elements which project. The status of the moved node is different in these two instances, so is the movement operation the same in both cases? Moreover, allowing V2 to move separately weakens the idea of “Project Both”. What is the

advantage of having both V and v project in the first place if one of these two nodes can later be moved separately from the other, and how can only one of the nodes move separately if both nodes have been combined in projecting? Thus, both these approaches to multiple Head Movement are problematic, and an alternative is required.

One common element in Contreras (2003), Fanselow (2004), Bury (2003a,b, 2005), Matushansky (2006), Vicente (2007) and Citko (2008a,b) is the fact that they allow heads to land in specifier positions. This approach to Head Movement obeys the Extension Condition and minimizes the differences between Phrasal and Head Movement. A unique feature (and perhaps an advantage) of Matushansky's system is that it divides the labor between syntax and morphology. I will discuss this approach in more detail in the next section.

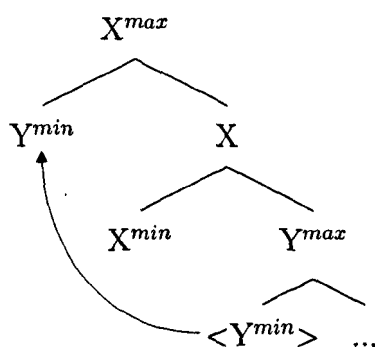
3.8 Head-to-Spec Movement

I mentioned at the end of §3.6 that I adopt the position that Head Movement can be modified and made compatible with the Extension Condition, and in §3.7 I reviewed some of the attempts in the literature to achieve this goal. The majority of these proposals share one property; they allow the moved head to land in the specifier position of the attracting head, thus extending the structure at the root (Contreras, 2003; Fanselow, 2004; Bury, 2003a,b; Matushansky, 2006; Vicente, 2007; Citko, 2008a,b). In this section, I will further discuss this approach to Head Movement and also consider Matushansky's (2006) proposal for a morphological operation which merges the probe and the goal of Head Movement. I will adopt the position that Head Movement consists of a syntactic part where a head moves to the specifier position of a higher head and a morphological part where the two heads are merged. The syntactic part of this approach to Head Movement is shared among several recent proposals, as explained in §3.7, whereas the morphological part is mainly advocated by Matushansky (2006). I will compare how different proposals in the literature deal with the details of the syntactic part of this approach and then adopt different aspects of different

proposals in order to form a comprehensive account. In the morphological part of the analysis, I will present an alternative to Matushansky's account in order to resolve some problems related to cases of multiple Head Movement.

Allowing heads to target the root, landing in the “specifier” position of the attracting head (the probe), is a straightforward way to resolve the cyclicity issues of standard Head Movement. Since the restrictions which excluded this option in earlier frameworks are not definable under the minimalist bare syntactic approach assumed in this thesis (see §3.2 and §3.7), I adopt the position that head-to-spec movement is in fact a legitimate syntactic operation. A movement operation which moves a head to a specifier position, as in (59) is not theoretically problematic because there is no justifiable correspondence between specifier positions and phrases (or maximal projections).

(59)



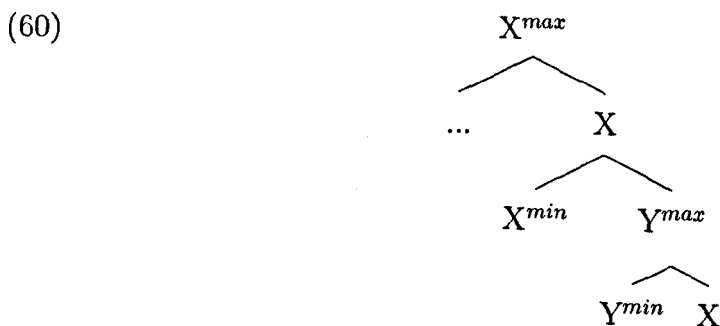
I claim, following Citko (2008a,b), that Head Movement is the result of the attracting head (the probe) having two related features: a c-selectional feature which is checked via Agree and an EPP feature which requires the movement of the goal to the specifier.²³ I also assume, following Matushansky (2006), that the same features may derive either Head Movement or Phrasal Movement depending on the position of the goal in relation to the probe. I will discuss this more below.

There are some theoretical issues which need to be addressed in the context of head-to-spec movement. These issues relate to distinguishing between Head and Phrasal Movement, projecting nodes, the relative order of Head Movement with re-

²³I assume that EPP features are always connected to other features. Thus, a head may have two (or more) EPP features each associated with a separate c-selectional feature, for example, resulting in a multiple specifier structure. I will discuss this issue more below.

spect to Phrasal Movement and External Merge, whether or not a morphological operation applies to the output of Head Movement and deriving multiple cases of Head Movement. In the rest of this section, I will address these issues and explain my position in regard to each of them.

I pointed out in §3.7 that head-to-spec movement has been seen as a way to minimise the differences between Head Movement and Phrasal Movement by allowing heads to move into a position typically associated with phrases. One issue which needs to be addressed in this context is how Head Movement can be distinguished from Phrasal Movement. In other words, what determines whether a whole projection or only its head should move? For instance, in (60), is it Y^{min} or Y^{max} which moves to the spec/X, especially since both movements would potentially target the same position?



This issue is addressed in Matushansky (2006). She argues that the condition in (61) can specify whether Head Movement or Phrasal Movement is needed to check a specific *c*-selectional feature.

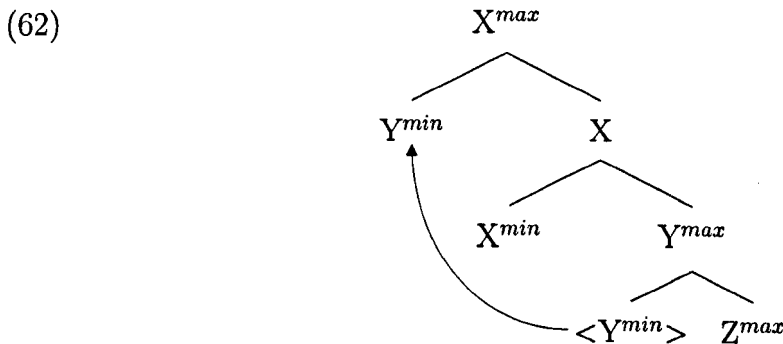
(61) *Transparency Condition:*

A head ceases to be accessible once another head starts to project.

(Matushansky 2006: 78)

The Transparency Condition is a locality constraint which basically guarantees that a head can be moved only by the immediately higher head; in other words, it imposes similar restrictions on Head Movement to those imposed by the Head Movement Constraint of Travis (1984). However, the Transparency Condition also specifies the exact time head-to-spec movement takes place; it has to be at the point the attracting head is merged, even before it starts projecting. To illustrate this, consider the tree

in (62). According to Matushansky, as long as X has not projected yet, X can cause the head of the c-selected node Y to move to spec/X.



If X has already started projecting, the head of the projection Y cannot move on its own and Phrasal Movement of the whole Y projection is expected to take place. In other words, the configuration the probe and the goal occur in with respect to each other determines whether Head Movement or Phrasal Movement takes place.

However, the way the Transparency Condition is defined is counterintuitive. In order for Y to land in the specifier of X, X would have already started projecting. Under the Transparency Condition, as worded in (61), Head Movement would not take place. In fact, head-to-spec movement would never be expected to take place because a given head could not have a specifier if it had not started projecting!

Nevertheless, in its essence, the Transparency Condition is similar to the Head Movement Generalisation of Pesetsky and Torrego (2001), as defined in (63).

(63) *Head Movement Generalisation*

Suppose a head H attracts a feature of XP as part of a movement operation.

- a. If XP is the complement of H, copy the head of XP into the local domain of H.
- b. Otherwise, copy XP into the local domain of H.

(Pesetsky and Torrego 2001: 363)

The difference between the Transparency Condition and the Head Movement Generalisation is that Matushansky (2006) uses “projecting” to specify the cut-off point between Head Movement being possible and it being impossible, but the definition she uses makes Head Movement inapplicable, as explained above. However, the way

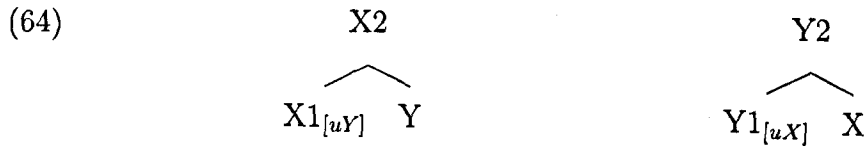
she implements her system actually implies that she essentially uses the same restrictions as Pesetsky and Torrego (2001); when the feature attracted is on the head of the complement, Head Movement takes place, and anything deeper in the structure than the head of the complement would only be accessible by Phrasal Movement. This generalisation is also basically the same restriction imposed by the Head Movement Constraint of Travis (1984). Thus, I assume that a given probe can access only the minimal projection of its immediate complement but only the maximal projection of anything other than the complement, given of course that the probe *c*-commands the goal in both cases and that the access is not barred by the Phase Impenetrability Condition.

According to the definitions of head and phrase used in this thesis (see §1.3), a given node may be both a head and a phrase, or a minimal and a maximal projection. The approach advocated in this thesis entails that such a node would move to the specifier position of the probe and the distinction between Phrasal Movement and Head Movement would not apply; both types of movement are derived by *c*-selectional features and they target the same position. The distinction between Head Movement and Phrasal Movement becomes relevant only when there is more than one projection of the same lexical item. If such a projection is the immediate complement of the probe, the minimal projection moves; if not the maximal projection moves.

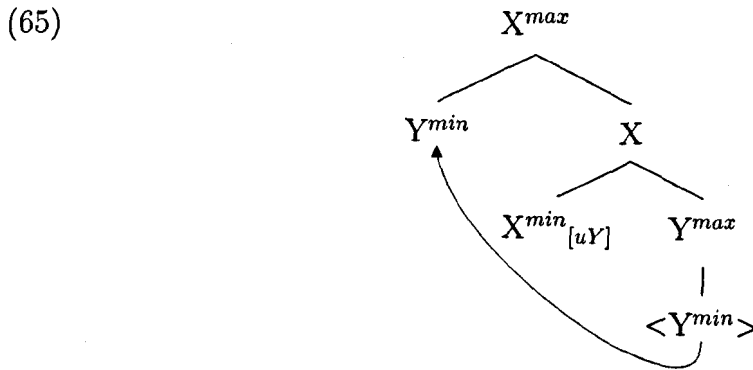
There is some disagreement in the literature as to what node projects after the moved head (the goal) has reached the specifier position of the attracting head (the probe). Some argue that the goal projects (Fanselow, 2004; Bury, 2003a,b, 2005) while others argue that it is the probe which projects (Matushansky, 2006; Contreras, 2003). There are also some proposals arguing that both the probe and the goal project (Citko, 2008a,b). The motivation for the first approach, as mentioned in §3.7 is to conform to the Structure Preserving Constraint, which I have argued to be undefinable under current assumptions. The last approach has not been theoretically well motivated, as I explained while evaluating Citko's (2008a; 2008b) proposal in §3.7. This leaves the second option, which is for the probe to project.

Matushansky (2006) argues that when two nodes are merged, the one which *c*-

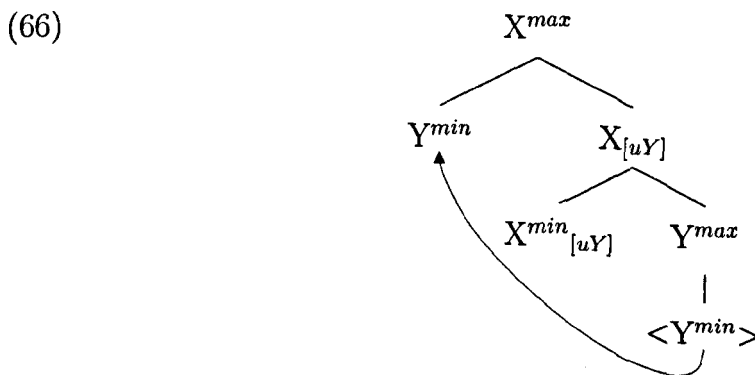
selects the other projects.²⁴ For example, when a node X is merged with another node Y, either can potentially project. If X c-selects Y, X projects, and if Y c-selects X, Y projects, as illustrated in (64).²⁵



Matushansky (2006) argues that the same projection mechanism takes place in External as well as Internal Merge of both heads and phrases. If a c-selecting node causes another node to move, it is the c-selecting head which projects. I assume that this is essentially on the right track.



Matushansky's system of projection would require X in (66) to inherit the c-selectional feature from X^{min} .



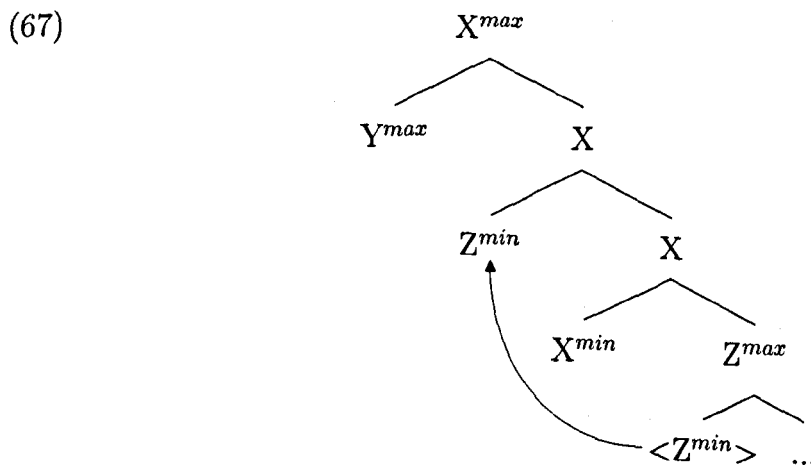
In the context of head-to-spec movement, this would mean that the attracting head projects, not the moved head. I agree with Matushansky's proposal that it is the

²⁴This projection system is also assumed by Adger (2003), among others.

²⁵I have indicated c-selection with an uninterpretable feature on the c-selecting head.

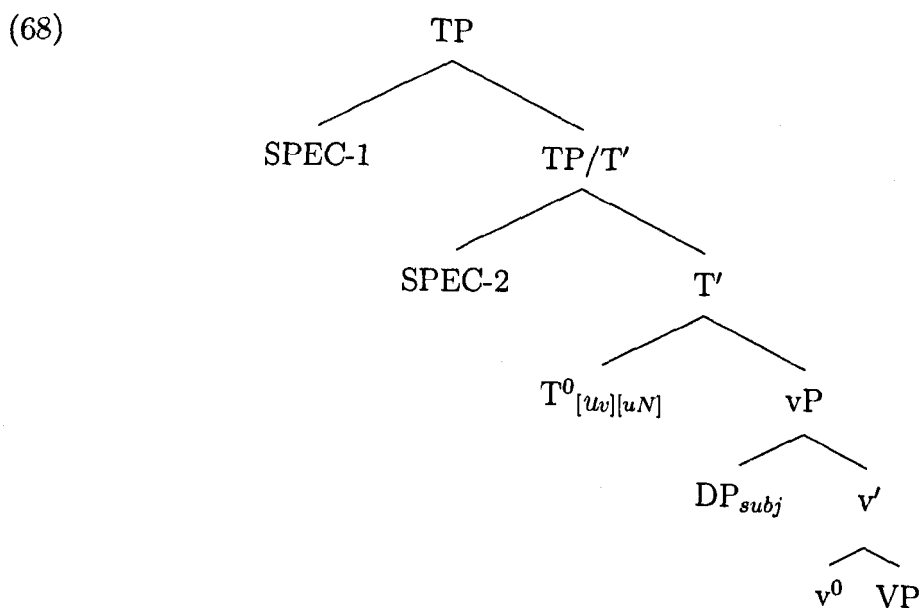
probe which projects after the movement to the specifier position. This approach is also in line with the theoretical framework assumed in this thesis. I explained in §1.3 that the node which projects is the one which passes its properties to the whole projection, or more specifically to the projected node. Consider, for example, the case of subject-auxiliary inversion in English. If this is taken to be a case of Head Movement, where the auxiliary moves from I to the C domain (spec/C as the head-to-spec approach assumes), allowing C to project would ensure that the question is a complete clause. However, if I projects, the resulting structure would be a projection of I, not of C, which would suggest that the question was not a complete clause. Moreover, in *wh*-questions, where a *wh*-word precedes the auxiliary, allowing C to project after Head Movement entails that the C used in questions causes the movement of the *wh*-word. If it were I which projected, this would entail that I would have to derive the movement of the *wh*-word. This last option would complicate the theory because the I projected would have to have a *wh*-feature which does not get checked until I moves to the C domain. Therefore, assuming that the probe projects is more minimalist and compatible with the assumptions used in this thesis.

Under the current proposal, moved heads target specifier positions. This can potentially lead to a “multiple specifier” structure, particularly when both Head Movement and Phrasal Movement or External Merge target the specifier of the same head, as shown in (67), where Y is a phrase either externally or internally merged.



One basic issue to consider is which specifier the moved head targets and the point in the derivation at which the head moves. Does the moved head take the inner or

the outer specifier, and does Head Movement precede or follow Phrasal Movement and External Merge? I claim, following Citko (2008a: 935) and Matushansky (2006: 82-83) that Head Movement precedes all the other Merge operations. Citko argues that Head Movement precedes External Merge, and Matushansky proposes that Head Movement precedes Phrasal Movement.²⁶ They argue for this ordering for different reasons. Citko does not provide a detailed argument, but she points out that there is no principle which disallows this ordering. Matushansky, on the other hand, claims that this ordering falls from the Transparency Condition. She argues that this condition guarantees that Head Movement always precedes Phrasal Movement because if Phrasal Movement took place before Head Movement did, the head which was to be moved would then be no longer accessible. For example, in (68) (adapted from Matushansky (2006: 82)), if $[uN]$ on T, which is supposed to derive phrasal movement, was checked first by moving DP to spec-2, the derivation would crash because $[uv]$ could no longer be checked as v^0 would not be accessible.



I argued above that way the Transparency Condition as defined in terms of pro-

²⁶Mahajan (2003), in the context of a remnant movement approach to Head Movement, also argues for the same ordering. He claims that if the opposite ordering is derived, morphology cannot work on the output because the moved head would not be linearly adjacent to the attracting head. So, effectively, he is also proposing that a morphological merger operation applies to the output of his remnant Head Movement approach.

jecting is problematic. However, the same ordering can be derived if one assumes that operations which apply to the immediate complement of the probe take place before operations which apply to other nodes. The complement would be the “closest” to the probe since the two are sisters, closeness being defined in terms of c-command. Thus, the c-selection feature requiring Head Movement is checked before other features because the goal of that feature is more accessible than the goals required to check other features. I propose that the C-Command Condition on Feature Checking in (69) ensures that Head Movement precedes Phrasal Movement and External Merge.

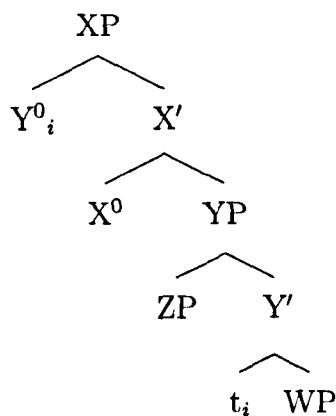
(69) **C-Command Condition on Feature Checking**

When a given head X needs to check two c-selectional features [*u*Y] and [*u*Z], The feature [*u*Y] is checked before [*u*Z] iff X c-commands Y and:

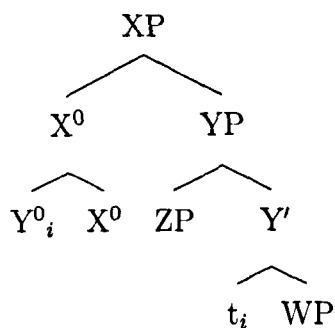
- a. all the instances/projections of Y c-command all the instances/projections of Z, or
- b. Z has not been inserted from the Lexical Array into the structure.

The last aspect of head-to-spec movement I consider here is whether or not a morphological merging operation applies to the output of Head Movement, merging the attracting and the attracted heads (the probe and the goal). Citko (2008a,b) and Mahajan (2003) imply that they assume that a morphological operation might apply to the output of Head Movement, but the main advocate for such a morphological operation is Matushansky (2006). As explained in §3.7, she proposes that M-merger does take place in the morphological component, as shown in (54) repeated here as (70), converting the structure created by head-to-spec movement (70a) to the structure in (70b).

(70) a.



b.



I have argued before that the way Matushansky formulates this operation is problematic for cases of multiple Head Movement (see §3.7). Before suggesting an alternative approach, I would like to consider whether it is desirable to have a morphological operation as a part of the definition of Head Movement.

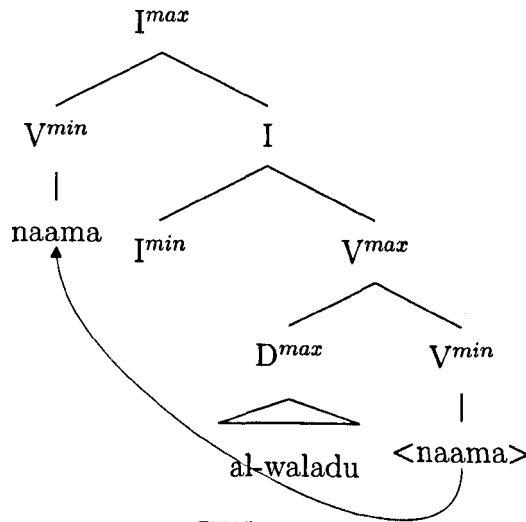
In §3.5 I pointed out that it is usually assumed that Head Movement takes place in highly inflected languages, suggesting that morphology might have a role to play. Nevertheless, I have argued that a purely morphological approach to Head Movement, such as the one suggested by Parrott (2001), is not theoretically desirable because it creates redundancy in the system and it cannot explain the semantic effects of Head Movement (see §3.4). In other words, Morphology alone cannot be the answer, but it still seems to play a role, at least in some cases.

Given that there is usually an inflectional or morphological reflection of Head Movement, I follow Matushansky (2006) in assuming that a morphological operation merges the “probe” and the “goal” of head-to-spec movement. This operation takes place after the relevant structure is spelled out, i.e., it takes place in the morphological component. I propose that the “probe” attracts the “goal” again, as it is the “probe” which is usually assumed to have the affixal requirements. For example, in verb

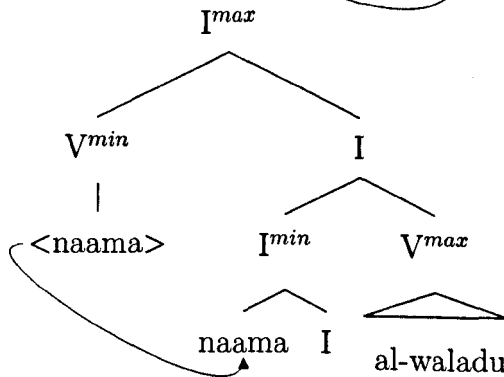
raising languages where verbs are highly inflected, V moves to spec/I, and after Spell Out, I moves V again and the inflections are spelled out on the verb. The Modern Standard Arabic sentence in (71) may be derived as in (72).

- (71) naama al-waladu. (MSA)
 slept(3-m-s) the boy(m-s-nom)
 "The boy slept."

(72) a.



b.

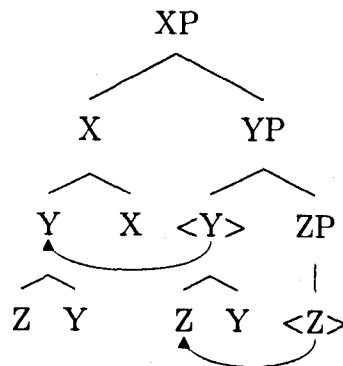


The idea of the “probe” attracting the “goal” again does not mean that I assume that the relationship between these two nodes in the morphology is the same as their relationship in the syntactic part of the derivation. I assume that probe-goal relations are established during the derivation and those links are encoded in the information sent to the morphology. In other words, the probe-goal relation established in the syntax forms a union between these two nodes and that union is interpreted by the morphology, resulting in these two nodes morphologically merged together. I also assume that the information sent to the morphology includes which of the two nodes is the “pulling” one, i.e. the probe. Thus, when the two nodes are M-merged, the

“pulling” node causes the “pulled” node to merge with it. This issue of which of the nodes is morphologically “moved” and merged may not be relevant when no other overt elements intervene between the morphologically merged heads. In other words, the morphological evidence only points to the two being merged, but not to where exactly the two nodes end up. However, if the two relevant heads are not adjacent, the morphological system would have to specify which of the two relevant positions the merged heads get pronounced at. Thus, I tentatively propose here that the two heads are merged at the position of the attracting head. This is also consistent with the structure resulting from standard Head Movement, where the moved heads is adjoined to the attracting one. However, in standard Head Movement, the merging between the two takes place in the syntax, whereas in the approach advocated here, it takes place at the morphological component. These morphological operations do not mean that syntactic operations take place at the morphological component. Rather, syntax moves a certain head to a position where morphology can access it and merge it with another head. The syntactic part of the derivation is necessary because, as explained in §3.4, Head Movement has meaning effects. The morphological part of the operation is also necessary because there is evidence from inflectional morphology that the “probe” and the “goal” are pronounced together.

One issue which remains to be resolved is how this system deals with multiple cases of Head Movement. Standard Head Movement would simply raise the complex head formed by head adjunction, as shown in (73).

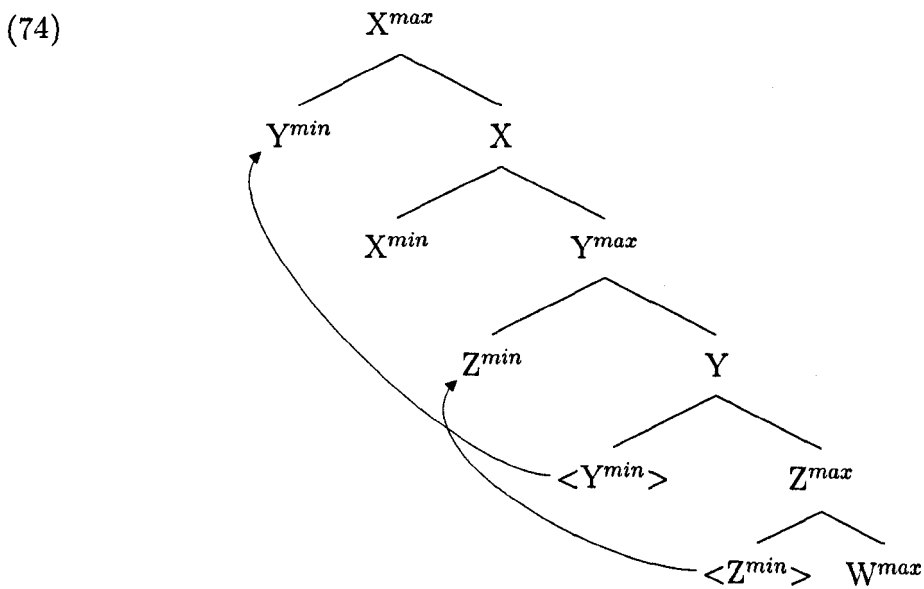
(73)



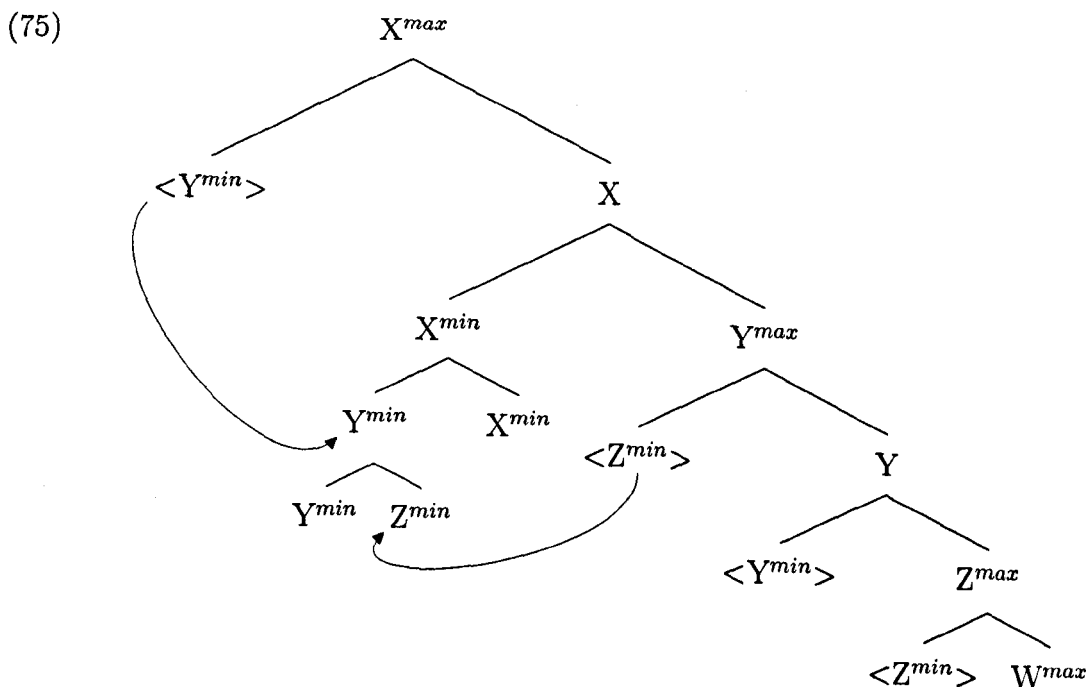
However, in head-to-spec movement, moved heads target specifier positions. An obvious issue to consider is how multiple cases of Head Movement are derived. If in the first instance of head movement a head moves into a specifier position, what

moves in the second instance? I have argued in §3.7 that both Matushansky’s (2006) idea of complex heads as phases and Vicente’s (2007) adaptation of that idea are problematic. I have also argued that the proposal made by Citko (2008a,b) which involves the same head moving twice is theoretically untenable.

To resolve this issue, I propose that the cases of multiple Head Movement involve multiple head-to-spec movements in the syntactic component, as a result of c-selectional requirements of two or more functional heads. Each instance of Head Movement moves a distinct head to a specifier position, as shown in (74).



When the structure is sent to the interface levels, multiple morphological merger operations take place in the morphological component, merging the moved and the attracting heads. I propose that each “probe” merges with the head it initially attracted, moving downwards. Thus, in (74), for example, X^{min} morphologically merges with Y^{min} , and then the affixal requirements of Y^{min} cause the morphological merger of Z^{min} . The morphological rules then interpret the resulting complex head and send it to the phonological system to be pronounced. These steps are illustrated in the skeletal structure in (75), where no other items intervene between the different heads. In §6.5.4, I will illustrate this proposal using a concrete case of multiple Head Movement.



This approach to multiple Head Movement, however, has some potential problems. One issue is that this account might seem to require that no lexical elements intervene between the different heads being m-merged. This could be problematic for V-to-I-to-C, where the subject in spec/I intervenes. However, it is possible that an operation like “Move Terminal” proposed by Parrott (2001) can apply in those cases. He argues that this morphological operation can merge nonadjacent nodes (see §3.5). I adopt his assumption with respect to morphological merger operations. Another issue could be that in the second instance of morphological merger, illustrated by the merger of Y^{min} and Z^{min} in (75), Y^{min} might be seen to be too deeply embedded to derive the movement of Z^{min} . A possible solution would be to assume that the affixal requirements of Y^{min} would be inherited by the complex head $Y^{min}+X^{min}$ and therefore Z^{min} can still be moved. Whether Z^{min} actually is m-merged with Y^{min} , as represented in (75) or with the complex head $Y^{min}+X^{min}$ depends on whether one’s morphological theory allows Y^{min} to directly cause Z^{min} to move. In the present context, I assume that such an operation is legitimate in the morphological component. Nevertheless, the morphological analysis presented here is only tentative, not a fully developed one because this thesis is not set within a formal morphological theory. A full morphological account of M-merger is outside the scope of this thesis, as it may

best be attempted in a cross-linguistic study of Head Movement.

In this section, I have laid out the details of the cyclic approach to Head Movement I am adopting in this thesis. Following various proposals in the literature, I assume that moved heads extend the structure at the root. Furthermore, I adopt and slightly adapt Matushansky's idea that a morphological merger operation applies to the output of head-to-spec movement, merging the moved head and the attracting one.

3.9 Conclusion

In this chapter, I discussed the status of standard head-to-head Movement in current syntactic theory. The most important issue raised against HM is the fact that, under current theoretical assumptions, this movement is countercyclic. I argued that allowing heads to target specifier positions, thus extending the structure at the root, makes Head Movement compatible with the Extension Condition. I also explained that head-to-spec movement is not problematic under current assumptions, especially since the Structure Preserving Constraint is not definable in barless syntax. At the end of §3.8 I considered the M-merger operation which Matushansky (2006) argues to be a morphological part of Head Movement, and I concluded that it is in fact desirable to have a morphological operation to follow head-to-spec movement.

I pointed out in §2.10 that Head Movement is an essential part of the analysis of Arabic DPs. In the next three chapters, I will introduce and analyse several Arabic Construct State structures, starting with the Nominal Construct State. I will exploit the analysis proposed in this chapter to account for the properties of these Construct States. The complex structure of the Construct States will offer more diagnostics for the structure of the Arabic DP as a whole, shedding light on the structure of simple DPs as well.

Chapter 4

The Nominal Construct State

4.1 Introduction

Construct States are complex, mostly nominal, constructions widely used in some Semitic languages, particularly Arabic and Hebrew. Construct States have a complex structure, and therefore they provide intricate patterns which illustrate their own properties, as well as the properties of the Arabic DP in General. As briefly explained in §2.6, Construct States may be headed by a number of categories. In this chapter, I will focus mainly on Construct States headed by nouns. I will explain the behaviour of these constructs in detail (§4.2) and show how they differ from the other genitive construction in Arabic, i.e., the Free State (§4.3). I will review the major accounts in the literature analysing both Construct States and Free States (§4.4 and §4.5, respectively), and then show how my approach to Head Movement presented in chapter 3 can be used to analyse Nominal Construct States (§4.6). In the course of analysing these constructs, I will also make some proposals related to simple DPs, introduced in chapter 2. Having formulated a minimalist account to Nominal Construct States, I will show how this account applies to Construct States headed by quantifiers, which are also functionally nominal (§4.7). Finally, §4.8 concludes the chapter.

4.2 Properties of the Nominal Construct State

The basic structure of Construct States consists of a head followed by a genitive phrase. Nominal Construct States as defined in this thesis are headed by nouns and they function as nominals in the sense that they occupy positions normally associated with nominals. These constructs consist of a noun head and a genitive phrase and may also include modifiers of both these components. In this section, I will explain the properties of these Construct States in Modern Standard Arabic and Makkan Arabic. Nominal Construct States show the same patterns in both varieties. Therefore, I will use Modern Standard Arabic examples for illustration purposes because this variety uses overt case endings, but I assume that the same patterns apply to Makkan Arabic unless I point out otherwise. The majority of the properties explained in this section are true for other types of Construct States, so I will sometimes use the term “Construct States” as a collective term referring to all types of constructs. I will use only Nominal Construct States in my examples, though, because this is the structure which will be analysed in this chapter.

Nominal Construct States occupy nominal positions and structural case is checked¹ on the first noun in the construct, suggesting that the first noun is the head. For example, the Construct State *ḥāaris al-banki* “the bank guard” is the subject in (1a), the object of a verb in (1b) and the object of a preposition in (1c).

- (1) a. haraba ḥāarisu al-banki. (MSA)
 ran away(3-m-s) guard(m-s-nom) the bank(m-s-gen)
 “The bank guard ran away.”
- b. raʔaito ḥāarisa al-banki. (MSA)
 saw(1-s) guard(m-s-acc) the bank(m-s-gen)
 “I saw the bank guard.”
- c. qobida ʿala ḥāarisi al-banki. (MSA)
 was arrested on guard(m-s-gen) the bank(m-s-gen)
 “The bank guard was arrested”

¹I assume that case is checked, not assigned, as will be explained in my analysis in this chapter. However, sometimes I talk about case assignment, mainly in the context of discussing other people’s work. Because I am reporting their ideas, I will maintain the assumptions they have.

As the examples in (1) show, the case marking used on the head of the Construct State *haaris* “guard” depends on the position the nominal occupies: nominative case in (1a), accusative case in (1b) and genitive case in (1c). The phrase following the head of the Construct State, however, is always marked for genitive case. I assume that the same case checking pattern takes place in Makkan Arabic, although case is not overtly marked. For example, in (2), I assume that accusative case is checked on *baab* “door” and genitive case on *bait* “house”, even though no overt marking is used.

- (2) fataḥt baab al-bait (MA)
 opened(1-s) door(m-s) the house(m-s)
 “I opened the door of the house”

The relationship between the head and the genitive component in the Nominal Construct State can express a variety of thematic relationships such as possessor-possessed (3a), action-agent (3b), action-theme (3c) and property-object (3d).

- (3) a. kitaabu aṭ-ṭaalibi (MSA)
 book(m-s-nom) the student(m-s-gen)
 “the student’s book”
- b. jariu aṭ-ṭifli (MSA)
 running(m-s-nom) the child(m-s-gen)
 “the child’s running”
- c. ɗarbu al-ʔaṭfaali (MSA)
 beating(m-s-nom) the children(m-p-gen)
 “child-beating”
- d. laonu al-maaʔi (MSA)
 colour(m-s-nom) the water(m-s-gen)
 “the colour of water”

The genitive phrase in the Nominal Construct State can be either a definite DP (4a), an indefinite DP (4b), a cliticised pronoun (4c) or a proper name (4d).

- (4) a. ɗaoʔu aš-šamsi (MSA)
 light(m-s-nom) the sun(f-s-gen)
 “sunshine”
- b. modeeru madrasati-n (MSA)
 headmaster(m-s-nom) school(m-s-gen) ind
 “a school’s headmaster”

- c. ʔabu-ho (MSA)
 father(m-s-nom) his
 “his father”
- d. waladu xaalidi-n² (MSA)
 son(m-s-nom) Khalid nunation
 “Khalid’s son”

Neither of the Arabic determiners (the definite article *al-* and nunation) can be affixed onto the head of the Construct State, as shown in (6).

- (5) a. (*al-)^cameedu al-kolliati (MSA)
 the dean(m-s-nom) the college(f-s-gen)
 “the dean of the college”
- b. ša^cru(*-n) fataati-n (MSA)
 hair(m-p-nom) ind girl(f-s-gen) ind
 “a girl’s hair”

As briefly pointed out in §2.6, the definiteness status of the whole construct, however, is determined by the definiteness of the genitive phrase; this property is often referred to as “definiteness spread” (Ritter, 1987; Borer, 1999; Siloni, 2001, and others). For example, the constructs in (6a) and (6b) inherit the definiteness of the genitive phrase whether the latter is definite or indefinite, as reflected in the translations.

- (6) a. baabu al-baiti (MSA)
 door(m-s-nom) the house(m-s-gen)
 “the door of the house”
- b. baabu baiti-n (MSA)
 door(m-s-nom) house(m-s-gen) ind
 “a door of a house”

More support for the idea of definiteness spread comes from the behaviour of adjective modifying the head of the Construct State. As noted in §2.4, postnominal adjectives agree with the noun they modify in number, gender, case and definiteness. When an adjective is used to modify the head of the Construct State, and consequently the whole construct, the adjective agrees with the head in number, gender and case, but it has the same determiner as the genitive phrase, as the examples in (7) show.

²This is the special use of nunation explained in §2.3.

- (7) a. *ṭawbu* *al-fataati* *al-jadeedu* (MSA)
 dress(m-s-nom) the girl(f-s-gen) the new(m-s-nom)
 “the girl’s new dress”
- b. *ṭawbu* *fataati-n* *jadeedu-n* (MSA)
 dress(m-s-nom) girl(f-s-gen) ind new(m-s-nom) ind
 “a girl’s new dress”

The Construct State in (7a) includes a definite genitive phrase, while the construct in (7b) includes an indefinite one. In both cases, the adjective is masculine, singular and nominative, indicating that it is modifying *ṭawbu* “dress” rather than *fataati* “girl”. Nevertheless, in (7a) the adjective has the definite article and in (7b) it is nunated. The fact that adjectives in both cases take the determiners that they do suggests that the head noun, and subsequently the whole Construct State, is covertly valued for definiteness and that this value is the same as the definiteness value of the genitive phrase.

The examples in (7) show another important property of Nominal Construct States; adjectives modifying the head of the Construct State do not come directly to the right of the head, but they follow the genitive phrase. Example (8) shows that placing the adjective between the head and the genitive phrase is not allowed.

- (8) * *bintu* *al-jameelatu* *ar-rajoli* (MSA)
 daughter(f-s-nom) the beautiful(f-s-nom) the man(m-s-gen)
 “the man’s beautiful daughter”

This property applies to other postnominal modifiers as well. Numbers (9a), demonstratives (9b) and quantifiers (9c) cannot intervene between the head of the Construct State and the genitive component when they are modifying the head, but they must occur in a position following the latter.

- (9) a. *kotobu* *al-maadati* *aṭ-ṭalaatatu* (MSA)
 books(m-p-nom) the course(f-s-gen) the three(gen)
 “the three books of the course”
- b. *waladu* *?oxt-i* *haaṭa* (MSA)
 son(m-s-nom) sister(f-s-gen) my this(m-s)
 “this son of my sister’s”

- c. *ṣadeeqaatu al-mo^callimati kollu-honna* (MSA)
 friends(f-p-nom) the teacher(f-s-gen) all(nom) them(f)
 “all the teacher’s friends”

When two or more adjectives modify the head of the Construct State, the order of the adjectives with respect to each other would be the same as seen in the combination of adjectives explained in §2.4 and §2.9, as shown in (26).

- (10) *kitaabu al-mo^callimati al-ʔaxḍaru al-kabeeru*
 book(m-s-nom) the teacher(f-s-gen) the green(m-s-nom) the big(m-s-nom)
 (MSA)

“the teacher’s big green book”

I pointed out in §2.8 that demonstratives may occur prenominally in a Dem projection above D, making demonstratives different from other prenominal modifiers which I assume form constructs. This prenominal use of demonstratives is not allowed with Construct States. A demonstrative modifying the head of a Nominal Construct State may only be used as shown in (9b) above, but not at the beginning of the construct, as (11) shows.³

- (11) * *haaṭa waladu ʔoxt-i* (MSA)
 this(m-s) son(m-s-nom) sister(f-s-gen) my
 “this son of my sister’s”

Mohammad (1999) considers the behaviour of demonstratives in Nominal Construct States to be parallel to that of articles in these constructions. He argues that demonstratives cannot precede the head noun in the Construct State for the same reason definite articles do not. I believe that Mohammad’s observation is essentially on the right track, although the picture is not as straightforward as it may initially seem.

³ The example in (11) actually has an alternative interpretation in which the same string would form a nominal sentence with the structure DP XP, where XP can be any non-verbal predicate. Under that interpretation that string of words would form a grammatical sentence, as shown in (1).

- (1) *haaṭa waladu ʔoxt-i* (MSA)
 this(m-s) son(m-s-nom) sister(f-s-gen) my
 “This is my sister’s son.”

See Rapoport (1985) and Rothstein (1995) for different analyses of these sentences.

I will come back to this point in §4.6 in the course of my proposed analysis of the Construct States.

The genitive phrase can also be modified by any of the modifiers introduced in chapter 2. The position and agreement of these modifiers with respect to this phrase would be the same as expected for simple DPs. For example, an adjective modifying the genitive phrase would occur directly to its right and would agree with it in number, gender, case and definiteness, as shown in (12).

- (12) laonu az-zahrati al-jameelati (MSA)
 colour(m-s-nom) the flower(f-s-gen) the beautiful(f-s-gen)
 “the colour of the beautiful flower”

Thus, effectively, both modifiers of both the basic components of the Construct State may occur in a construct-final position, to the right of the genitive phrase, and both modifiers agree with this phrase in definiteness. This situation can potentially lead to ambiguity, especially in Makkan Arabic where case is not overly marked. If both the head and genitive phrase have the same number and gender features, an adjective in a construct-final position might be interpreted as modifying the head or the genitive phrase, as illustrated in the Makkan Arabic example in (13).

- (13) baab al-bait al-jadeed (MA)
 door(m-s) the house(m-s) the new(m-s)
 “the new door of the house” *or* “the door of the new house”

Nevertheless, if the head and the genitive phrase differ in number and/or gender, the adjective would agree with the noun it modifies and the agreement would make it clear which noun the adjective modifies. For example, in (14a) the adjective takes the masculine singular form, indicating that it modifies the masculine singular noun *bait* “house”, and in (14b) it is clear that the adjective modifies the feminine singular noun *‘aaila* because the adjective is in the feminine singular form.

- (14) a. bait al-‘aaila as-sageer (MA)
 house(m-s) the family(f-s) the small(m-s)
 “the family’s small house”
 b. bait al-‘aaila as-sageera (MA)
 house(m-s) the family(f-s) the small(f-s)
 “the small family’s house”

Since modifiers of both the head and the genitive phrase apparently occur in the same position, an interesting situation to consider would be when both these components are modified. In such situations, the modifier of the genitive phrase precedes the modifier of the head, giving a nested structure, as shown in the MSA example in (15a). The alternative order, where the modifier of the genitive phrase follows the modifier of the head, is not possible (15b).

- (15) a. saakinu al-baiti al-kabeeri
 resident(m-s-nom) the house(m-s-gen) the big(m-s-gen)
 al-jadeedu (MSA)
 the new(m-s-nom)
 “the new resident of the big house”
- b. * saakinu al-baiti al-jadeedu
 resident(m-s-nom) the house(m-s-gen) the new(m-s-nom)
 al-kabeeri (MSA)
 the big(m-s-gen)
 “the new resident of the big house”

Construct States can be embedded inside other Construct State DPs, giving a nested structure, as in (16). Each embedded Construct State serves as the genitive component of the immediately higher one. Consequently, genitive case is checked on all the heads of the embedded Construct States, as well as on the genitive component of the most deeply embedded one. For example, in (16), the Construct State *şadeeqati al-^caroosi* “the bride’s friend” is embedded inside a higher Construct State with *?omi* “mother” as a head. This latter Construct State is also embedded within an even higher Construct State with *tiabu* “clothing” as a head. Structural case is checked only on the highest, leftmost head, while all the heads of the embedded Construct States are marked for genitive case.

- (16) tiabu ?omi şadeeqati al-^caroosi
 clothing(m-p-nom) mother(f-s-gen) friend(f-s-gen) the bride(f-s-gen)
 (MSA)

“the brides’s friend’s mother’s clothes.”

In such embedded Construct State structures, as well being a part of the genitive component of the higher construct, each embedded head has the properties of a

- d. xatul-at-i (MH)
 cat-fs-1poss
 “my female cat”

The final [t] is absent from Free States (18a), another Semitic genitive construction to be explained in §4.3, and free standing forms (18c), but it is used in Construct States (18b) and when the noun carries a possessive suffix (18d), suggesting that the “phonological” status of the head of the Construct State is the same as the status of the noun used with the possessive suffix.

A similar pattern to the one in (18) is found in Arabic. This particularly applies to nouns with a final feminine *-t*, such as *madrasat* “school” or *maktabat* “library”. This final *-t* is dropped if followed by a pause, *madrasa* and *maktaba*, but it is obligatorily used in connected speech, if a bound pronoun is attached to the end of the word, as in *madrasat-i* “my school” and *maktabatu-ho* “his library” and in Construct States, as in *madrasatu ʔoxt-i* “my sister’s school”. However, this use is to be expected in Modern Standard Arabic because the *-t* form is always used in connected speech, and therefore it can be claimed that this use is phonologically governed, especially that (vowel) case endings are always used in connected speech in Modern Standard Arabic.

Makkan Arabic, however, does not use the *-t* form except when the noun is either the head of a Construct State or when pronouns are attached to the noun. For example, in Makkan Arabic, the free form *madrasa* “school” can be used before adjectives (19a), but not with possessive suffixes (19b) or in Construct State DPs (19c). The form *madrasat* is used in the last two cases ((19d) and (19e)).

- (19) a. *madrasa ʔilwah* (MA)
 school(f-s) nice(f-s)
 “a nice school”
- b. **mardrasa-i* (MA)
 school(f-s) my
 “my school”
- c. **madrasa ʔoxt-i* (MA)
 school(f-s) sister(f-s) my
 “my sister’s school”

- d. mardrasat-i (MA)
 school(f-s) my
 “my school”
- e. madrasat ʔoxt-i (MA)
 school(f-s) sister(f-s) my
 “my sister’s school”

The form *madrasat* can be claimed to be a phonologically dependent form because it cannot be used as a completely independent form, without a possessive suffix or a genitive phrase. Thus, at least in Hebrew and Makkan Arabic, it can be shown that heads of Construct States have some phonological properties making them similar to bound forms in the sense that these heads cannot form DPs independently. They must be used as the heads of Construct States, followed by genitive phrases either in the form of affixed pronouns or full DPs.

Extraction out of Construct States is not allowed, suggesting that Nominal Construct States are DP islands.⁴ For instance, (20a) is not grammatical because the *wh*-phrase *man* has been moved out of the Nominal Construct State *walada man* “whose son”. If the whole construct is fronted to form the question, as in (20b), the structure would be grammatical.

- (20) a. * man darrasta walada? (MSA)
 who taught(2-m-s) son(m-s-acc)
- b. walada man darrasta? (MSA)
 son(m-s-acc) who taught(2-m-s)
 “Whose son did you teach?”

There are some distinct properties of Construct States which make them different from simple DPs. I have illustrated these properties using Nominal Construct States but these properties mostly apply to other constructs as well. Mainly, Construct States consist of a head and a genitive phrase. Modifiers of the head do not immediately follow it, but they come in a construct-final position. The definiteness value of the genitive phrase spreads to the whole construct. Moreover, the head of the Construct State has some phonological properties of bound forms and it is not

⁴This will be relevant in §4.7 in the course of analysing Quantifier Construct States.

possible to extract any constituent out of a construct. In the next section, I will introduce Free States, the other genitive construction in Arabic, and show how they differ from Construct States.

4.3 Free State Genitives

Construct States are not the only type of genitive constructions in Semitic languages. Free States, sometimes referred to as Free Genitives, are another type of genitive constructions which mainly expresses possession. The full range of thematic relations expressed by the Construct State is not always available for Free States, at least in some Arabic varieties. The main structural differences between Construct States and Free States relate to the use of prepositions, definiteness spread and the position of adjectives.

In Free State genitives, the head and the genitive component of the construction are linked by a preposition, and it is usually assumed that it is this preposition which checks case on the genitive phrase (Ritter, 1987, 1991; Shlonsky, 2004, for example). Contrast the Nominal Construct State in (21a) and the Free State in (21b).

- (21) a. *kitaabu at-taalibi* (MSA)
 book(m-s-nom) the student(m-s-gen)
 “the student’s book”
- b. *kitaabu-n li-t-taalibi* (MSA)
 book(m-s-nom) ind prep the student(m-s-gen)
 “a book belonging to the student”

In Modern Standard Arabic, this construction mainly expresses possession. Free States expressing other thematic relations such as action-agent (22a) or property-object (22b) are not acceptable.

- (22) a. **rakdhu-n li-l-waladi* (MSA)
 running(m-s-nom) ind prep the boy(m-s-gen)
 “the boy’s running”
- b. **laonu-n li-z-zahrati* (MSA)
 colour(m-s-nom) ind prep the flower(f-s-gen)
 “a colour of the flower”

- b. maa yedhee^c ḥag waraa-h mṭaalib. (MA)
 not get lost(3-m-s) right(m-s) behind it seeker(m-s)
 “No right//property will be lost as long as its rightful owner keeps on
 seeking it.”

I claim that *ḥag* has acquired an additional categorial status as a preposition in Makkan Arabic. However, this categorial change is not specific to *ḥag*. Some other lexical items have undergone categorial shift in Makkan Arabic. For example, *marra* means “an instance” in both Modern Standard Arabic and Makkan Arabic ((27a) and (27b)), but in Makkan Arabic, *marra* can also be used as a degree adverb (28).

- (27) a. raʔaito-ho ṭalaṭa marraati-n. (MSA)
 saw(1-s) him three(m) instances(f-p-gen) ind
 “I saw him three times.”
- b. roḥt hinaak marra waḥda. (MA)
 went(1-s) there instance(f-s) one(f)
 “I went there once.”

- (28) haada al-^caṣeer marra ṭi^cim. (MA)
 this(m) the juice(m-s) very tasty(m-s)
 “This juice is very tasty.”

Moreover, (Bardeas, 2005) argues that the form *hoa* and its variants, which is used at the beginning of questions in Makkan Arabic, is an expletive interrogative complementiser. This form, which Bardeas calls Q-Pron, superficially resembles pronouns and inflects for number and gender, as shown in (29) (Bardeas 2005: 16-17).

- (29) a. hoa al-walad ja? (MA)
 he the boy(m-s) came(3-m-s)
 “Did the boy come?”
- b. hia ʔoxt-ak jaat? (MA)
 she sister(f-s) your(m) came(3-f-s)
 “Did your sister come?”
- c. homa al-modarreseen jo? (MA)
 they(m) the teachers(m-p) came(3-m-p)
 “Did the teachers come?”

It can be argued that pronouns in Makkan Arabic have acquired a new categorial status as complementisers. The use of pronouns as Q-Pron shares some of the prop-

erties of the use of *ḥag* as a preposition; in both cases, the new usage is an agreeing functional category. Thus, the thesis that *ḥag* can be used as an agreeing preposition in Makkan Arabic is in line with other facts from this dialect; there are other instances in Makkan Arabic where lexical items have acquired new uses, and some of these uses are of agreeing functional elements.

Examples (21b) and (23) above show an important property of Free States which makes them different from Construct States: heads of Free States do take determiners. In fact, the definiteness of the head of the Free State as well as that of the whole Free State DP is independent of the definiteness of the genitive DP. For example, in (21b), the Free State head *kitaabu-n* “book” is nunated, something shown to be ungrammatical in Construct States (§4.2). In the Makkan Arabic examples in (23), the heads take the definite article *al-*. More importantly, the definiteness article used on the head of the Free State does not have to be the same as the one used on the genitive phrase, as shown in (21b), where the head of the Free State is indefinite *kitaabu-n* “a book” and the genitive phrase is definite *aṭ-ṭaalibi* “the student”. Thus, the definiteness spread seen in Construct States does not take place in Free States. In fact, in Modern Standard Arabic, Free States can be used only when the head, and therefore the whole Free State DP, is indefinite, as shown in (30a) and (30b). It is not possible to form a Free State genitive with a definite head ((30c) and (30d)).⁵

- (30) a. *kitabu-n* *li-l-waladi* (MSA)
 book(m-s-nom) ind prep the boy(m-s-gen)
 “a book belonging to the boy”
- b. *kitabu-n* *li-waladi-n* (MSA)
 book(m-s-nom) ind prep boy(m-s-gen) ind
 “a book belonging to a boy”
- c. * *al-kitabu* *li-l-waladi* (MSA)
 the book(m-s-nom) prep the boy(m-s-gen)
 “a book belonging to the boy”

⁵The star on in (30c) and (30d) indicates that these examples are ungrammatical under the DP interpretation. They are, however, grammatical as nominal sentences of the type explained in footnote 3 in §4.2, meaning “the book belongs to the boy” and “the book belongs to a boy”, respectively.

- d. * al-kitabu li-waladi-n (MSA)
 the book(m-s-nom) prep boy(m-s-gen) ind
 “a book belonging to a boy”

In Makkan Arabic, though, all the four configurations corresponding to those shown in (30) are acceptable. It is possible for the head to be either definite or indefinite, and that is independent of the definiteness status of the genitive phrase, as shown in (31).

- (31) a. kitab ḥag al-walad (MA)
 book(m-s) prep the boy(m-s)
 “a book belonging to the boy”
- b. kitab ḥag walad (MA)
 book(m-s) prep boy(m-s)
 “a book belonging to a boy”
- c. al-kitab ḥag al-walad (MA)
 the book(m-s) prep the boy(m-s)
 “the book belonging to the boy”
- d. al-kitab ḥag walad (MA)
 the book(m-s) prep boy(m-s)
 “the book belonging to a boy”

The definiteness patterns of (31b) and (31c), where both the head and the genitive phrase share the same value, are derivable by Construct States as well, whereas the only way to get the definiteness expressed in (31a) and (31d) is the Free State.

The last important difference between Construct States and Free States relates to the position of head modifiers. I explained in §4.2 that modifiers of the head of a Construct State appear in a construct-final position. In contrast, modifiers of the head of the Free State immediately follow the head, as shown in (32). The adjective *jadeedu-n* “new” immediately follows *kitabu-n* “book”, and the adjective agrees with the head in number, gender, case and definiteness

- (32) kitabu-n jadeedu-n li-l-waladi
 book(m-s-nom) ind new(m-s-nom) prep the boy(m-s-gen)
 aṣ-ṣaḡeeri (MSA)
 the little(m-s-gen)
 “a new book belonging to the little boy”

In this section, I introduced the Free State, a Semitic genitive structure which expresses similar meanings to the Construct States but has special features making it structurally different from the Construct State. In the course of my analysis of the Construct State in §4.6 I will explain how the proposal I make explains the differences between these two genitive constructions. Before presenting my account, I will briefly review the major analyses of Construct States in the generative literature.

4.4 Previous Analyses of Construct States

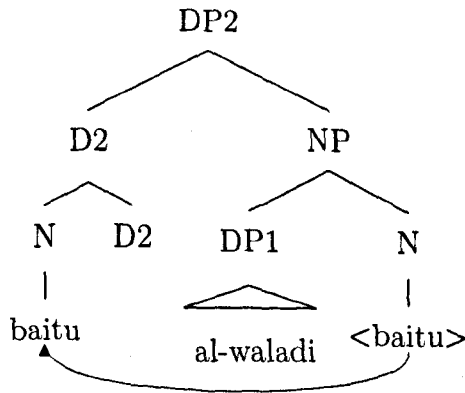
I pointed out in chapter 2 that standard Head Movement is generally assumed to be a part of the structure of Arabic DPs in general and Construct States in particular. In fact, most of the analyses proposed for Nominal Construct States involve head-to-head movement of N-to-D (Ritter, 1988; Fassi-Fehri, 1989, and others). However, there has been one recent proposal trying to derive the properties of these constructs by Phrasal Movement (Shlonsky, 2004). I will review both Head Movement and Phrasal Movement approaches to Construct States and show how each one of them attempts to account for the major properties of these constructions.

Following Ritter (1987), the majority of the analyses proposed for Construct States involve at least one instance of standard Head Movement (Borer, 1996, 1999; Fassi-Fehri, 1989, 1993a; Mohammad, 1999; Ritter, 1988, 1989, 1991; Siloni, 1991, 1996, and others). These proposals claim to be able to account for all the major properties of Construct States, mainly case assignment to the genitive phrase, definiteness spread and the position of adjectives. I will first give a general overview of these analyses and then tease apart some of the differences between them.

It is common in the analyses offered for the Semitic Construct State to involve N-to-D movement as a part of the derivation of these constructions. For example, the Nominal Construct State in (33a) would in very simple terms proceed as shown in (33b), with movement of N-to-D.

- (33) a. baitu al-waladi (MSA)
 house(m-s-nom) the boy(m-s-gen)
 “the boy’s house”

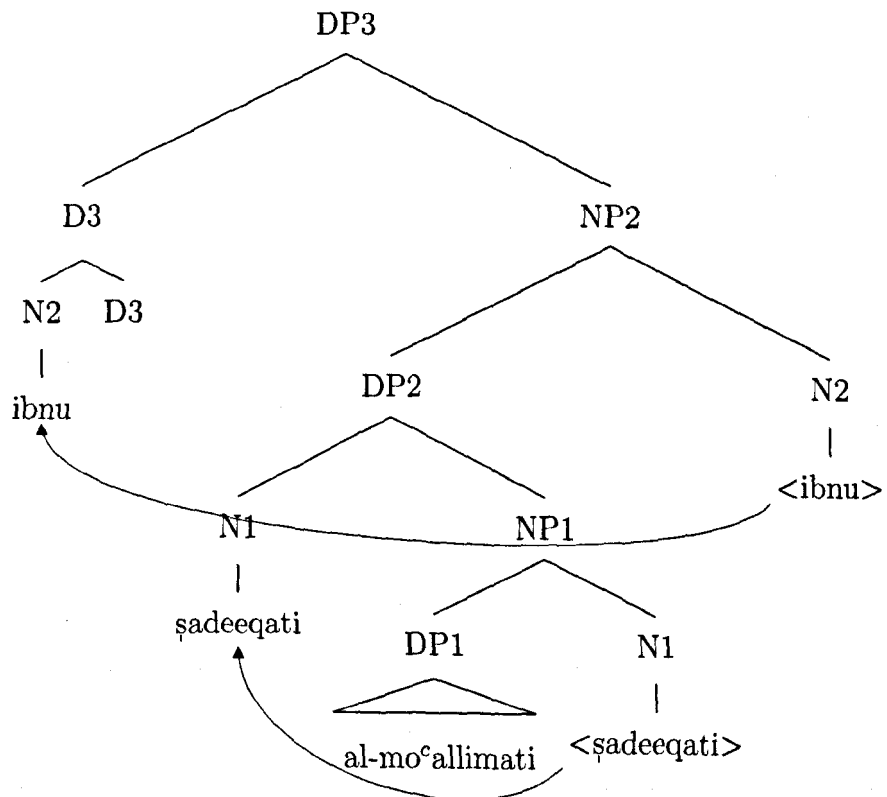
b.



This movement gives the right word order attested in Construct State: genitive phrase follows the head. It is also compatible with embedded Construct States ((34a) analysed as (34b)). The embedded Construct State would also involve N-to-D movement, resulting in the observed order.

- (34) a. ?ibnu ?adeeqati al-mo^oallimati (MSA)
 son(m-s-nom) friend(f-s-gen) the teacher(f-s-gen)
 "the teacher's friend's son"

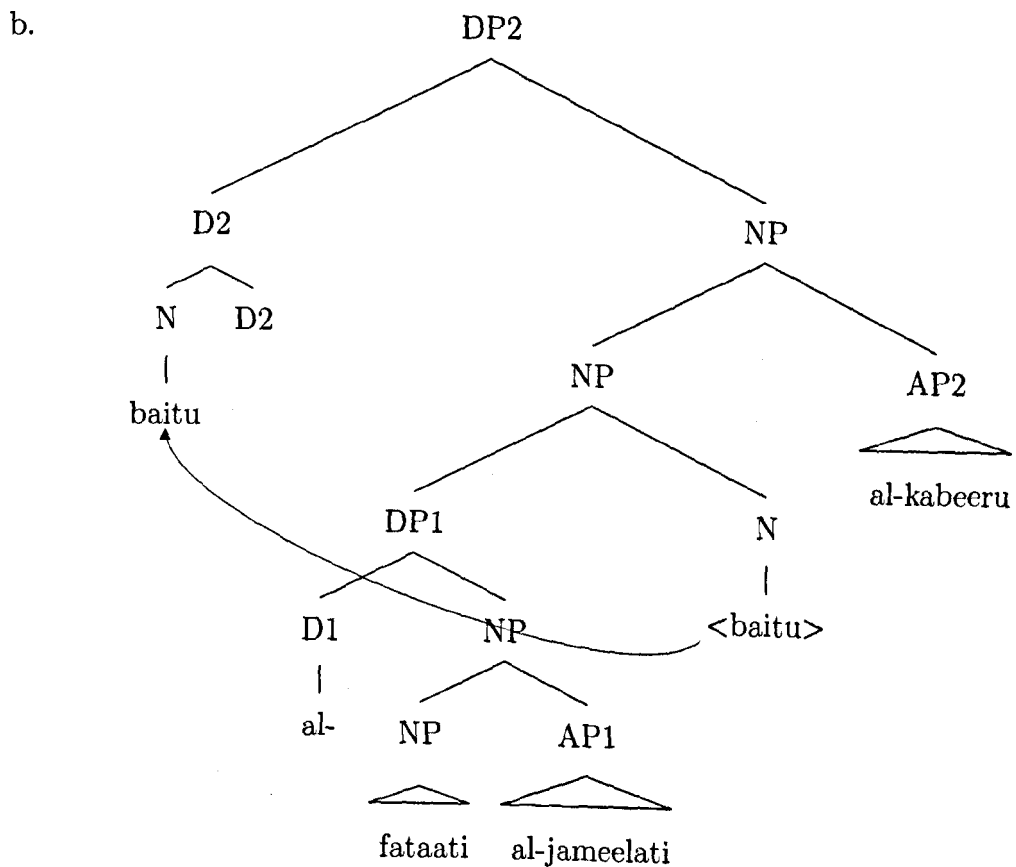
b.



Furthermore, such analyses can explain the position of adjectives in Construct States where modifiers of the head follow modifiers of the genitive phrase. If adjectives are

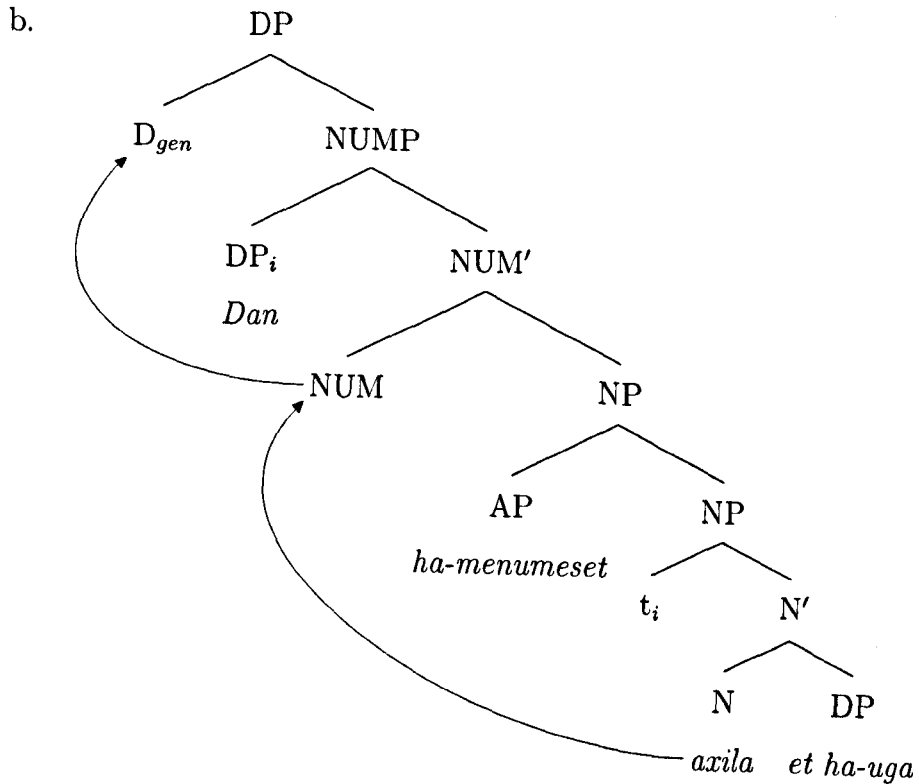
taken to be right-adjoined to maximal N projections, the expected position for a modifier of the head of the Construct State would be the position of AP2 in (35b), which corresponds to a construct-final position. An adjective modifying the genitive phrase would be right-adjoined at a lower position (AP1 in (35b)), which would precede the modifier of the head.

- (35) a. baitu al-fataati al-jameelati
 house(m-s-nom) the girl(f-s-gen) the beautiful(f-s-gen)
 al-kabeeru (MSA)
 the big(m-s-nom)
 “the big house of the beautiful girl”



However, there is some disagreement in the literature as to whether there is a mediating node in the movement of N-to-D: Num for Ritter (1991) and Borer (1999), Poss for Fassi-Fehri (1993a) or none for Mohammad (1999). When there is a mediating node, the possessor is proposed to move to the specifier of the mediating node for genitive case checking. For example, in Ritter (1991), the genitive phrase in the Hebrew example in (36a) moves to spec/Num, as shown in (36b) (Ritter 1991: 45).

- (36) a. axilat Dan ha-menumeset et ha-uga (MH)
 eating Dan the polite of the cake
 "Dan's polite eating of the cake"



A major motivation for these mediating nodes is the position of adjectives in some Construct States headed by Verbal Nouns, which will be discussed in detail in chapter 6. In brief, Verbal Noun Construct States may take two arguments, typically an agent and a theme. There are many patterns for this type of construct, but I will consider only one case where genitive case is checked on the agent and the theme appears in a prepositional phrase, as in the Hebrew Construct State in (36a). In this example the adjective *ha-menumeset* "polite" is located between the agent *Dan* "Dan" and the prepositional phrase referring to the theme of the eating *et ha-uga* "of the cake". Assuming that APs are adjoined to NPs, a derivation which raises N only to D, with no further movement to a higher projection, will falsely predict that the adjective would appear either to the left of the agent, if the adjective is left-adjoined, or to the right of the theme, if it is right-adjoined. Ritter (1991) proposes that the agent - the genitive DP - raises from spec/NP to the specifier of a functional projection lower than D, which she calls Num. N first moves to Num, and subsequently to D, as a part

of the Num complex, as shown in (36b). Ritter takes adjectives to be consistently left-adjoined to NPs, and her system can explain the fact that the position of the adjective in this structure is between the agent and the theme. Having proposed a mediating node to account for one Construct State structure, she assumes that this mediating node is a part of the derivation of all constructs.

Although the majority of the studies on Construct States share the idea that N-to-D movement takes place in the derivation, the analyses still differ in several respects. The main differences relate to the motivation behind Head Movement, the mechanism and configuration involved in genitive case assignment and the way definiteness spreads from the genitive DP to the whole construct.

The different proposals differ in the way they motivate N-to-D movement in Construct States, and this movement is usually taken to be linked to definiteness spread. For Ritter (1991) and Borer (1999), N moves in order to assign a +/-def value to D, which they take to be underspecified for definiteness. Ritter argues that N inherits the definiteness value of the genitive DP, and by moving to D, assigns the same value to D and consequently to the whole Construct State. Borer argues along similar lines, but she assumes that definiteness is base generated on N, and when this N moves to D, D gets the same definiteness value. In the majority of the Construct State literature, D is commonly considered to be responsible for the case on the genitive phrase. Some attempt to be more specific in defining the process of case assignment and claim that the case assigner is an element or a feature in D. For instance, In Siloni (1991, 1996), it is Agr in D which assigns case, and in Ritter (1987), Poss, a morpheme in D, is the case assigner.

Siloni (2001, 2003) proposes a different approach to genitive case in Construct States. She maintains the mainstream assumption that Head Movement of N-to-D takes place as a part of the syntactic derivation, but she proposes that genitive case checking takes place at PF, not syntax. She argues that the Construct State DP is a prosodic word, drawing support for this idea from the fact that the head of the Construct State shows some phonological alteration (see §4.2). She takes the phonological properties of the head of the Construct State to suggest that the

head is actually a function word at PF, which would be a reduced form. She claims that under this proposal, it would be possible to explain why the definite article, if present, cannot attach to the head; instead the article cliticises onto the non-head member of the Construct State. Under this analysis, Siloni claims, it is not possible for adjectives to intervene between the head and the non-head of Construct State because the Construct State is a prosodic word that cannot be interrupted by any other word.

Prosodic case checking, however, does not have a clear advantage. It is rather theoretically problematic, as the structure sent to the interfaces would have unchecked case features. This is particularly problematic for the LF interface, since case features have no semantic interpretations. According to the theoretical principles outlined in chapter 1, such a derivation would crash. In order to resolve this issue, Siloni claims that LP and PF are transparent to each other, which is contrary to current assumptions. According to her proposal, once the case feature is checked at PF, the uninterpretable case feature at LF would be checked as well. This is a potentially problematic proposal. It entails that PF and LF are sensitive to each other's structures and representations, making the whole process of spelling out relevant structures to two interface levels rather redundant. If both interface levels can "see" through each other, they should be able to deal with each others' constraints and formulae, making them less distinct than they are assumed to be. Since both levels would be transparent to each other and would be able to read and impose changes on each other, can they still be defined as separate levels? Moreover, if PF operations can "amend" LF representations, how can PF really be distinguished from syntax, if both can have effects on LF? This relationship between interfaces might be expected to be reciprocal, i.e., FP could change LF as much as LF would be able to affect FP. Can an LF operation have an effect on the PF representation? If the answer to this question is yes, this process would have to be motivated and shown to be advantageous. If the answer is no, making the relationship between interfaces one-way only, that would also have to be explained, and maybe the proposal for making the interfaces transparent to each other would have to be modified.

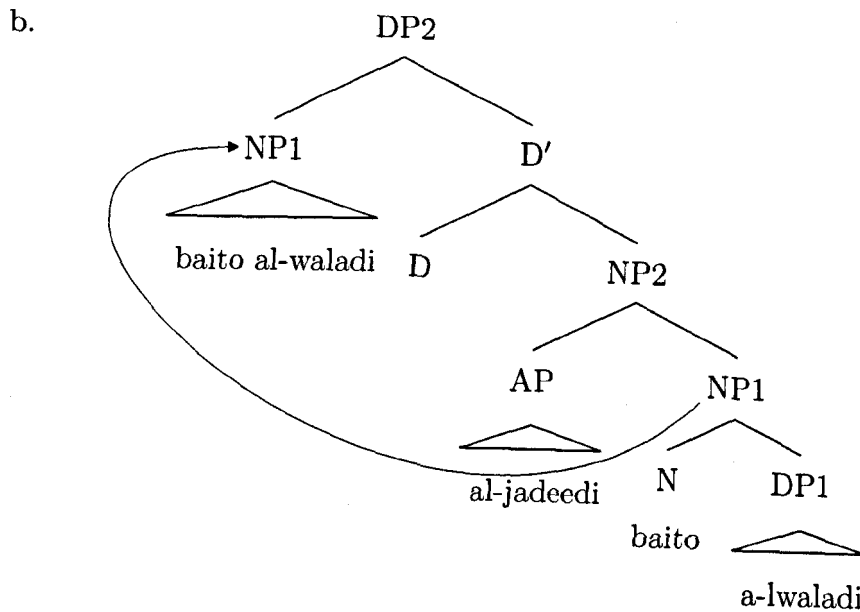
The common feature in the analyses summarised so far is head-to-head movement. However, in response to the receipt attempts to reformulate Head Movement (see chapter 3), there has been one proposal to present a completely different analysis of Construct States, one which does not involve Head Movement.

Shlonsky (2004) attempts to offer a “minimalist” analysis of Construct State DPs, one that does not use head-to-head movement. His account uses Phrasal Movement in order to explain the word order and the other properties of Construct States, and he introduces some new assumptions and principles in order to make this proposal work.

Shlonsky initially argues that the order of adjectives and modifiers in Hebrew DPs can best be accounted for using Phrasal Movement of NP to spec/D. He then extends this analysis to Construct States on the grounds that it is more economical to allow only Phrasal Movement in Semitic DPs. He assumes that the head of the Construct State is merged as the head of NP, with the genitive phrase as its complement rather than as its specifier. He proposes that N assigns genitive case to its complement and freezes it. The whole NP then moves to spec/D. Thus, according to his account, the movement which takes place in Construct States is a matter of “huge pied piping”, moving N together with its frozen complement. He also assumes a type of specifier-head configuration in which only either D or spec/D can be lexically filled, explaining the absence of articles on the head of Construct State DPs.

A modified CS like (37a) would be analysed as (37b).

- (37) a. baitu al-waladi al-jadeedi (MSA)
 house(m-s-nom) the boy(m-s-gen) the new(m-s-gen)
 “The boy’s new house”



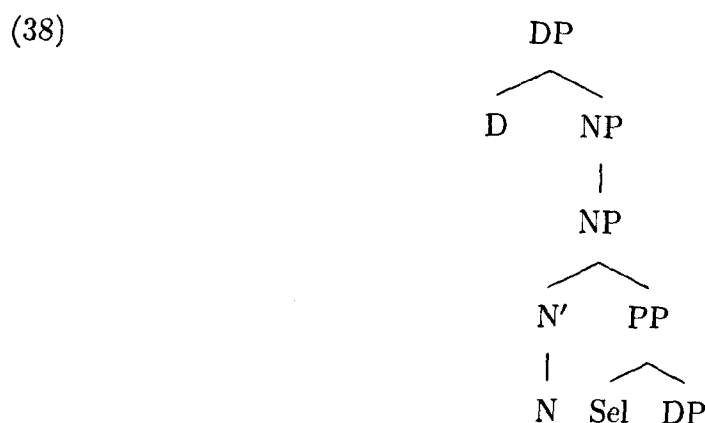
Under this analysis, the definiteness of NP1 as well as that of DP2 is the result of the percolation of the definite feature of DP1, first to NP1 and, after NP1's movement, to DP2.

Shlonsky's analysis shows departure from some of the current main theoretical assumptions. For instance, the assigner of genitive case is a lexical category N, not a functional category as is usually assumed. Moreover, the nature of the freezing effect of genitive case assignment is not clear. Is it specific to *genitive* case, as opposed to other cases? Is this freezing related to Spell Out in the sense that if a complement is frozen it is sent to the interface levels and hence its internal structure is "deactivated"?

I have shown in this section that standard Head Movement is a common feature in the majority of the accounts of the Semitic Construct State. The different proposals diverge in some details, but they all essentially propose that the head of the construct N moves and adjoins to D, and each proposal provides slightly different explanations for the properties of these structures. In the next section, I will review some approaches to Free States and show how these approaches deal with the difference in behaviour between the two Semitic genitive structures.

4.5 Previous Analyses of Free States

The Free State Genitive is often contrasted with the Construct State, but it is not as widely analysed. It is sometimes assumed that these structures are equivalent in meaning to those in Construct State while being structurally more similar to Simple DPs. Ritter (1987), for example, assumes that the genitive phrase in Free States is actually an adjunct and that it receives a default possessor interpretation. She gives the phrase marker in (39) for the skeletal structure of these DPs, *Shel* being the Hebrew preposition used before the genitive phrase (Ritter 1987: 529). Crucially, in that analysis the merge position of the genitive phrase in Free States is different from that in the Construct State.

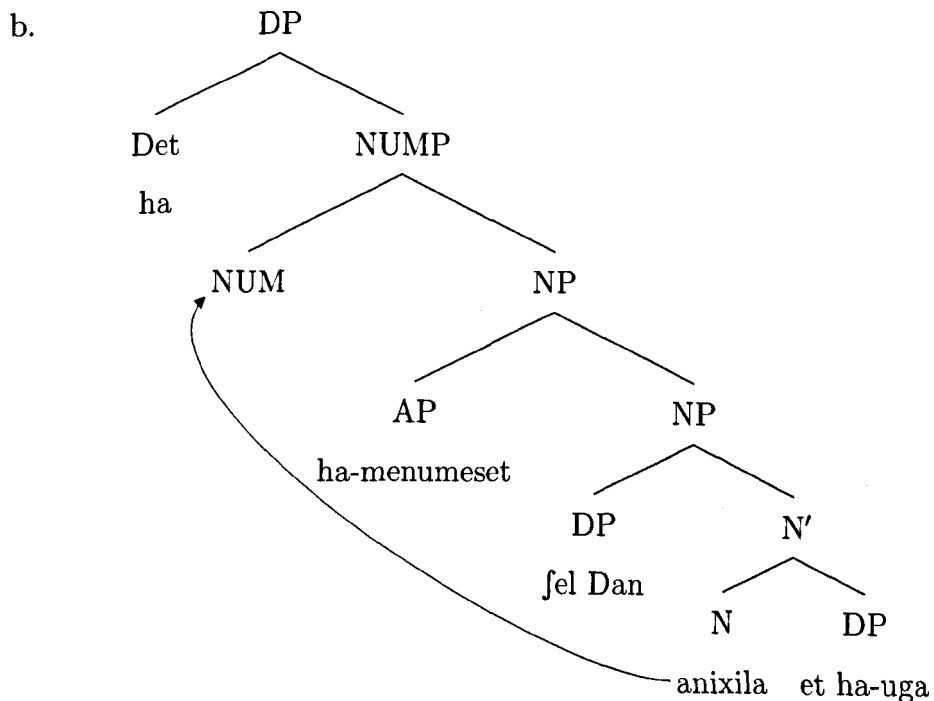


Ritter (1991), however, proposes an analysis of Free State Genitives making them structurally more similar to Construct States and deriving the differences between the two structures by postulating that some movement operations take place in one case but not the other. The merge position of the genitive phrase in both structures is the same.

Ritter (1991) proposes the same functional projections for both Construct States and Free States: D and Num. In her system, the difference between the two genitive constructions is in how far N rises and whether or not the genitive DP moves out of its Merge position. According to Ritter, N moves to Num and then to D in Construct States, but in Free States N moves only as far as Num. She argues that this explains the impossibility of having the definite article on the head of Construct States but not the heads of Free States; she claims that that N cannot move to D unless D is

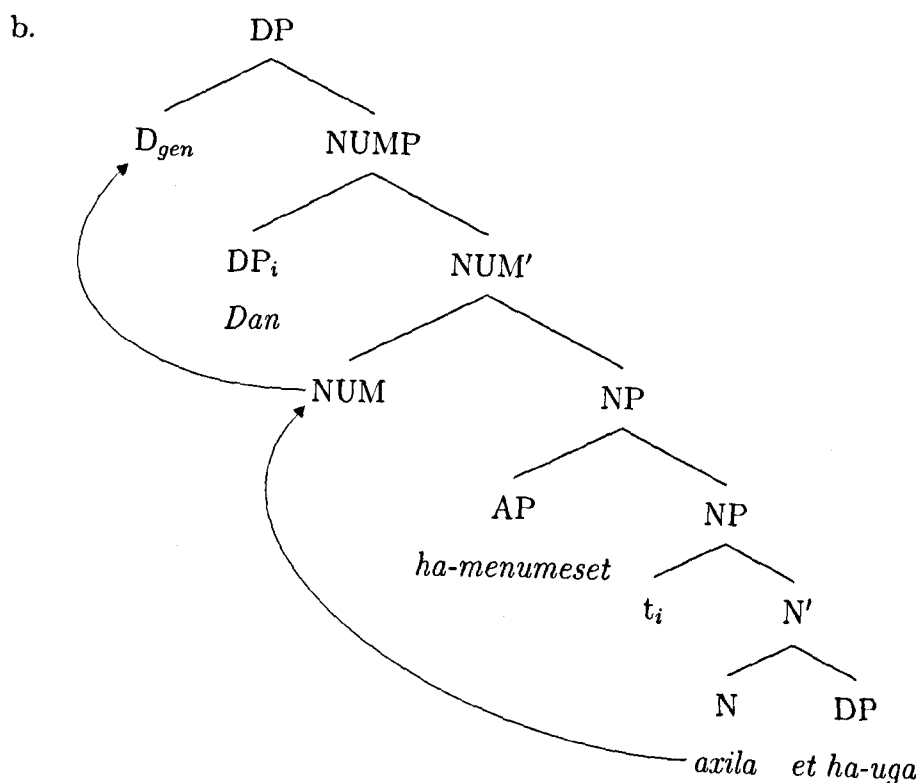
not lexically filled. Moreover, she proposes that D assigns genitive case in Construct States, causing the genitive phrase to move to spec/Num to be close to the case assigner. On the other hand, the preposition assigns the genitive case to the genitive phrase in Free States, and in this case this phrase does not move to spec/Num. She assumes that adjectives are left-adjoined to NP, and since the genitive phrase does not move, the adjective modifying the head appears to the left of the genitive phrase. She gives the derivation in (39b) for the Free State Genitive in (39a) (Ritter 1991: 46).

- (39) a. ha-axila ha-menumaset fel Dan et ha-uga (MH)
 the-eating the-polite of Dan ACC the-cake
 “Dan’s polite eating of the cake”



Contrast that to her later analysis of Construct States quoted above as (36), and repeated here as (40) (Ritter 1991: 45).

- (40) a. axilat Dan ha-menumaset et ha-uga (MH)
 eating Dan the polite of the cake
 “Dan’s polite eating of the cake”



Ritter's (1991) analysis of Free States entails that they can explain the same range of thematic relations as Construct States. As pointed out in §4.3, this is not always the case, especially in Modern Standard Arabic. Any account of these two genitive structures should be able to explain that. Moreover, Ritter's analysis is based on a case assignment system, where the DP itself needs to be assigned case; she claims that the preposition is inserted for case purposes, an idea Fassi-Fehri (1993a) also suggests. However, in a feature matching system, where functional heads would need to have their case feature checked against a matching one on a DP, such an approach would not be feasible. In a case checking framework where the same D is projected in both Construct States and Free States, D would need to have its genitive case feature checked in both cases. However, D would not be able to check its case feature in Free States since the preposition would already be in an Agree relation with the genitive DP. If the case feature on D cannot be checked, the prediction would be that the derivation would crash because the D in Free States would be spelled out with its case feature unchecked, thus wrongly ruling out Free State Genitives all together. Moreover, allowing a preposition to be inserted just for case reasons might over-generate. Obvious issues to consider relate to what regulates when the preposition

can or cannot be inserted. Would *any* structure involving a genitive DP without a proper licenser be saved by inserting a dummy preposition? An affirmative answer to this question is undesirable since it will filter in some ungrammatical structures, and a negative answer would necessitate formulating clear guidelines.

Although there have not been many attempts to analyse Free State Genitives in detail, the relationship between this structure and the Construct State has been an important part of the research related to the Semitic DP. Whether one sees this structure as having the basic structure of the Semitic DP or whether it is assumed to involve more complex structures, Free States remain an important structure to take account of when developing a comprehensive account of the Semitic nominal domain. In the remainder of this chapter, I will develop a minimalist analysis for the different types of DP in Arabic: Simple DPs, Construct States and Free States. I will explain the behaviour each one of these types exhibits and motivate the differences between them.

4.6 A Minimalist Account of the Arabic DP

In this section, I will develop an analysis for the different types of the Arabic DP, with specific focus on Nominal Construct States, based on the head-to-spec movement proposal I laid out in §3.8. I will argue that the derivation of all Arabic DPs involves some instances of head-to-spec movement, followed by a morphological merger operation. I propose that there are three different Ds in Arabic and that each one of them is projected in certain structures and has a slightly different set of features. Some of the properties of the Construct States, as opposed to Simple DPs for example, can be attributed to the combination of Head Movement and the D projected in the structure. I will first introduce the syntactic part of the derivation and then justify proposing that M-merger applies to the output of head-to-spec movement in Arabic DPs.

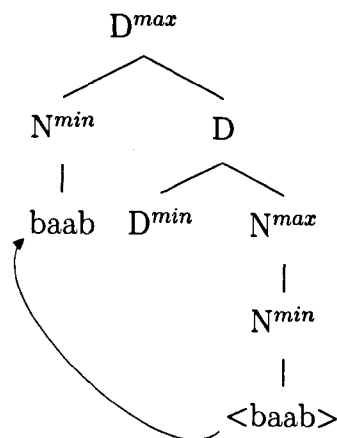
4.6.1 Syntactic Head-to-Spec Movement

The majority of the work done on the Semitic DP in general and the Arabic DP in particular agrees on one basic part of the derivation of these DPs, i.e., Head Movement. In my analysis of the Arabic DP, I will converge with these analyses in that I propose that Head Movement takes place during the course of the derivation of the various types of the Arabic DP, but I diverge in the way I define and motivate Head Movement. I adopt the approach where heads target the root of the structure, rather than adjoining to higher heads. I will not argue for this approach here, and I refer the reader to the discussion in §3.8. What I will argue for is that Head Movement is required as a part of the derivation of the Arabic DP and that the approach I am adopting can successfully explain the data analysed in this thesis. I will first lay out how my approach to Head Movement explains the data and then investigate whether this movement is an essential part of the derivation. I will then introduce the main aspects of my proposal, mainly the different types of D in Arabic and show how their features explain the properties of the Arabic DP.

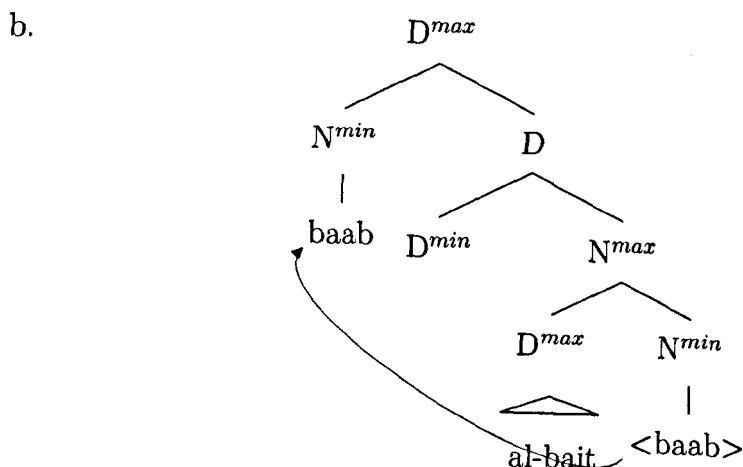
The head-to-spec approach to Head Movement in the Arabic DP entails that N moves and targets the root, landing on the edge of the structure in what could be considered as the specifier of D. According to this analysis, the derivation of a simple DP as in (41a) would be (41b) and a Nominal Construct State such as (42a) would be analysed as (42b).

- (41) a. baab (MA)
 door(m-s)
 “a door”

b.



- (42) a. baab al-bait (MA)
 door(m-s) the house(m-s)
 “the door of the house”



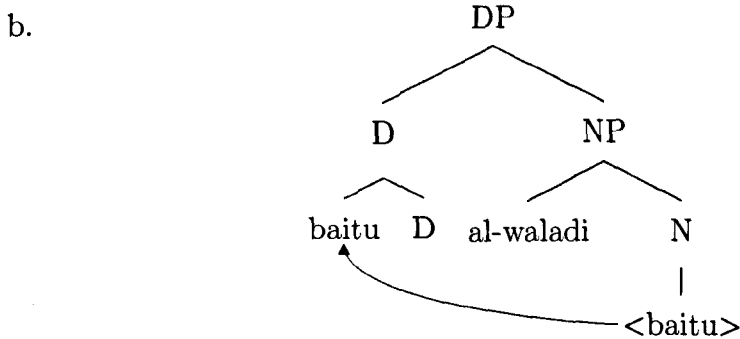
Assuming in line with previous analyses in the literature that D drives the movement of N, the movement operation in (41b) and (42b) is the result of the following derivational steps. When D is merged, it causes N^{min} to move (as a result of EPP and c-selectional features on D). Unlike what standard Head Movement would predict, N^{min} is not adjoined to D; N^{min} rather is merged at the root, landing on the edge of the structure (specifier of D) and causing D to project once more. In (42b) I assume that the genitive phrase is a c-selected complement of the Construct State head. The fact that it is represented to the left of N^{min} should not be taken to suggest that it is a specifier. As explained in §1.3, Merge produces unordered sets. I chose to represent the genitive phrase to left of N^{min} in order to make my structures visually more similar to earlier analyses of this structure and to make the effect of Head Movement clearer. In §4.6.2 I will consider the alternative order and show that Head Movement is still needed even if the genitive phrase is merged to the right of the head.

This analysis does derive the basic word order of Construct States; the head precedes the genitive phrase. However, when it comes to simple DPs, it places N higher than D, which would predict that articles follow the noun. This is not problematic for the indefinite article in Modern Standard Arabic, which is a suffix, but this order is the opposite of the order seen in definite DPs such as (43), where the definite article is a prefix.

- (43) al-baab (MA)
 the door(m-s)
 “the door”

However, this issue of the directionality of affixation is not specific to head-to-spec movement approaches. If the landing site of standard Head Movement is assumed to be the same in all cases of N-to-D in Arabic, traditional approaches may adjoin N to the left of D, as per Kayne’s (1994) Lexical Correspondence Axiom, also apparently predicting that the article would follow the noun, as shown in (33) repeated below as (44).

- (44) a. baitu al-waladi (MSA)
 house(m-s-nom) the boy(m-s-gen)
 “the boy’s house”

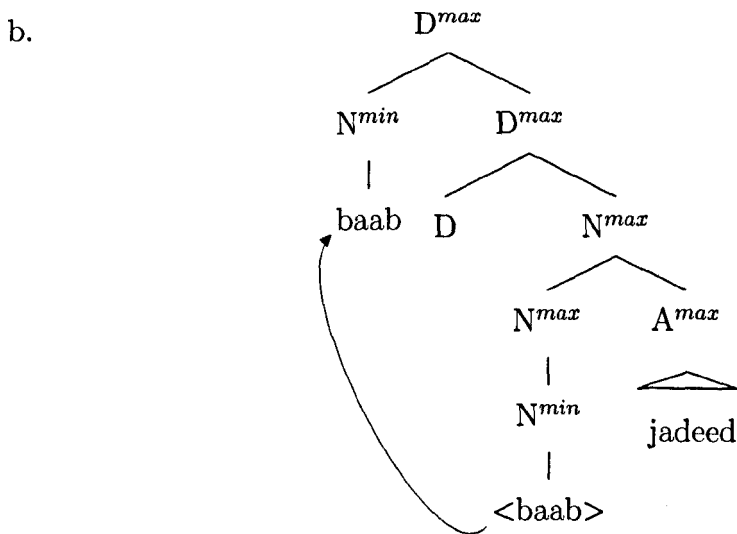


I will propose a solution to this issue in §4.6.2 in the course of my discussion of the morphological part of the derivation.

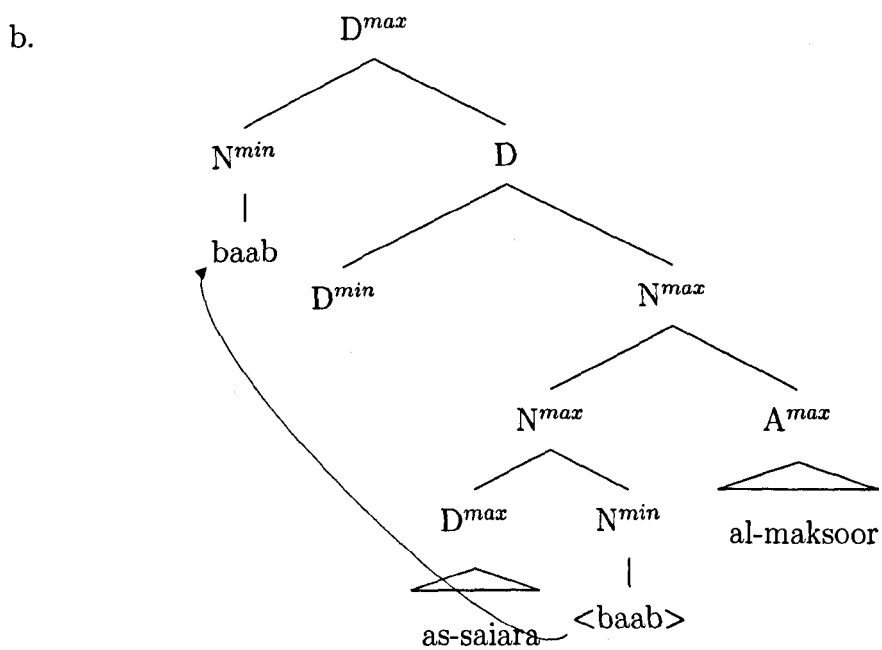
This analysis can also explain the position of adjectives in both Simple DPs and Construct States. If adjectives are taken to be right adjoined to maximal N projections, as argued in §2.4, a modified Simple DP as in (45a) and a modified Construct State as such as (46a) would be derived as shown in (45b) and (46b), respectively.⁶

- (45) a. baab jadeed (MA)
 door(m-s) new(m-s)
 “a new door”

⁶In the tree diagrams in this chapter, I represent adjectives simply as projections of A. In §2.4 I argued that adjectives are dominated by anaphoric D, but I ignore this aspect of the analysis here because it is more reader-friendly to represent adjectives as projections of A, especially that the anaphoric D is not relevant to the present discussion.

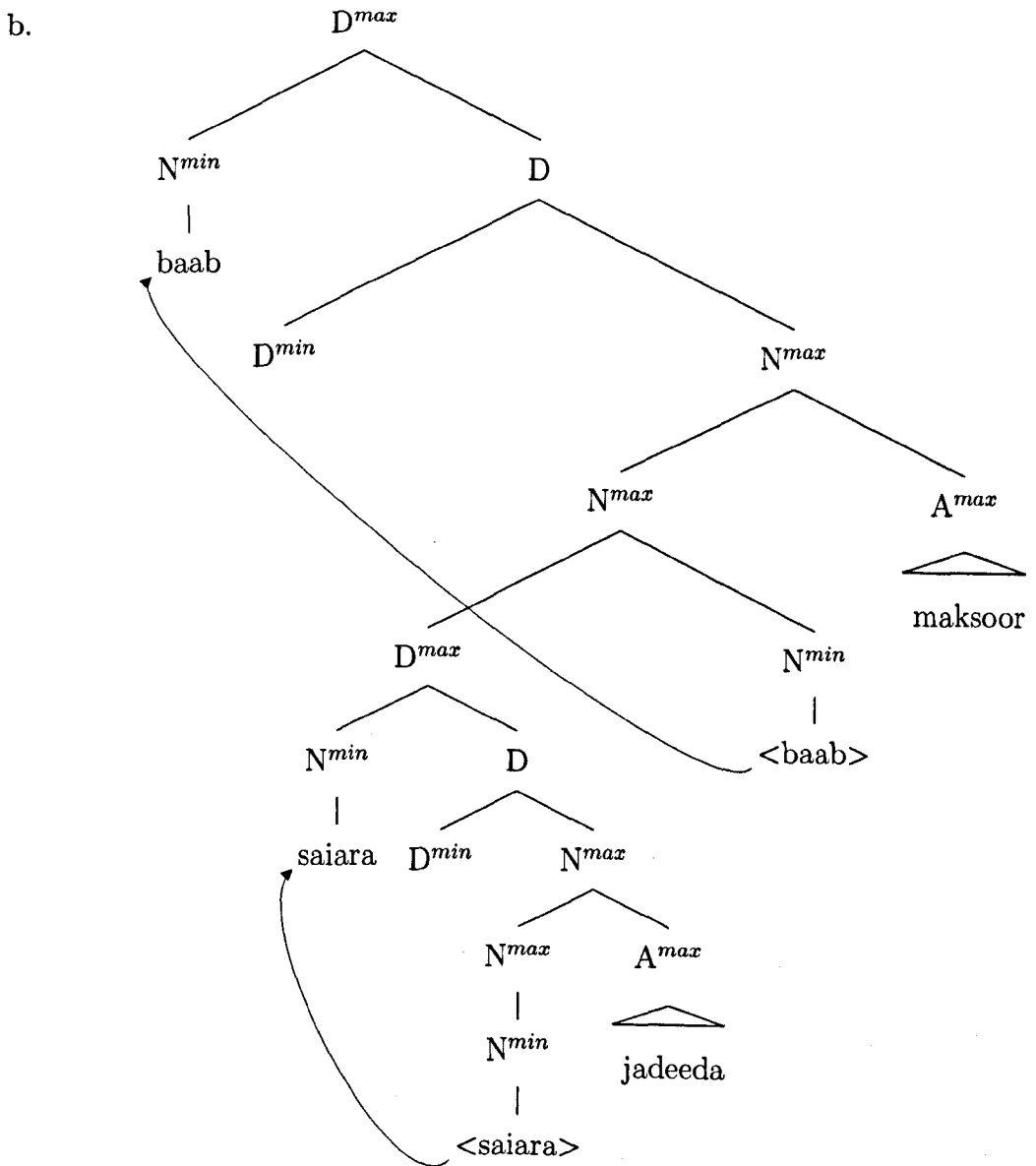


- (46) a. baab as-saiara al-maksoor (MA)
 door(m-s) the car(f-s) the broken(m-s)
 “the broken car door”



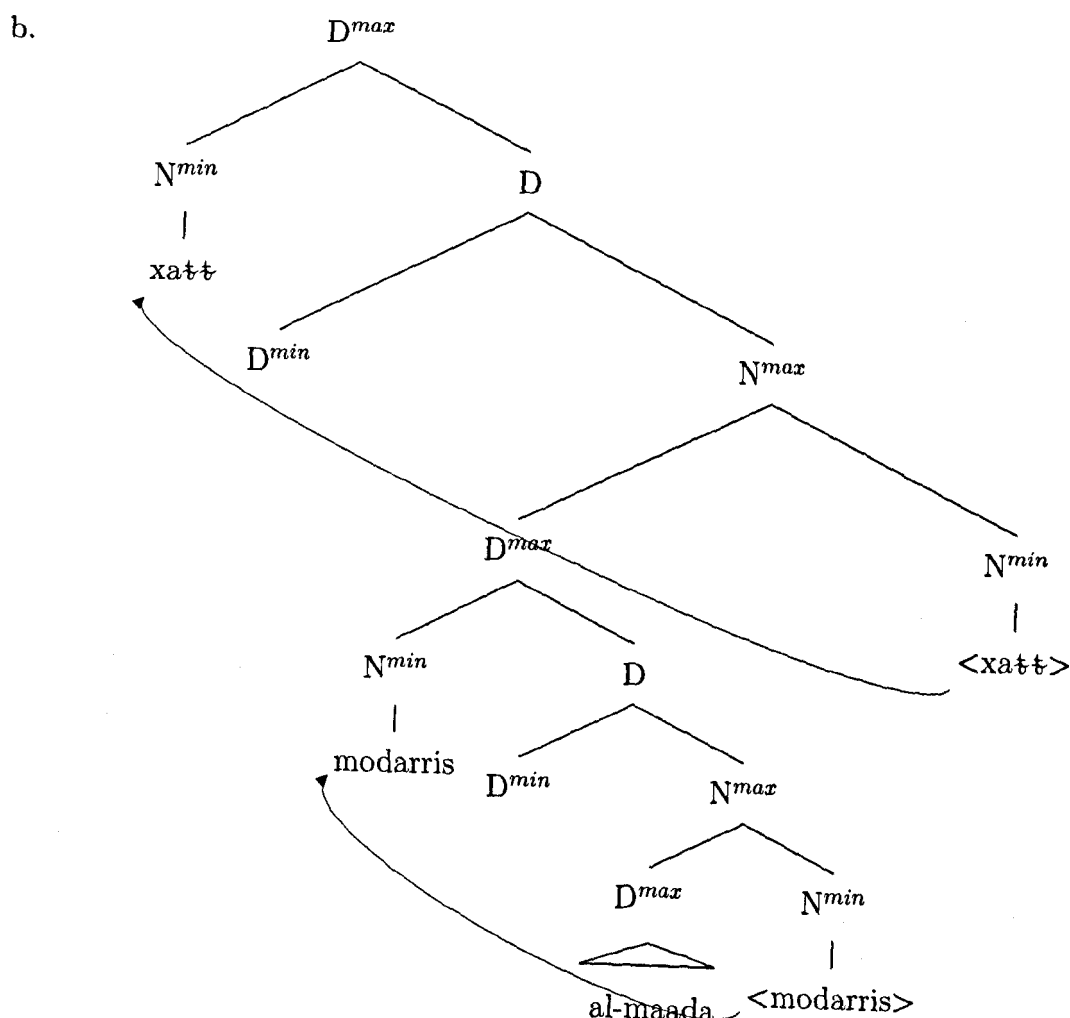
A Construct State with two adjectives modifying both the head and the genitive phrase would be analysed as shown in (47b), where the adjective modifying the genitive phrase occurs to the left of the one modifying the head.

- (47) a. baab saiara jadeeda maksoor (MA)
 door(m-s) car(f-s) new(f-s) broken(m-s)
 “the broken door of the new car”



This head-to-spec analysis also straightforwardly explains the word order in embedded Construct States, as shown in (48).

- (48) a. xaṭṭ modarris al-maada (MA)
 handwriting(m-s) teacher(m-s) the course(f-s)
 "the handwriting of the teacher of the course"



So far, the difference between the analysis developed here and the analyses in the literature is the landing site of Head Movement. In the rest of this section I will motivate this movement operation in the context of a full proposal explaining the structure and properties of the different types of the Arabic DP.

As noted in §2.10, it has been generally assumed in the generative literature that N always moves to D in the Semitic languages (Fassi-Fehri, 1993a; Benmamoun, 2003; Mohammad, 1999, and others). This applies to simple definite and indefinite DPs, Construct States and Free Genitives. Nevertheless, the motivation for this movement is not usually assumed to be the same in all types of DP. Head Movement in Simple DPs and Free State Genitives is mainly attributed to the affixal requirements of D; the definite article in Hebrew and all the varieties of Arabic is affixal (a prefix), and the indefinite article, which is used only in Modern Standard Arabic, is a suffix

(Fassi-Fehri, 1993a, and others). Head Movement in Construct States, however, is usually motivated for different reasons. Some use N-to-D movement to account for the absence of the definite article on the head noun in the sense that the moved noun occupies the position which would otherwise be occupied by an article (Ritter, 1987, for example). Some others, however, link the movement to definiteness spread; N would transmit the definiteness of the genitive phrase to D by agreeing with the genitive phrase first and then moving to D (Borer, 1999, for example).

I propose here that the motivation behind the movement of N is the same in all Arabic DPs. According to the proposal laid out in §3.8, head-to-spec movement is the result of the attracting head having a c-selectional feature and an EPP feature. Thus, I propose that the Arabic D has both a c-selectional feature for an N and an EPP feature which I argue can be checked by moving N and remerging it at the root. The c-selectional feature selects the category which has to move in order to check the EPP feature on D.

But if N moves in all Arabic DPs, what distinguishes Construct State DPs from other DPs and how can the special properties of the former be accounted for? I propose here that the D projected in Construct States is different from the Ds projected in Simple DPs and in Free Genitives. While the Ds projected in the latter two have specified definiteness values (either [+Def] or [-Def]), the D projected in Construct States has an unvalued definiteness feature, which I am going to refer to as [α Def]. This feature is valued by an Agree relation with the D in the genitive phrase, thus leading the whole Construct State to have the same definiteness value as the genitive phrase. Moreover, this D has a genitive case feature to check, and this feature is checked by being in an Agree relation with the genitive case feature on the genitive phrase.⁷ Thus, the D projected in Construct States is a different lexical item from the Ds projected in simple DPs and Free Genitives since they possess different sets of features. I propose here that Arabic has three different Ds.⁸

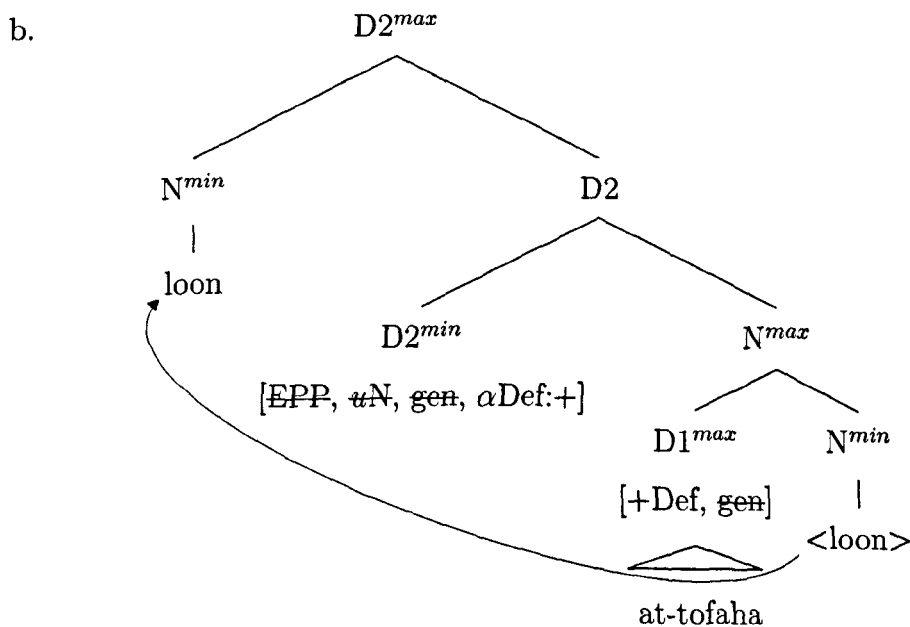
⁷I assume here a case system where both the DP and the case-checking head, in this case a D, need to have their case features checked by Agree. For applications of this case system, see Alexiadou and Anagnostopoulou (2001) and Legate and Smallwood (2001) and the references therein.

⁸In order to simplify the presentation in (49), I ignored the structural case feature usually assumed

- (49)
1. a null D with the set of features [EPP, uN , gen, $\alpha\text{Def}:$]. This is the D projected in Construct States.
 2. an overt D with the set of features [EPP, uN , +Def]. This D is projected in definite simple DPs and Free Genitives and is the prefix *al-* or one of its variants in Arabic.
 3. a D with the set of features [EPP, uN , -Def]. This D is projected in indefinite simple DPs and Free Genitives. This D is null in spoken Arabic but is overt in Modern Standard Arabic (*-n*, a suffix)

Thus, the Construct State in (50a) has the derivation in (50b).

- (50) a. loon at-tofaḥa (MA)
 colour(m-s) the apple(f-s)
 “the colour of the apple”



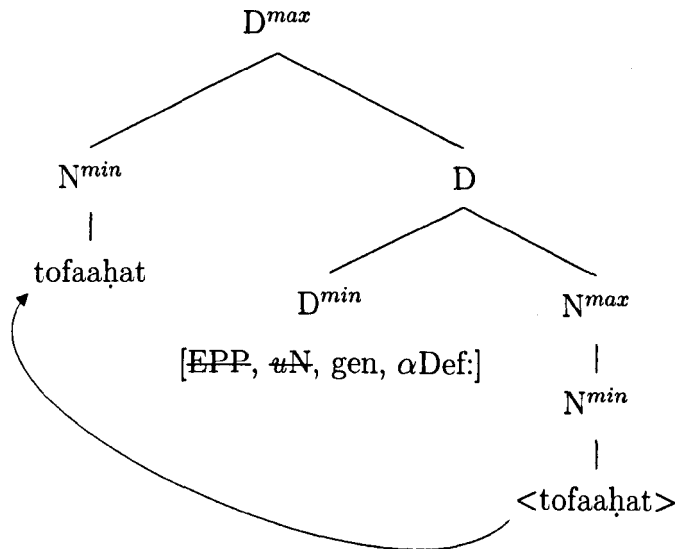
At the point of Merge, D2 checks its c-selectional feature for an N. The definiteness feature on D2 is valued via Agree with the genitive phrase $D1^{max}$ (*at-tofaḥa*) under to be on all DPs, the one responsible for the case checked on the head of the DP itself. However, I still assume that this case is a part of the representation of all Ds, but it is not relevant for the present discussion. The feature structure of Construct State D includes a genitive feature, but this feature should be distinguished from the feature responsible for the case on the head of the Construct State itself. In other words, Construct State D has the ability to check the genitive case feature on the genitive phrase, but that does not mean that it has that value itself.

a c-command relation. Moreover, $D1^{min}$ and $D2^{min}$ check their case features, $D2^{min}$ being the functional case checking head. N^{min} then moves to the root in order to check $D2^{min}$'s EPP feature, and as a result D2 projects once more. Since all checkable features are checked and unvalued ones are valued, the derivation of the Construct State DP terminates and converges.

However, if the Construct State D (49-1) were projected in simple DPs, the derivation would crash because there would be no genitive phrase with which it could Agree, and D would be spelled out with an unvalued definiteness feature. Moreover, D's genitive case will not be checked since there is no genitive phrase with which it can have a case-checking relation.

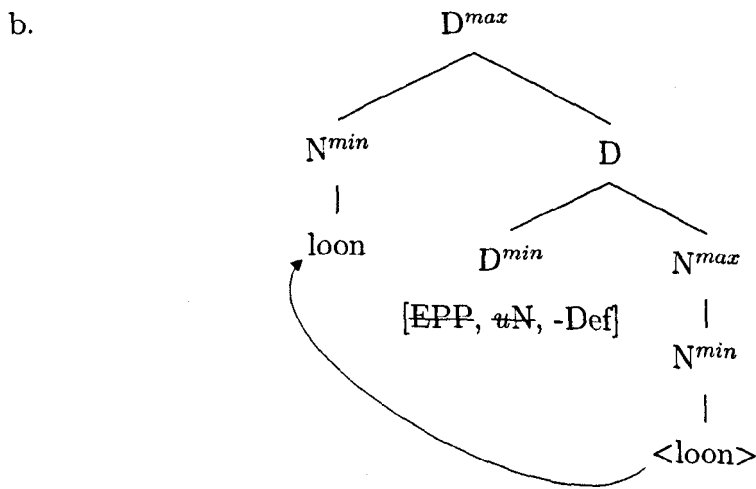
- (51) a. *tofaaḥat (MA)
 apple(f-s)
 "apple"

b. *

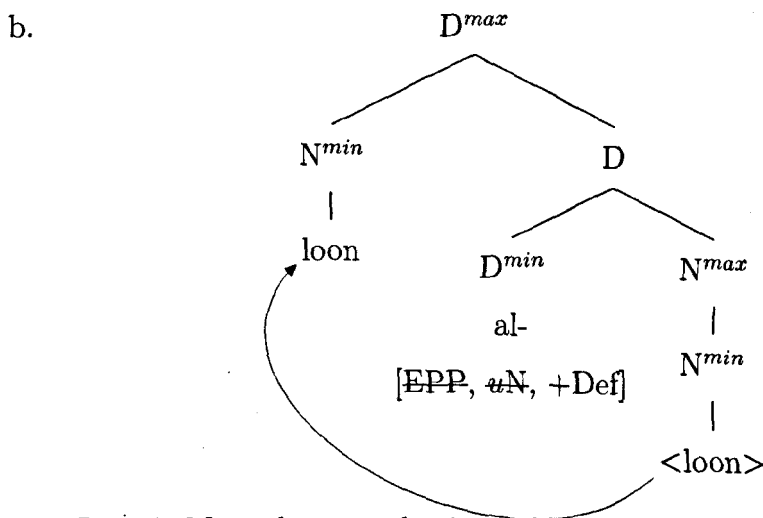


Since the Ds with valued definiteness features do not check genitive case, the derivation of a simple indefinite DP such as (52a) would be (52a), and that of a simple definite DP such as (53a) would be (53b).

- (52) a. loon (MA)
 colour(m-s)
 "a colour"



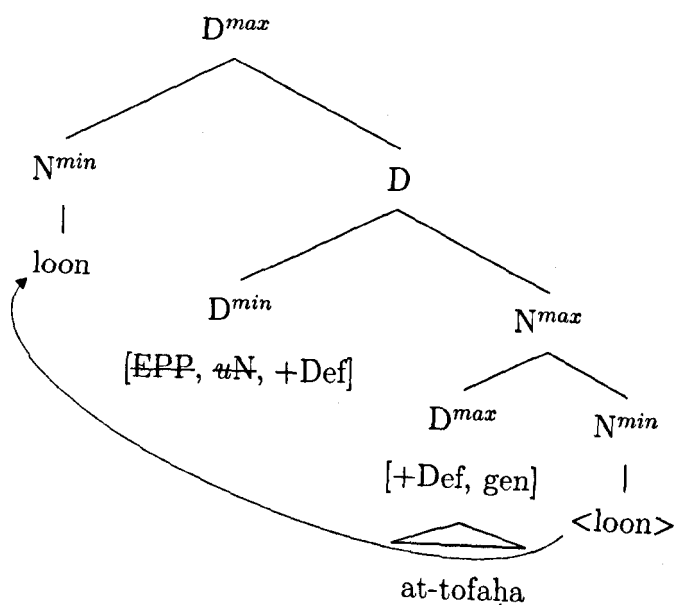
- (53) a. al-loon (MA)
the colour(m-s)
“the colour”



At the point D^{min} is Merged, its c-selectional feature is checked, and the movement of N checks D's EPP feature.

Ds with a specific definiteness value ((49-2) or (49-3)) cannot be projected as the heads of Construct State DPs since they do not check genitive case. If one of them were projected, the genitive case on the genitive phrase in the Construct State would not be checked and the derivation would crash.

(54) *



Under this approach, the fact that the head of the Construct State cannot have articles attached falls out from the fact that the Construct State D is null and the other types of D cannot be used in this structure. Moreover, this three-D system can also explain the impossibility of using a demonstrative before the head of a Construct State. In §2.8, I argued that pronominal demonstratives occur as Dem heads above D. I also showed that demonstratives only occur with definite DPs. Thus, it could be argued that pronominal demonstratives c-select only definite D (49-2). Therefore, pronominal demonstratives cannot be used with Construct States because the Dem head cannot be projected above the Construct State D. I mentioned in §4.2 that I believed that Mohammad's (1999) proposal that the reason demonstratives are not allowed at the beginning of Construct States is linked to the reason definite articles are not is essentially on the right track. In other words, because definite D cannot be used in Construct States as shown in (54) above, Dem cannot be used either as the use of the latter depends on the use of the former.

I have mentioned briefly that I assume that the definite and indefinite Ds ((49-2) and (49-3)) are the ones which are projected in Free State Genitives. This would explain the fact that definite and indefinite determiner are used on the heads of Free States and that genitive case is checked by a preposition, therefore accounting for two of the main differences between these genitive constructions and Construct States. Definite and indefinite Ds do not have a genitive case feature and the genitive case

on the genitive phrase is checked by a preposition. Thus, there is no feature in need of checking and the derivation converges.

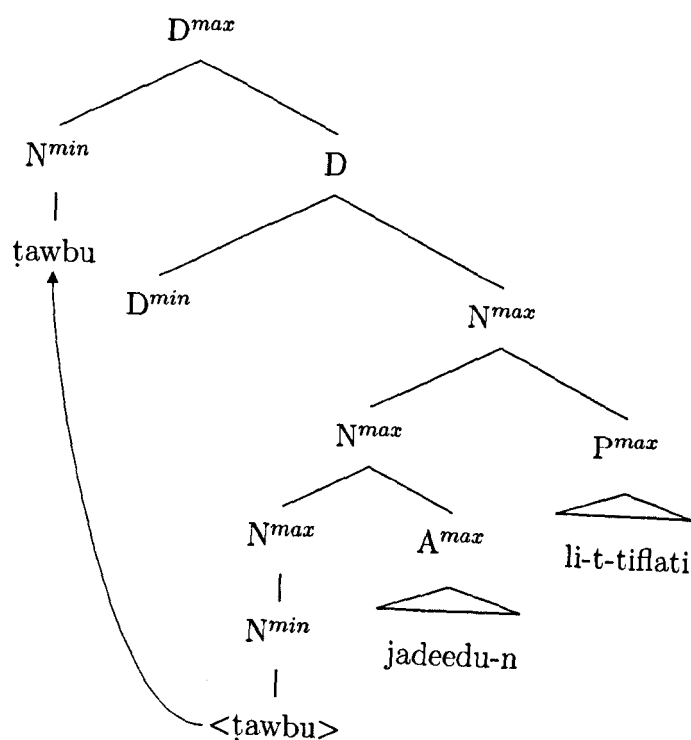
Other important properties of Free State Genitives include the position of head modifiers and the range of thematic relations this structure conveys. We have seen in §4.3 that modifiers of the head of the Free genitive immediately follow the head. Moreover, in Modern Standard Arabic, Free States may only be used to express pure possession; in Makkan Arabic, it is possible to use Free States to convey property-object or action-agent, though not action-theme. Another interesting fact about Free State Genitives in Modern Standard Arabic is the fact that these structures may only be used if the head is marked indefinite, not definite. I believe that all these properties will help in establishing the nature of the prepositional phrase in Free State Genitives, and once that is established, it will be clearer what the structure of these constructions is like.

The prepositional phrase in the Free States occurs to the right of the head of the structure and any adjectives modifying it, as shown in (55).

- (55) ṭawbu-n jadeedu-n li-t-tiflati (MSA)
 dress(m-s-nom) ind new(m-s-nom) ind prep the child(f-s-gen)
 “a new dress for the child”

In §4.5, I argued against Ritter's (1991) analysis of Free State Genitives as having the same basic structure as Construct States, making the prepositional phrase the complement of N. I claim that this prepositional phrase is a right-adjoined modifier, which is the approach Ritter (1987) argues for. Thus, the Free State Genitive in (55) can be analysed as (56).

(56)



An argument in favor of considering the prepositional phrase an adjunct rather than an argument is the fact that the use of this prepositional phrase is restricted to some thematic relations; if this prepositional phrase was generated as an argument of N , it would be expected that it would convey the same range of thematic relations conveyed by the genitive phrase in the Construct States, which is an argument of N . I take the available range of relationships between the head of the Free State and the DP in the prepositional adjunct to be dependent on the properties of the preposition used. In Modern Standard Arabic, the preposition *li-* "for" can only express possession, whereas the Makkan Arabic *ḥag* can convey other relations as well.

Further support for the thesis that the prepositional phrase in Free States is an adjunct comes from the fact that the prepositions used in this structure show some behavior which can be explained if one assumes that these prepositions (at least partially) agree with the head of the Free State. I explained in §4.3 that the use of Free States in Modern Standard Arabic is limited to indefinite DPs. If this prepositional phrase is taken to have an indefinite feature, then as a modifier it would only be able to modify indefinite nouns. In Makkan Arabic, the preposition used in this structure, *ḥag*, actually agrees with the head noun in number and gender (see

(25)). This fact adds support to the argument that the prepositional phrase is an adjunct. The restriction on the definiteness marked on the head seen in Modern Standard Arabic is not found in Makkan Arabic, as Free States can be used with definite or indefinite heads. I take this to suggest that the definiteness feature on *ḥag* does not have a predefined value; the prepositional phrase can modify both definite and indefinite nouns and the relevant value is assigned to the prepositional phrase, although definiteness is not overtly marked.

The idea of having a definiteness feature on a preposition may seem ad hoc, especially that this feature does not seem to be the same as that of its complement. For example, I claim that *li-* “for” in (21b), repeated here as (57), has an indefinite feature whereas its complement is definite.

- (57) *kitaabu-n* *li-t-ṭaalibi* (MSA)
 book(m-s-nom) ind prep the student(m-s-gen)
 “the student’s book”

I claim that this definiteness feature is a specific property of the prepositions which can be used in Free States: *li-* in Modern Standard Arabic and *ḥag* in Makkan Arabic. Consider the following data.

- (58) a. *kitaabu-n* *ʿala at-ṭaawilati* (MSA)
 book(m-s-nom) ind on the table(f-s-gen)
 “a book on the the table”
- b. *al-kitaabu* **(alladee) ʿala at-ṭaawilati* (MSA)
 the book(m-s-nom) which on the table(f-s-gen)
 “the book on the table”
- (59) a. *rajolu-n* *jaaʔa* (MSA)
 man(m-s-nom) ind came(3-m-s)
 “a man who came”
- b. *ar-rajolu* **(alladee) jaaʔa* (MSA)
 the man(m-s-nom) who came(3-m-s)
 “the man who came”
- (60) a. *kitaabu-n* *li-l-moʿallimati* (MSA)
 book(m-s-nom) ind prep the teacher(f-s-gen)
 “the teacher’s book”

- b. * al-kitaabu (alladee) li-l-mo^callimati (MSA)
 book(m-s-nom) ind which prep the teacher(f-s-gen)
 “the teacher’s book”

Whereas other Arabic prepositions, such as ^cala “on”, may modify definite nouns when a relative pronoun is used (58b), making them rather similar to relative clauses (59),⁹ the same is not true for the preposition used in Free States, as shown in (60). These prepositions may not modify definite DPs, even if a relative pronoun is used. Thus, the prepositions used in Free States may have specific features making them different from other prepositions, allowing them to modify only indefinite DPs in Modern Standard Arabic and both indefinite and definite DPs in Makkan Arabic without requiring a relative pronoun. I claim that this property is that the Free State preposition has a definiteness feature with a specific value in the former case and with an unspecified, agreeing value in the latter.

Another issue which should be raised is the relative order of this prepositional phrase with respect to the adjectival modifier of the head. If both the adjective and the prepositional phrase are modifiers of the same head, some degree of flexibility in the order may be expected. In other words, the adjective may be expected to be able to follow the prepositional phrase. However, as shown in §4.3, this is not the case. The only possible order is for the prepositional phrase to follow the adjective. I claim that this ordering is obligatory because of a requirement to postpose prepositional phrases in Arabic.¹⁰ Consider the examples in (61).

- (61) a. mohandis ?amreeki †aweel (MA)
 engineer(m-s) American(m-s) tall(m-s)
 “a tall American engineer”
- b. * mohandis min ?amreeka †aweel (MA)
 engineer(m-s) from America tall(m-s)
 “a tall engineer from America”
- c. mohandis †aweel min ?amreeka (MA)
 engineer(m-s) tall(m-s) from America
 “a tall engineer from America”

⁹For discussion of Arabic relative clauses see Shlonsky (1992) and Ouhalla (2004).

¹⁰See Kremers (2003) for a similar proposal.

In (61a) the order of the modifiers is the opposite of those in (61c). This pattern can be accounted for if we assume that the prepositional modifier *min ʔamrika* “from America” has been postposed. When both modifiers are adjectival as in (61a), the nationality adjective *ʔamriki* “American” appears to the left of the physical description adjective *ṭaweel* “tall”. On the other hand, when the modifier denoting the nationality is prepositional *min ʔamrika* “from America” as in (61b) and (61c), the only acceptable order is for the prepositional modifier to be to the right of the physical description adjectival modifier *ṭaweel* “tall”. Given that the order of modifiers in Semitic is a mirror image of English (see Fassi-Fehri, 1993b), and assuming that the Merge position of modifiers in both cases is the same, the word order in (61c) would be the result of postposing the prepositional modifier. Therefore, whatever the original respective order of the adjective and the prepositional modifier in the Free State Genitive, the prepositional modifier will always come to the right of the adjective.

Further support for this proposal comes from the fact that when a prepositional modifier is used instead of an adjective, there is relative freedom of order between the modifier and the prepositional phrase expressing the possession, as shown in (62).

- (62) a. *kitaabu-n li-l-waladi ʕala aṭ-ṭaawilati*
 book(m-s-nom) ind prep the boy(m-s-gen) on the table(f-s-gen)
 (MSA)

“a book which belongs to the boy and is on the table”

- b. *kitaabu-n ʕala aṭ-ṭaawilati li-l-waladi*
 book(m-s-nom) ind on the table(f-s-gen) prep the boy(m-s-gen)
 (MSA)

“a book which is on the table and belongs to the boy”

Examples (62a) and (62b) are equally acceptable. The prepositional phrase including the possessor can come either before or after the other prepositional modifier, suggesting that both prepositional phrases are adjuncts.

In this section I have presented a detailed analysis of Simple Arabic DPs, Nominal Construct States and Free State Genitives. The basic part of the proposal is the

classification of Arabic Ds into three types: definite D, indefinite D and Construct State D. I claimed that all the Ds have a c-selectional N feature and an EPP feature, and the combination of these features results in the movement of N to spec/D. The difference between them is that the definite and indefinite Ds have valued definiteness features, whereas the Construct State has an unvalued definiteness feature. Moreover, the Construct State D has a genitive case feature which needs to be checked in an Agree relation with the genitive phrase. I have shown how this three-way classification system can explain the properties of each one of the DP types. In the next section, I will evaluate whether a morphological operation is necessary for the Arabic DP and conclude that there is evidence that such an operation takes place in all the types of Arabic DP.

4.6.2 Morphological Merger

In the analysis advocated in this chapter, I argued that head-to-spec movement of N to spec/D takes place in the derivation of all types of Arabic DP. As pointed out in §3.8, there have been some proposals claiming that a morphological merger operation (M-merger for short) takes place after the structure has been spelled out. In this section, I will argue that such an operation does take place in Arabic DPs. I will first discuss the motivation for this operation and how it applies in the various types of DPs and then argue that such an operation is not sufficient on its own to account for the properties of the Arabic DP, and that Head Movement is a necessary part of the derivation.

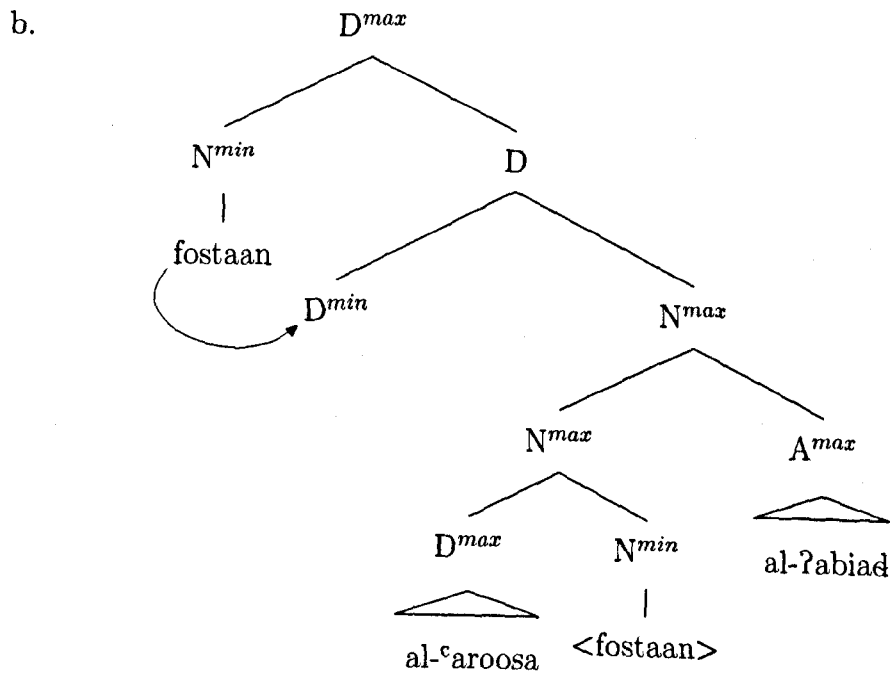
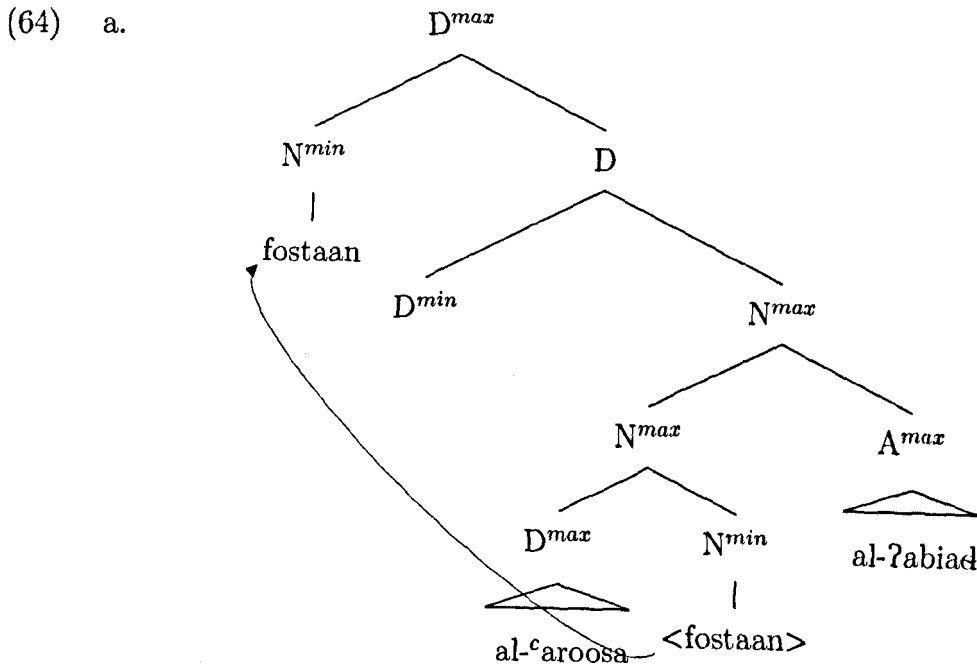
There is evidence that M-merger takes place in Arabic DPs following the movement of N, merging N and D. As noted in §2.3, the definite article in both Modern Standard Arabic and spoken Arabic is a prefix *al-*, and it cliticises onto N (for example *al-kitaab* “the book”). Moreover, the indefinite article in Modern Standard Arabic is a suffix *-n* (for example *kitaaba-n* “a book”). The affixal nature of these determiners suggests that a morphological operation applies, merging D and N. Although there is no overt determiner in Construct States, the phonological properties of the head of these structures suggest that a morphological merger operation takes

place when the Construct State D is projected as well. I explained in §4.2 that heads of Construct States have some properties of bound forms. For example, in Makkan Arabic, feminine nouns ending in *-t* should have the *-t* dropped when nothing is affixed onto the end of the noun as in the indefinite noun *madrasa(*t)* “school” or the definite form *ʔal-madrasa(*t)* “the school”. However, in Construct States the *-t* cannot be dropped, whether the second element of the construct is a bound pronoun as in *madrasa*(t)-i* “my school” or a full DP as in *maradasa*(t) al-ʔaʔfaal* “the children’s school”. I take the fact that in certain cases the head of the Construct State takes a form specific only to this structure to suggest that the form of the noun used as the head of a Construct State, possibly the one which can take a genitive DP argument, is a phonologically dependent form in the sense that it cannot independently form a DP but requires a complement. Consequently I assume that this N is merged with D at the morphological component.

However, given that the definite article is a prefix and the indefinite article is a suffix, the directionality of the merging operation is not clear. In other words, is D merged on the left side or the right side of N? I propose here that the directionality of affixation is sensitive to whether D is a prefix or a suffix; the definite article is attached to the left of N and the indefinite article is attached to the right of N. Since the Construct State D is null, there is no evidence for either option. This problem, nevertheless, is not specific to the head-to-spec approach to Head Movement. As pointed out in §4.6.1 standard Head Movement accounts would assume that the moved head N always adjoins to one side of D, which would also give conflicting results because the directionality of affixation is different for the definite and indefinite articles. The present approach, however, does have an advantage because this issue is dealt with in the domain of morphology which would be likely to be sensitive to such issues.

Under the present proposal, the derivation of the Makkan Arabic Construct State in (63) consists of a syntactic part - where *fostaan* moves and is remerged at the root(64a) and a morphological part - where *fostaan* is moved again and morphologically merged with D (64b).

- (63) fostaan al-^caroosa al-ʔabiad (MA)
 dress(m-s) the bride(f-s) the white(m-s)
 “the bride’s white dress”

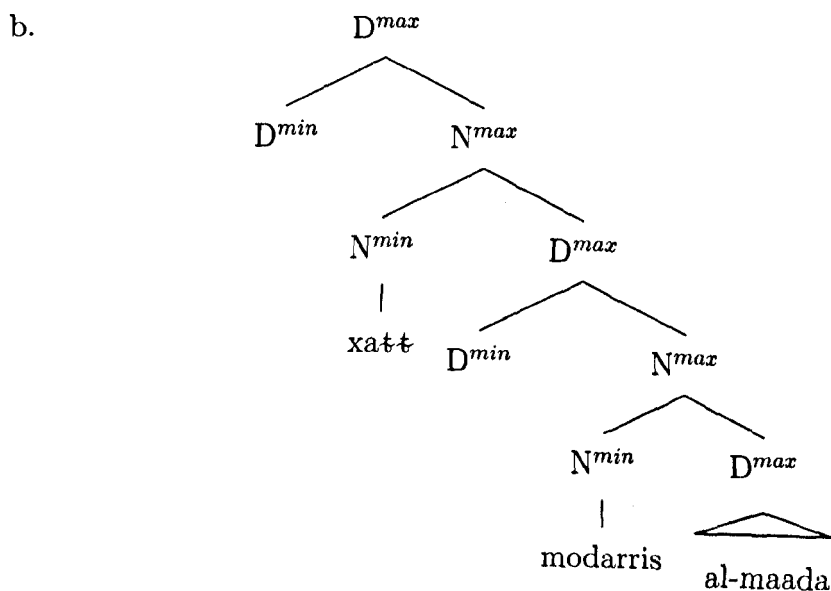


The derivation of Simple DPs and Free State Genitives would also proceed along the same lines; the difference would be the type of D projected in each structure and whether or not N takes an argument.

In the analysis proposed here, head-to-spec movement is the result of the various Arabic Ds having an EPP feature. Under the theoretical assumptions adopted in this thesis (§1.3), if there were no EPP feature on D, the c-selectional feature for an N would simply be checked as a result of merging D above the N projection. Under the current analysis, Head Movement does not have any direct effect on either genitive case checking or definiteness spread; the relevant features are simply checked via Agree. An obvious question to consider is whether Head Movement is really required as a part of the derivation of the Arabic DP. Could D and N be merged at the morphological part of the derivation without N having moved to spec/D in the syntactic part? In other words, is there really a motivation for Arabic Ds having an EPP feature?

Simple DPs do not have complex enough structure to test whether Head Movement really takes place in the derivation of the Arabic DP. Therefore I am going to look at the DPs with more complex structure, i.e., Construct States. So far, following the majority of the literature (Ritter, 1987; Fassi-Fehri, 1993a, among others), I have represented the genitive phrase as being base generated to the left of the merge position of the N head of the Construct State. Given this order, Head Movement would be a necessary part of the derivation in order to get the word order found in the data. However, the leftward position of the genitive DP has not been motivated, and it could be argued that the genitive phrase is merged to the right of N. If this was true, the observed word order could be derived without Head Movement, especially since there is no overt determiner on the head of the Construct State. For example, the example in (48a) which involves embedding, repeated below as (65a), can be analysed as (65b) without any instances of Head Movement.

- (65) a. *xat̤t̤ modarris al-maada* (MA)
 handwriting(m-s) teacher(m-s) the course(f-s)
 “the handwriting of the teacher of the course”

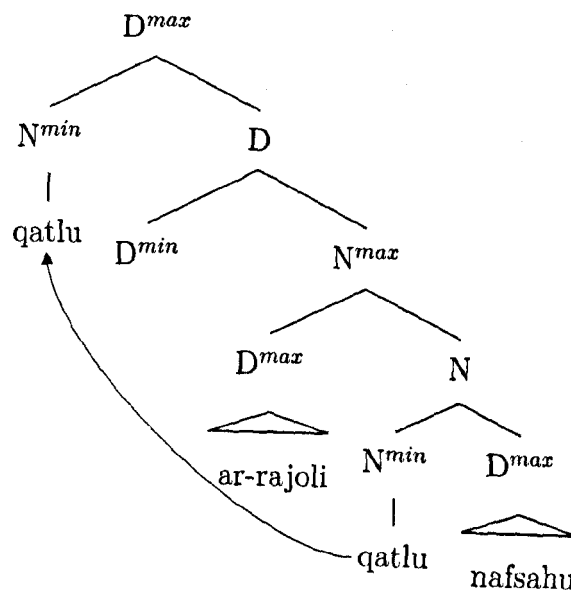


The genitive phrases would be arguments of the Ns, the c-selectional features on the Ds would be checked simply by merging Ns below Ds. Case features and definiteness features can be checked/valued via Agree. The only way to rule out this derivation is to motivate D having an EPP feature and thus motivating Head Movement. If head-to-spec movement does take place, it would be irrelevant whether the genitive phrase is merged to the right or to the left of N because N would move upwards to spec/D. So, how can the EPP feature be motivated?

In order to decide whether N does in fact leave its merge position, we need to find a nominal structure where it would be necessary for N to have moved from its original position. Consider the Construct State in (66a), where the noun takes two arguments: an agent and a theme. Genitive case is checked on the agent and accusative case on the theme. The head of this construct is a Verbal Noun. This structure will be analysed in detail in chapter 6. The simplified analysis in (66b) is sufficient for the present purposes.

- (66) a. qatlu ar-rajoli nafsahu (MSA)
 killing(m-s-nom) the man(m-s-gen) himself(acc)
 “the man’s killing of himself”

b.



In line with what is assumed in the verbal domain, I assume that the external argument (agent) of the noun *ar-rajoli* “the man” is merged higher than the internal argument (theme) *nafsahu* “himself”, and that the positions of the arguments are roughly as represented in (66b), making the argument structure parallel to that of the corresponding verb. This ordering is also supported by the fact that a reflexive is allowed in the internal argument position, suggesting that the position of the external argument, which the reflexive refers back to, is higher in the structure than the position of the internal argument. In such a structure, in order for the head *qatlu* “killing” to be in a position to the left of the agent, the head would have to move to a position higher than the agent, as shown in (66b). Since the D in this structure is the Construct State D, as reflected in the genitive case checked on the agent DP, it would be expected that this D would cause N to move in all Construct States; in other words, Construct State D has an EPP feature. However, this does not necessarily entail that all Arabic Ds have this feature. Nevertheless, I will assume that all Ds have this EPP feature because this minimises the differences between the different Ds and different kinds of DPs. Moreover, at the beginning of this section, I argued that a morphological merger operation merges the various Ds with N. If we assume that head-to-spec movement takes place in all Arabic DPs, the input to the morphological operation would be the same in Simple DPs, Construct States and Free State Genitives. This would be more minimalist because the morphological operation would

take D and N from the same position in all the structures.

In this section, I argued that a morphological operation merges the Arabic D with the N which has moved to spec/D in the course of the syntactic derivation. I also argued that M-merger is not sufficient to explain the word order of the Arabic DP, and that Head Movement is a necessary part of the derivation. This section has completed the proposed analysis of the Arabic DP in general and the Nominal Construct State in particular. In the rest of this chapter and in chapters 5 and 6, I will extend the analysis proposed here to account for more complex Arabic DPs and other types of Construct States.

4.7 Quantifiers and Construct States

The most common quantifiers in Arabic are *koll* “all” or “each”, *ʔai* “any” and *baʕd* “some”. These three quantifiers are used in both the Arabic varieties studied in this thesis. In Modern Standard Arabic, *koll* “all” has two variants used with dual nouns: *kila* (masculine) and *kilta* (feminine), literally meaning “both”. Makkan Arabic has two more quantifiers: *kam* “some” and *šoiaia* “a small amount/number of”. *Kam* can be used as a wh-word meaning “how many” in both Makkan Arabic and Modern Standard Arabic, but the quantifier use is specific to Makkan Arabic. All of these quantifiers are used as heads of Construct States, requiring genitive DPs as the quantified phrases. Some quantifiers, however, may also be used postnominally or they may float at the end of sentence. I will discuss each of these uses and situate their behaviour within my theory of the Arabic DP.

4.7.1 Construct State Quantifiers

The first use of Arabic quantifiers I will consider here is the Construct State. This is the “unmarked” pattern, and it is the one most frequently used. The quantifier would be the head of the structure, followed by a genitive phrase, as shown in (67).

- (67) *kollu al-ʔaʔfaali* (MSA)
 all(nom) the children(m-p-gen)
 “all the children”

The structural case of the whole construct is marked on the quantifier, suggesting that the quantifier is the head of the structure. For example, in (68) the Construct State *kollu al-ʔaʔfaali* “all the children” is the subject of the verb *jaaʔa* “came”, and nominative case is marked on the quantifier *koll*. In (68b), the construct is the object of the verb *raʔaitu* “saw”, and as *kollu* “all” is the head of the construct, the quantifier is marked for accusative case.

- (68) a. *jaaʔa kollu al-ʔaʔfaali.* (MSA)
 came(3-m-s) all(nom) the children(m-p-gen)
 “All the children came.”
- b. *raʔaito kolla al-ʔaʔfaali.* (MSA)
 saw(1-s) all(acc) the children(m-p-gen)
 “I saw all the children”

Moreover, as Shlonsky (1991b) and Benmamoun (1999) point out, Arabic (and Hebrew) quantifiers have the ability to host clitics as shown in (69), and only heads can host clitics in these languages.

- (69) *kollu-na* (MSA)
 all(nom) us
 “all of us”

Each one of the Arabic quantifiers requires specific number and definiteness values for the genitive phrase they select.¹¹ I assume that this is simply a type of selection; each quantifier selects for a specific type of DP.

The quantifier *koll* can mean either “all” or “each”. When *koll* is a universal quantifier, it selects either definite plural or definite mass DPs ((70a) and (70b), respectively). Its dual variants in Modern Standard Arabic *kila* and *kilta* select

¹¹Arabic quantifiers require that a determiner is used on the genitive phrases which follow them; they are not in complementary distribution with determiners, as is the situation in English, for example. Therefore, they cannot be considered to be determiners.

definite dual DPs which agree with them in gender ((70c) and (70d)).¹² However, when this quantifier means “each”, it selects for an indefinite singular DP. In Modern Standard Arabic, this means that the genitive DP has to be nunated (70e), but in Makkan Arabic a bare noun is used as the indefinite article is null in this variety (70f).

- (70) a. kollu al-woroodi (MSA)
 all the flowers(f-p)
 “all the flowers”
- b. koll al-moia (MA)
 all the water
 “all the water”
- c. kila al-waladaini (MSA)
 both(m) the boys(m-d-gen)
 “both the boys”
- d. kilta al-fataataini (MSA)
 both(f) the girls(f-d-gen)
 “both the girls”
- e. kollu waladi-n (MSA)
 each(nom) boy(m-s) (ind)
 “each/every boy”
- f. koll walad (MA)
 each boy(m-s)
 “each/every boy”

The quantifier *?ai* “any” can only be followed by an indefinite singular DP (71).

- (71) ?ai kitaab (MA)
 any book(m-s)
 “any book”

Ba^cd “some” selects only definite plural DPs(72).

- (72) ba^cdu al-?a^tfaali (MSA)
 some(nom) the children(m-p-gen)
 “some children”

¹²Case is not overtly marked on *kila* and *kilta* because they end in vowels, making them phonologically incompatible with overt case ending.

The Makkan Arabic *kam* “some” should be followed by an indefinite singular noun (73).¹³

- (73) kam ṣaḥin (MA)
 some plate(m-s)
 “some plates”

Šoaiat “a few” may be followed by an indefinite plural or mass DP ((74a) and (74b), respectively).

- (74) a. Šoaiat ṭabxaat (MA)
 a few recipes(f-p)
 “a few recipes”
 b. Šoaiat roz (MA)
 little rice(m-mass)
 “little rice”

None of the quantifiers accepts modification by degree adverbs, either immediately following the quantifier (75a) or, as is normal for Construct States, after the genitive phrase (75b).

- (75) a. *Šoaiat marra ṭabxaat (MA)
 a few very recipes(f-p)
 “very few recipes”
 b. *Šoaiat ṭabxaat marra (MA)
 a few recipes(f-p) very
 “very few recipes”
 c. *kollu taqreeban al-kotobi qaraʔto-ha. (MSA)
 all(nom) nearly the books(m-p-gen) read(1-s) her
 “I read nearly all the books.”
 d. *kollu al-kotobi taqreeban qaraʔto-ha. (MSA)
 all(nom) the books(m-p-gen) nearly read(1-s) her
 “I read nearly all the books.”

¹³The wh-word use of *kam* is shown in (1).

- (1) kam kitaab gireet? (MA)
 how many book(m-s) read(1-m-s)
 “How many books did you read?”

Quantifiers cannot be negated either, as shown in (76).¹⁴

- (76) * mo Šoaiat †abxaat (MA)
 not a few recipes(f-p)
 “not few recipes”

The genitive phrase following the quantifier, however, can be modified (77a) or can be a Construct State in itself (77b).

- (77) a. Šoaiat †abxaat lazeeza (MA)
 a few recipes(f-p) delicious
 “a few delicious recipes”
- b. koll †al^caab walad-i (MA)
 all toys(m-p) son(m-s) my
 “all my son’s toys”

To summarise, the main use of Arabic quantifiers is as heads of Construct States. These constructs occupy nominal positions in sentences and structural case is marked

¹⁴There are certain uses of aspectual modifiers and negation which might seem to provide contexts where quantifiers may accept left-adjoined modifiers and negative heads. Consider the following examples.

- (1) a. tagreeban koll ađ-đoiiof waşalo. (MA)
 nearly all the guests(m-p) arrived(3-m-p)
 “Nearly all the guests arrived.”
- b. mo koll ađ-đoiiof waşalo. (MA)
 not all the guests(m-p) arrived(3-m-p)
 “Not all the guests arrived.”

I treat the adverb in (1a) as being a sentential modifier, rather than being adjoined to the quantifier projection. One reason for that is the fact that this adverb comes to the left, not to the right of the quantifier, and this position is not the typical position for modifiers in Arabic. Another reason is that this adverb may also come at the end of the sentence, as shown in (2).

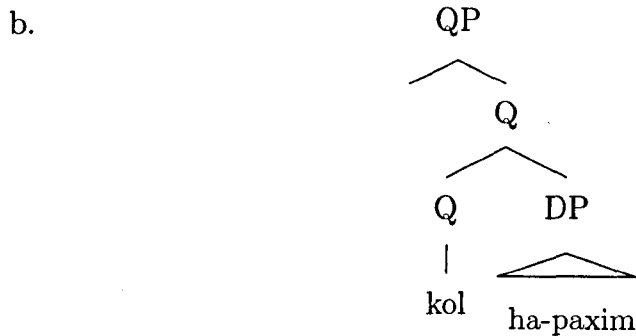
- (2) koll ađ-đoiiof waşalo tagreeban. (MA)
 all the guests(m-p) arrived(3-m-p) nearly
 “Nearly all the guests arrived.”

Similarly, I treat the negation in (1b) as sentential negation, not as being adjoined to the quantifier projection. It would be interesting to study how the different kinds and positions of negation in Arabic interact with quantifiers, but since Arabic negation itself is a rich topic, I leave this issue for future research.

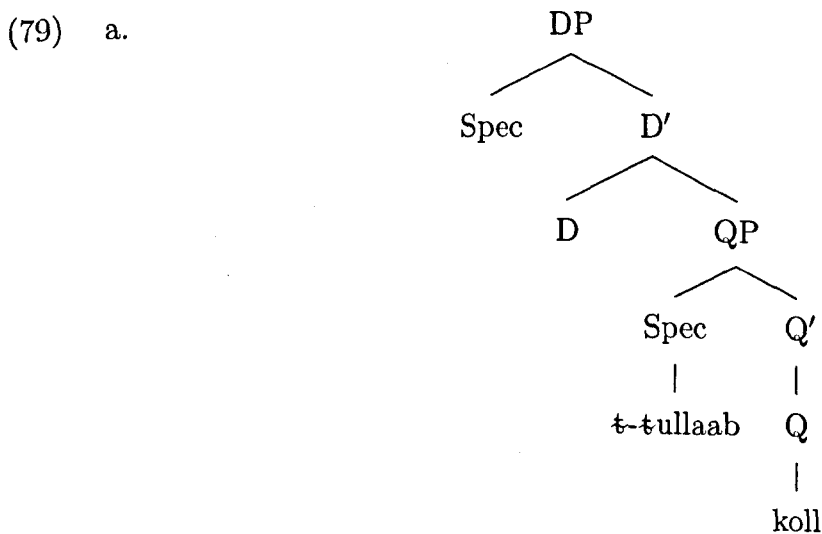
on the quantifier. Each quantifier selects for specific definiteness and number features in the genitive phrase which follows. Furthermore, quantifiers cannot be modified but the genitive phrases can be.

There are two main approaches to analysing Quantifier Construct States. Shlonsky (1991b,a) considers this structure to be a Construct State with the quantifier as the head and the genitive DP as the complement, but he does not postulate any Head Movement and does not project a D in the structure. He proposes the analysis in (78b) for the Hebrew Quantifier Construct State in (78a) (Shlonsky 1991b: 163).

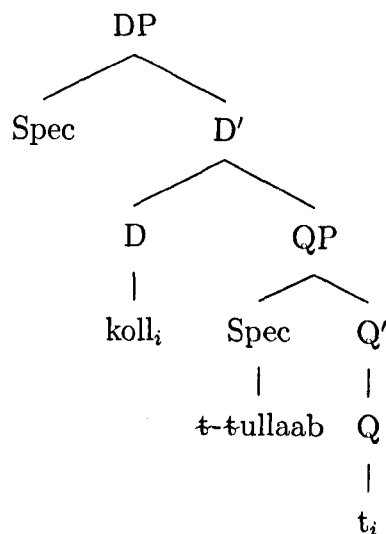
- (78) a. kol ha-paxim (MH)
 all the flowers(m-p)
 “all the flowers”



Benmamoun (1999), however, proposes that Head Movement is a part of the derivation of these constructs. He claims that the quantifier Q moves to D, as shown in the derivation in (79) (Benmamoun 1999: 625).



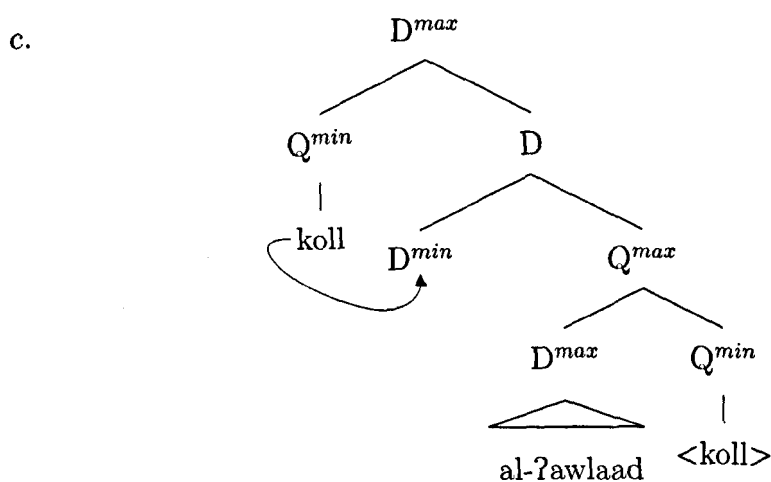
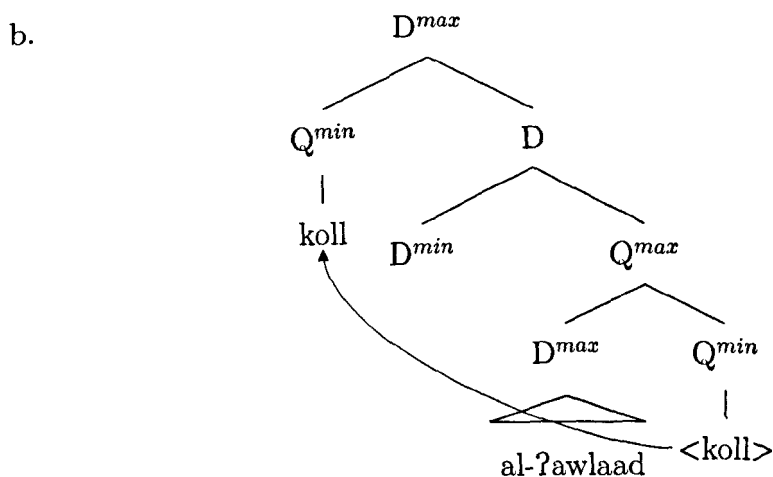
b.



Benmamoun's analysis has some advantages over Shlonsky's. Mainly, an analysis which projects a D above the quantifier explains the case on the genitive phrase in the same way in both quantifier-headed Construct States and noun-headed Construct States. This would be a desirable conclusion given the similarities between the two structures, especially since they both function as nominals. Moreover, the case marked on the heads of both types of constructs would be checked on D; if no D was projected, the case marked on nouns and quantifiers would have to be analysed differently.

According to the proposal developed in this thesis, the Construct State D would be projected above Q, and the derivation would proceed in the same way proposed for Nominal Construct States. The difference is that the moved head is a Q, not an N, as shown in (80b). Under this approach, no modifiers would be allowed to adjoin to the Q projection, and this could be understood as a matter of incompatibility between the categories used as modifiers and quantifiers. I also assume that Q is morphologically merged with D, as shown in (80c).

- (80) a. koll al-ʔawlaad (MA)
 all the boys(m-p)
 "all the boys"



As explained in §4.2, definiteness spread is one of the important characteristics of Nominal Construct States. The way the current proposal accounts for definiteness spread is to assume that there is an unvalued definiteness feature on the Construct State D and that this feature is valued via an Agree relation with the genitive phrase. If this D is assumed to be projected in Quantifier Construct States, the same process of definiteness spread will be expected to take place. Nevertheless, the test used for Nominal Constructs, which involves agreeing adjectival modifiers, cannot be used for Quantifier Construct States because quantifiers do not accept modification by agreeing modifiers. However, there is evidence suggesting that the definiteness of the genitive phrase may have an effect on whether or not the whole Quantifier Construct can be used in some positions. Consider the following data.

- (81) a. al-walad fi al-bait. (MA)
 the boy(m-s) in the house(m-s)
 "The boy is at home."
- b. * walad fi al-bait. (MA)
 boy(m-s) in the house(m-s)
 "A boy is at home."
- c. fi walad fi al-bait. (MA)
 there boy(m-s) in the house(m-s)
 "There is a boy at home."

As shown in the examples in (81), only definite DPs can be subjects of copular sentences of the structure DP PP. If an indefinite subject is to be used, an existential should be used before the subject, as shown in (81c).¹⁵ The same pattern can be found with Quantifier Construct State with definite and indefinite genitive phrases, as fully illustrated in the examples in (82).

- (82) a. koll al-ʔawlaad fi al-bait. (MA)
 all the boys(m-p) in the house(m-s)
 "All the boys are at home."
- b. * koll walad fi al-bait. (MA)
 each boy(m-s) in the house(m-s)
 "Each boy is at home."
- c. baʕd al-ʔawlaad fi al-bait. (MA)
 some the boys(m-p) in the house(m-s)
 "Some boys are at home."
- d. * moo ʔai walad fi al-bait. (MA)
 not any boy(m-s) in the house(m-s)
 "no boy is at home."
- e. * šoaiat ʔawlaad fi al-bait. (MA)
 few boys(m-p) in the house(m-s)
 "Few boys are at home."
- f. fi šoaiat ʔawlaad fi al-bait. (MA)
 there few boys(m-p) in the house(m-s)
 "There are few boys at home."

¹⁵The same pattern is available in Modern Standard Arabic, but the existential used in *honaaka* "there".

- g. *kam walad fi al-bait (MA)
 some boy(m-s) in the house(m-s)
 "Some boys are at home."
- h. fi kam walad fi al-bait (MA)
 there some boy(m-s) in the house(m-s)
 "There are some boys are at home."

Examples (82a) and (82c), where the quantifier is followed by a definite genitive phrase, are grammatical. However, when the quantifier is followed by an indefinite DP, as in (82b), (82d), (82e) and (82g), the Quantifier Construct State cannot be used as the subject in this structure. Nevertheless, *šoia* "few" and *kam* "some" can be used with an existential ((82f) and (82h)), which is also the pattern seen with indefinite DPs in (81c). Thus, I suggest that definiteness spread does take place in Quantifier Construct States, and thus the definiteness feature on D would have to be valued using the same mechanism used in Nominal Construct States.

In this section, I argued that Construct States headed by quantifiers have the same derivation as Nominal Construct States. Both constructs involve head-to-spec movement as a result of the projection of the Construct State D. All quantifiers can be used in this structure; and as will be explained shortly, for some this is the only possible structure. In the following sections, I will introduce the other uses of quantifiers in Arabic and consider whether these other uses are derivationally related to the Construct State use or whether each one is structurally independent of the others.

4.7.2 Postnominal Quantifiers and Quantifier Float

The Arabic universal Quantifiers *koll* "all", as well as its dual variants, can be used postnominally. In this case, this quantifier would follow the same type of DP it would select in Quantifier Construct States; *koll* would follow a definite plural noun, *kila* (m) a definite dual masculine noun and *kilta* (f) a definite dual feminine noun. Moreover, *koll* "all" and its dual variants may also be used as floating quantifiers. These two uses are usually thought to be related to each other in the sense that the latter may be derived from the former (Shlonsky, 1991b,a; Benmamoun, 1999, for example). I

will introduce these two uses of *koll* and consider whether they are related to the Construct State use and to each other. I will use *koll* to illustrate, but the same facts apply to *kila* and *kilta*.

The use of *koll* ‘all’ as a postnominal quantifier differs significantly from its prenominal use in two respects. Firstly, *koll* must agree in case with the noun it follows, while as I explained in §2.7 the case checked on prenominal quantifiers depends on their position in the sentence. Secondly, when *koll* is used postnominally, it must have a plural clitic which agrees in gender with the preceding noun. Consider the following examples.

- (83) a. *jaaʔa* *al-ʔaʔfaalu* *kollu-hom.* (MSA)
 came(3-m-s) the children(m-p-nom) all(nom) them(m)
 ‘‘All the children came.’’
- b. *raʔaito* *al-ʔaʔfaala* *kolla-hom* (MSA)
 saw(1-s) the children(m-p) all them(m)
 ‘‘I saw all the children.’’
- c. *al-banaatu* *kollu-honna* (MSA)
 the girl(f-p-nom) all(nom) them(f)
 ‘‘all the girls’’

In (83a), the subject of the verb *jaaʔa* ‘‘came’’ is the quantified DP *al-ʔaʔfaalu kollu-hom* ‘‘all the children’’. Nominative case is marked on both *al-ʔaʔfaalu* ‘‘the children’’ and the quantifier *kollu-hom* ‘‘all’’. Moreover, there is a pronominal clitic on the quantifier, and this clitic has the same number and gender features as the noun the quantifier follows: plural and masculine. In (83b), accusative case is checked on the quantified DP, and as expected the case is marked on both the noun and the quantifier. The same pronominal clitic seen in (83a) is also used in (83b), agreeing with the quantified noun in number and gender. As illustrated in (83c), when the quantified noun is feminine, the pronominal clitic used is feminine plural, thus also agreeing with the noun in number and gender.

The universal quantifier *koll* and its dual variants can also be used as floating quantifiers; i.e., separated from the DP they quantify over, which is usually the subject. This use is typically found in SV sentences, with the quantifier located after

the verb, as shown in (84). The quantifier is marked for nominative case, agreeing with the subject, and a pronominal clitic agreeing with the subject in number and gender is obligatorily attached to the quantifier.

- (84) a. *aṭ-ṭollaabu* *jaaʔo* *kollu-*(hom)* (MSA)
 the students(m-p-nom) came(3-m-p) all(nom) them(m)
 “All the students came.”
- b. *aṭ-ṭaalibaatu* *jiʔna* *kollu-*(honna).* (MSA)
 the students(f-p-nom) came(3-f-p) all(nom) them(f)
 “All the students came.”

When floating quantifiers are used with transitive verbs, the quantifier may come either before or after the object ((85a) and (85b), respectively).

- (85) a. *aṭ-ṭollaabu* *ḥafiṣo* *kollu-hom*
 the students(m-p-nom) memorised(3-m-p) all(nom) them(m)
 ad-darsa. (MSA)
 the lesson(m-s-acc)
 “All the students memorised the lesson.”
- b. *aṭ-ṭollaabu* *ḥafiṣo* *ad-darsa*
 the students(m-p-nom) memorised(3-m-p) the lesson(m-s-acc)
 kollu-hom. (MSA)
 all(nom) them(m)
 “All the students memorised the lesson.”

It is usually assumed in the literature on Arabic (Shlonsky, 1991b,a; Benmamoun, 1999, for example) that floating quantifiers are derived from structures where the subject is a DP with a postnominal quantifier, following Sportiche’s (1988) treatment of floating quantifiers in English. The subject would be raised to a position above the verb, and the quantifier would be left stranded. I will first analyse postnominal quantifiers and then investigate whether this assumption is valid.

The main issues to account for when studying Arabic postnominal quantifiers relate to the relationship between this use and the Construct State use and to the status of the pronominal clitics. Is the postnominal use of quantifiers derived from their Construct State use, or vice versa? Moreover, how can the obligatory presence of the pronominal clitic on the quantifier be explained and what is the nature of this clitic?

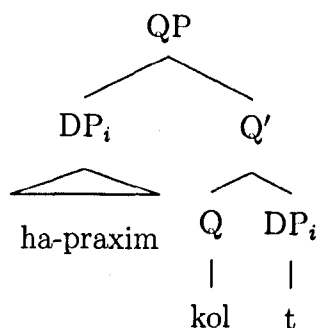
There are two approaches in the literature to these two questions. The first approach is by Shlonsky (1991a,b); he proposes that the postnominal structure (NP-Q) is derived from the Construct State one (Q-NP) and that the pronominal clitic in the former case is an agreement feature on the quantifier. The other approach, proposed by Benmamoun (1999), is that the two structures are independent of each other, but he also assumes that the pronominal clitic signals an agreement feature on the quantifier. However, the two approaches differ in what they assume the quantifier agrees with. Following Benmamoun (1999), I will argue that the two structures are not related by movement. I will also argue that the pronominal clitic is an agreement feature, but I differ from both Benmamoun (1999) and Shlonsky (1991b,a) in defining the configuration this agreement takes place in.

Shlonsky (1991b) studies similar uses of quantifiers in Hebrew and he argues that the Construct State and postnominal quantifiers are related to each other by movement because both patterns can appear in the same positions (as shown in (86a) and (86b) (Shlonsky 1991b: 163-164)) and they can be conjoined (as in (86c) (Shlonsky 1991b: 164)).

- (86) a. Ze hayu kol ha-yeladim še-zarku ?avanim. (MH)
 it was all the-children that-threw stones
 "It was all the children who threw stones."
- b. Ze hayu ha-yeladim kul-am še-zarku ?avanim. (MH)
 it was the-children all-[3MPL] that-threw stones
 "It was all the children who threw stones."
- c. ?Ra?iti ?et kol ha-banot ve-?et ha-banim kul-am (MH)
 (I) saw acc all the-girls and-acc the-boys all-[3MPL]
 "I saw all the girls and all the boys."

Shlonsky (1991b) proposes that the structure of DP-Q is derived from a Quantifier Construct State by moving the complement of Q to spec/Q, as in (87) (Shlonsky 1991b: 165). The phrase *ha-praxim* is "the flowers" in Hebrew, and *kol* is the base form of the universal quantifier "all".

(87)

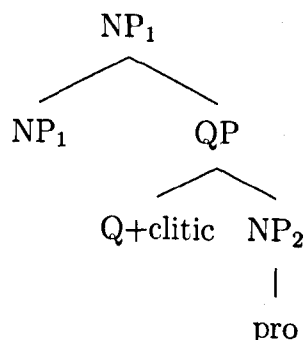


He also claims that the pronominal clitic on Q is the result of its agreement with the DP in its specifier, and that this agreement is necessary to turn Q - a deficient head - into an appropriate head-governor for the trace of the moved DP, as proposed in Rizzi (1990).

Benmamoun (1999), however, argues that the two structures of Q-NP and NP-Q cannot be related by movement. He points out two important facts. The first is that movement out of Construct States is not allowed in Arabic, and therefore movement out of a Construct State headed by a quantifier would not be permissible (see §4.2). The second is that the head of the NP-Q structure is not Q, but the NP, mainly because the structural case checked on the DP as a whole is marked on the noun preceding the quantifier, and the quantifier agrees with that noun in case and phi-features, as shown in examples (83a) and (83b) above. This is different from Q-NP case where external case is checked on the quantifier and genitive case is marked on the following DP, i.e., the quantified phrase. Shlonsky's proposal does not explain this difference in case patterns in the two instances.

Instead, Benmamoun proposes that in the case of NP-Q, Q is an adjunct to NP, as in (88) (Benmamoun 1999: 636).

(88)



One of Benmamoun's main arguments for the independent status of the quantifier

in this structure is based on the availability of reconstruction effects for these structures in Lebanese Arabic, as shown in (89) (Benmamoun 1999: 631), where *nimrat bint-a* “her daughter’s grades” is reconstructed to a position before the quantifier *kill-un* “all (of them)”.

- (89) *nimrat bint-a fakkarto ?inno kill emm*
 grades(f-p) daughter(f-s) her thought(3-p) that every mother(f-s)
ḥafadit-un kill-un (LA)
 memorised(3-f-s) them all them
 “You thought every mother memorized all the grades of her daughter.”

Benmamoun accepts the claim made by Aoun and Benmamoun (1998) that reconstruction effects in Arabic occur only when movement is involved. Since movement out of Construct States is not allowed, these effects would not be expected to take place if the structure of postnominal quantifiers were a Construct State, as claimed by Shlonsky (1991b,a). Since these effects do take place, Benmamoun concludes that this structure is not a Construct State.

Benmamoun (1999) proposes that the postnominal quantifier indirectly agrees with the noun it follows. He claims that Q agrees with a null pronominal, *pro* in (88), and that *pro* agrees with the noun; the result would be that Q agrees with the noun indirectly. However, I believe that this indirect agreement is not necessary. If the quantifier is an adjunct to NP, it would be expected to agree with the noun it modifies in the same way all postnominal Arabic modifiers do. The quantifier would agree with the noun in number, gender, case and definiteness. The first three are overtly marked, as illustrated in this section. Definiteness, however, is not, and I claim that this is because the universal quantifier, which is the only quantifier available for this structure, is inherently definite. The fact that this quantifier can only modify definite DPs supports this claim.

One question arises here, not only with respect to my approach, but it relates to any analysis which treats the pronominal clitic on postnominal quantifiers as agreement features on the quantifier. If the quantifier has number and gender features which are overt when the quantifier is a postnominal modifier, why are these features not overt when the quantifier is the head of a Construct State? In other words,

why are the pronominal clitics used only on postnominal quantifiers if it is the same Q which is used both in NP-Q and Q-NP structures? I propose that postnominal quantifiers are in fact not the same category as pronominal ones. In other words, the universal quantifier *koll* and its dual variants *kila* and *kilta*, which are the only quantifiers available for postnominal use, may be ambiguous between two categories: one more nominal in nature, and it is this category which can be the head of a Quantifier Construct State, and another adjectival, which is the one which can be used postnominally. This proposal can be supported by the fact that the postnominal use of quantifiers is limited only to *koll* and its variants. If the category Q, which is the head of the Quantifier Construct State, were available for the postnominal use, all quantifiers would be expected to be used postnominally. However, if these three related words are ambiguous between two categories, there would be no expectation for the other quantifiers to be used postnominally. Thus, in their quantifier use, *koll*, *kila* and *kilta* select for definite plural, definite masculine dual and definite feminine DPs, respectively. This selection process takes place for all Arabic quantifiers, as explained at the beginning of this section. However, in their adjectival use, these three lexical items modify nouns with the same features they selects for, and they also overtly agree with these nouns in number and gender. This agreement is represented as a pronominal clitic. These two patterns are illustrated below.

- (90) a. *kollu ar-rijaali* (MSA)
 all(nom) the men(m-p-gen)
 "all the men"
- b. *kollu an-nisaaʔi* (MSA)
 all(nom) the women(f-p-gen)
 "all the women"
- c. *ar-rijaalu kollu-hom* (MSA)
 the men(m-p-nom) all(nom) them(m)
 "all the men"
- d. *an-nisaaʔu kollu-honna* (MSA)
 the women(f-p-nom) all(nom) them(f)
 "all the women"

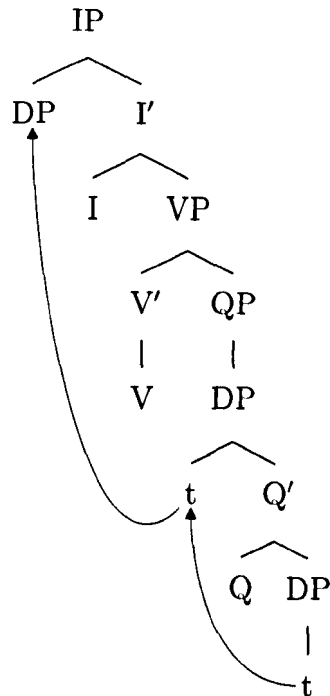
- (91) a. *kila ar-rajolaini* (MSA)
 both the men(m-d-gen)
 "both the men"
- b. *ar-rajolaani kilaa-homa* (MSA)
 the men(m-d-nom) both(nom) them(d-m)
 "both the men"
- (92) a. *kilta al-marʔataini* (MSA)
 both the women(f-d-gen)
 "both the women"
- b. *al-marʔataani kilta-honna* (MSA)
 the women(f-d-nom) both(nom) them(f)
 "both the women"

Floating quantifiers in Arabic are usually thought to be derived from postnominal quantifiers. This is because quantifiers which can float are the same ones which can be used postnominally, i.e., *koll*, *kila* and *kilta*. Moreover, floating quantifiers have the same pronominal/agreement clitic seen on postnominal quantifiers.

- (93) a. *al-banaatu jiʔna kollu-honna* (MSA)
 the girls(f-p-nom) came(f-p) all(nom) them(f-p)
 "All the girls came."
- b. *al-ʔawlaadu jaaʔo kollu-hom* (MSA)
 the boys(m-p-nom) came(m-p) all(nom) them(m-p)
 "All the boys came"

Following Sportiche (1988), I claim that Arabic floating quantifiers are the VP-internal residue which is left behind after the subject moves to the preverbal position, i.e., spec/I. In other words, the floating quantifier would be in the original Merge position of the subject. Thus, the subject moves without its modifier. Shlonsky (1991b), in the context of his analysis of quantifiers, also argues along similar lines. He proposes that the movement needed to form postnominal quantifiers takes place first (the complement DP moves to spec/Q), and then the DP which is now in the spec/Q moves to spec/I, as shown in (94) (Shlonsky 1991b: 169).

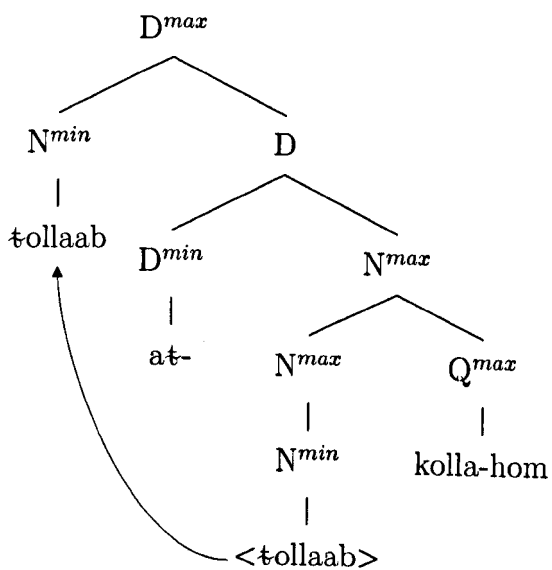
(94)



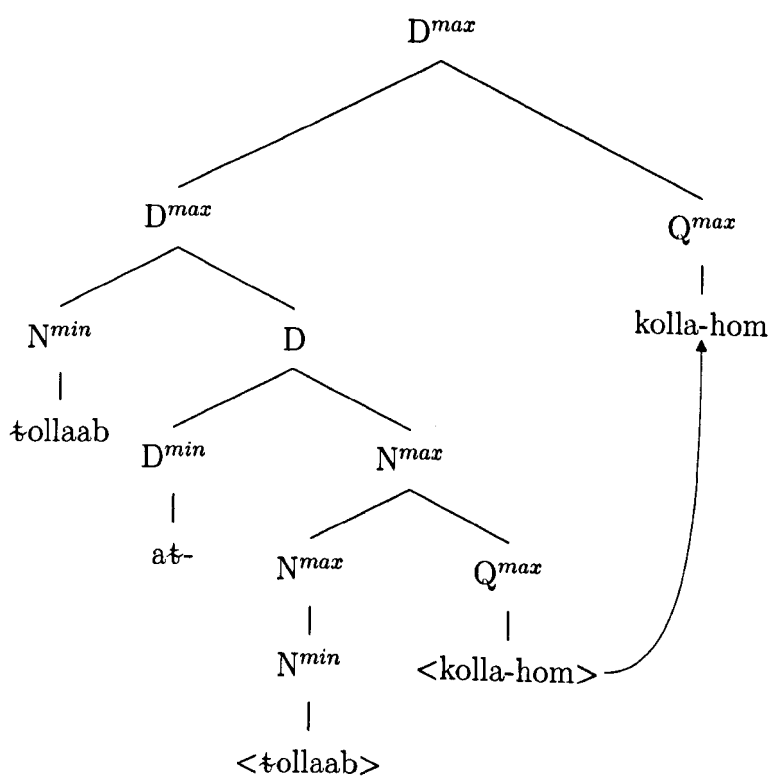
However, Shlonsky's analysis predicts that extraction out of Construct States is possible, but as argued above, this is not the case. However, in the proposal developed here, postnominal quantifiers are not assumed to be Construct States. Therefore, the movement of the subject while stranding the quantifier is expected to be possible. However, I assume that the quantifier is extracted out of the subject DP before the latter is moved. The sentence in (95) would be analysed as in (96).

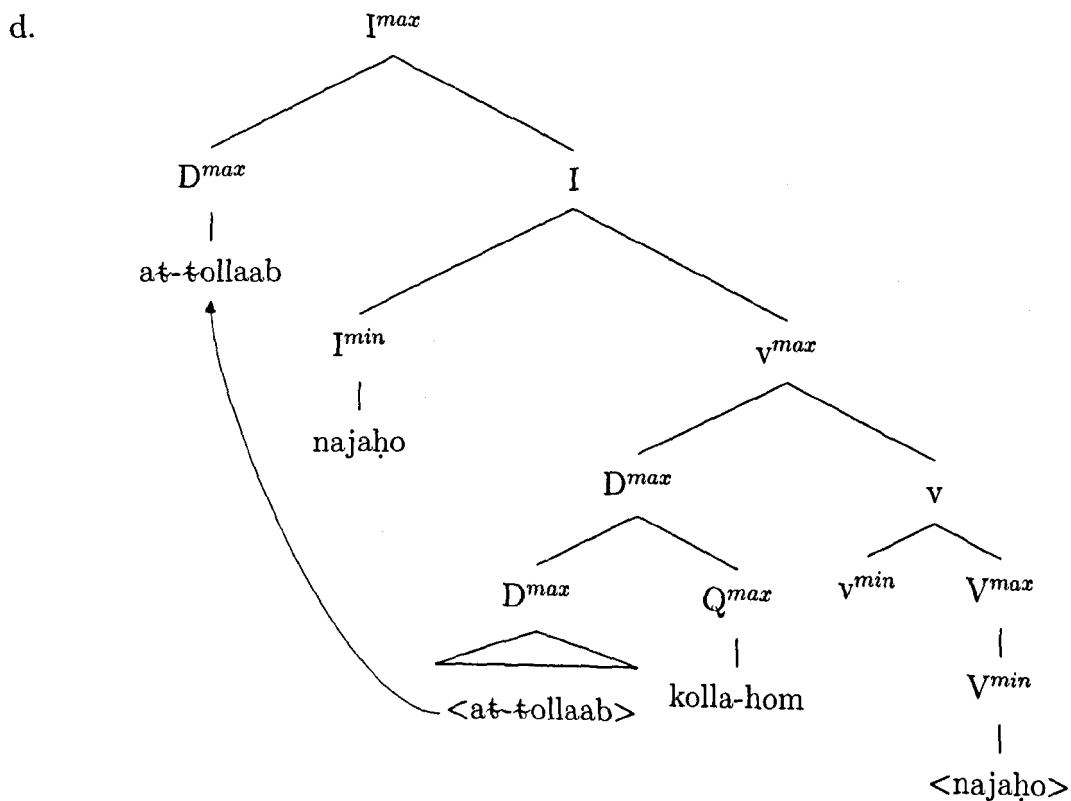
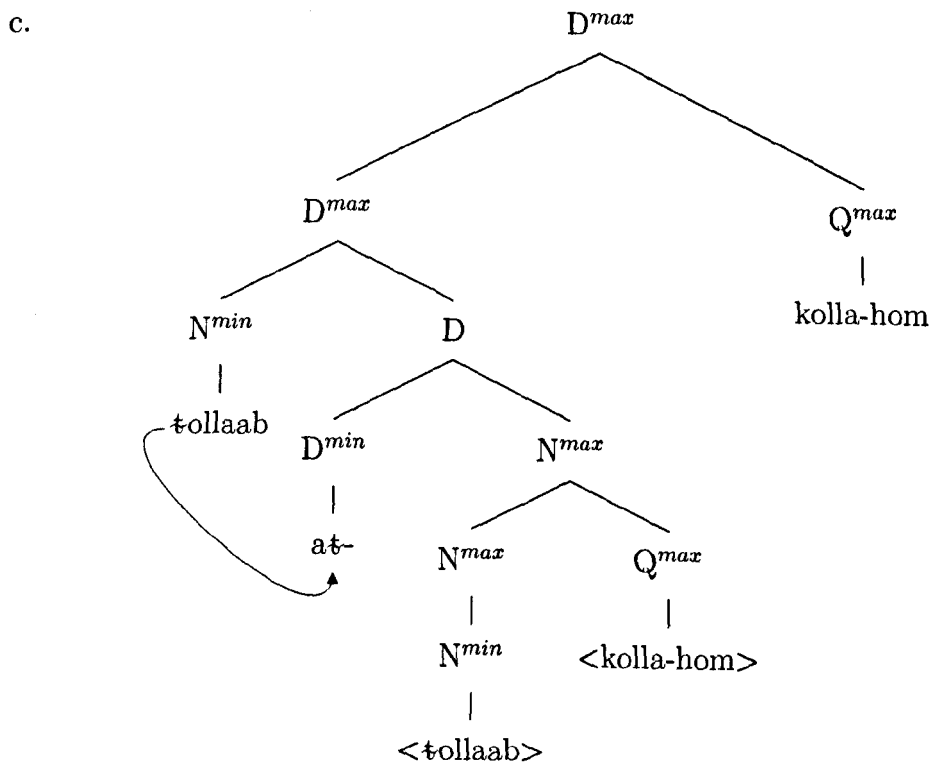
- (95) at-tollaab najaho kolla-hom. (MA)
 the students(m-p) passed(3-p) all them
 "All the students passed."

(96) a.



b.





As my proposal assumes for all Arabic DPs, N^{min} moves to spec D (96a). The postnominal quantifier is then extracted out of the DP and left adjoined to it (96b). I assume that this step would be necessary in all cases of quantifier float if DPs

are assumed to be phases, as suggested by Gutierrez-Rexach and Mallen (2001), Svenonius (2004), Lee-Schoenfeld (2004, 2008) and Bošković (2005) and others. When the DP is spelled out, the M-merger of N and D takes place (96c). Finally, the lower D is moved to the subject position and the quantifier is stranded (96d).

When floating quantifiers are used in a sentence with a transitive verb, the floating quantifier might either occur before the object or after it, as illustrated in (85) above, repeated here as (97).

- (97) a. *aṭ-ṭollaabu* *ḥafiṣo* *kollu-hom*
 the students(m-p-nom) memorised(3-m-p) all(nom) them(m)
 ad-darsa. (MSA)
 the lesson(m-s-acc)
 ‘‘All the students memorised the lesson.’’
- b. *aṭ-ṭollaabu* *ḥafiṣo* *ad-darsa*
 the students(m-p-nom) memorised(3-m-p) the lesson(m-s-acc)
 kollu-hom. (MSA)
 all(nom) them(m)
 ‘‘All the students memorised the lesson.’’

My analysis would be able to account only for the former option (97a), not the latter (97b), given that the Merge position of the subject, where the quantifier would be left stranded, is to the left of the object. So, how can the fact that the floating quantifier can also occur after the object be accounted for? One option is to assume that the quantifier is moved to a post-object position in the same way subjects can be in Modern Standard Arabic, as shown in (98).

- (98) a. *ʔakala* *al-waladu* *at-toffaahata.* (MSA)
 ate(3-m-s) the boy(m-s-nom) the apple(f-s-acc)
 ‘‘The boy ate the apple.’’
- b. *ʔakala* *at-toffaahata* *al-waladu.* (MSA)
 ate(3-m-s) the apple(f-s-acc) the boy(m-s-nom)
 ‘‘The boy ate the apple.’’
- c. *al-waladu* *ʔakala* *at-toffaahata.* (MSA)
 the boy(m-s-nom) ate(3-m-s) the apple(f-s-acc)
 ‘‘The boy ate the apple.’’

As illustrated in (98), there are three possible positions for subjects in Modern Standard Arabic: between the verb and the object (98a), after the object (98b) and before

the verb (98c). It could be argued that when the quantifier moves out of the subject DP, the subject would move to spec/I and then the quantifier would move to a position after the object in the same way the subject has in (98b). However, this proposal would not account for the fact that this post-object option of floating quantifier is the preferred option in Makkan Arabic (99b), even though this variety does not usually allow structures of the type VOS, as shown in (100).¹⁶

- (99) a. ? al-banaat sawow kolla-hom al-waajib. (MA)
 the girls(f-p) made(3-p) all them the homework(m-s)
 “All the girls did the homework.”
- b. al-banaat sawow al-waajib kolla-hom. (MA)
 the girls(f-p) made(3-p) the homework(m-s) all them
 “All the girls did the homework.”
- (100) ?? sawow al-waajib al-banaat. (MA)
 made(3-p) the homework(m-s) the girls(f-p)
 “The girls did the homework.”

I propose that when Arabic floating quantifiers occur after the object, they would be adjoined to the maximal verbal projection. They would still be base generated as modifiers of N, and this is how they get their case, number and gender features. Nevertheless, when the postnominal quantifier leaves the subject DP, it is adjoined to the V projection instead of the D projection. Benmamoun (1999) also argues that in some cases, floating quantifiers are better analysed as VP adjuncts. However, he does not assume that these quantifiers would move from a position within the subject, and therefore his analysis would leave the agreement features on the quantifier unexplained. Nevertheless, if the quantifier is base generated within the subject DP before adjoining to the VP, these features would be valued before the quantifier moves. I assume that the option of adjoining to the verbal projection would still be available with intransitive verbs, although the word order would be the same whether the quantifier adjoins to D or V.

¹⁶The VOS structure is possible in Makkan Arabic only with very special intonation in specific discourse circumstances and only when it is relatively easy to distinguish the subject from the object. When ambiguity might arise, this word order is ruled out.

In this section, I argued that postnominal quantifiers are not derivationally related to prenominal ones. The former are modifiers, whereas the latter are heads of Construct States. Moreover, I argued that floating quantifiers are derived from postnominal quantifiers by extracting the quantifier out of the subject DP before moving the latter to spec/I.

4.8 Conclusion

This chapter has offered a minimalist account for the Arabic DP. I argued that head-to-spec movement of N to spec/D takes place in all types of DPs. The differences between Simple DPs and Construct States are attributed to the D projected in each structure. I propose that there are three Ds in Arabic: definite, indefinite and Construct State. Construct State D checks genitive case and has an unvalued definiteness feature. I analysed two types of Construct States headed by nouns and quantifiers, and I argued that the same type of D is projected in both structures. I have also discussed the other uses of quantifiers in Arabic and argued that they are not derivationally related to Quantifier Construct States. In chapters 5 and 6, I will discuss two more types of Construct States, headed by adjectives and Verbal Nouns. I will analyse these two types in a way which explains the properties they share with the Construct States discussed in this chapter as well any special behaviour each of them displays.

Chapter 5

Adjective-Headed DPs

5.1 Introduction

There are some Semitic structures which share some properties of the Nominal Construct States discussed in chapter 4 but are headed by adjectives or adjective-related forms. Collectively, I refer to these as Adjective-Headed DPs (AHDPs).¹ After careful examination of the data, I have identified three types of AHDPs in Arabic. The generative literature on these structures does not to make the three-way distinction I am making in this chapter. This is mainly because most of the studies considered a single structure as the only available AHDP or glanced over the subtle, but important differences I note.

The classification system I use for AHDPs identifies three structures: Adjectival Compounds (1), the Nominalised Adjectival Construct (2) and the Superlative Construct (3).²

- (1) *jaaʔat fataatu-n **ṭaweelatu** aš-šaʕri.* (MSA)
came(3-f-s) girl(f-s-nom) (ind) long(f-s-nom) the hair(m-s-gen)
“A girl with long hair came.”

¹The use of DP here does not necessarily mean that these structures are nominal. In §2.4 I explained that Arabic adjectives are also DPs.

²The head of each AHDP is marked as italicised boldface. The genitive components are only italicised.

(2) labisto *ḥasana at-ṭiabi.* (MSA)
 wore(1-s) good(m-s-acc) the clothes(m-p-gen)
 “I wore the good clothes.”

(3) raʔaito *ʔakbara waladi-n.* (MSA)
 saw(1-s) oldest(acc) boy(m-s-gen) (ind)
 “I saw the oldest boy”

Adjectival Compounds (1) and Nominalised Adjectival Constructs (2) are both headed by forms which resemble simple adjectives, while the Superlative Construct (3), as can be inferred from its name, has a superlative adjective as its head. The Adjectival Compound (1) functions as a modifier, whereas the Nominalised Adjectival Construct (2) and the Superlative Construct (3) function as nominals. Apart from the fact that they involve adjectives, the property shared by the three structures and the one which identifies them as Construct States, or construct-like, is the fact that they all include a genitive DP following the head.

In this chapter, I will investigate these three types of Adjective-Headed DPs and propose an account which explains their construct-like properties as well as the distinct behaviour of each type. I will first introduce the Adjectival Compound and explain how it shows a mixture of adjectival and Construct State properties (§5.2). I will also review some analyses found in the literature on this structure and then propose a new approach to it. In §5.3, I will show how Nominalised Adjectival Constructs can be identified and how the analysis I propose explains the specific meanings associated with them. I will discuss the Superlative Construct which has not been widely studied in the generative literature in §5.4, and I will show that these constructs are derived in a way which is rather similar to the derivation of Nominalised Adjectival Constructs. In §5.5 I will briefly discuss Numeral Construct States and argue that they can be analysed along similar lines to the analyses proposed for Nominalised Adjectival Constructs and Superlative Constructs. I then summarise the main findings of the chapter in §5.6.

5.2 The Adjectival Compound

The Adjectival Compound (henceforth AC) is the most studied Semitic Adjective-Headed DP. The term usually used for this structure is “Adjectival Construct”. However, the approach I develop in this chapter does not treat them as constructs, and hence I will refer to them as Adjectival Compounds.

The Adjectival Compound is a Construct-State-like structure which functions like a simplex adjective. This structure is mainly used in Modern Standard Arabic. Its use in Makkan Arabic is fairly limited. When ACs are used in Makkan Arabic, they sound almost “poetic”. A typical use for this structure in this spoken variety would be praise. For example, a citizen might address a royal saying (4).

- (4) ?inta kateer al-?afdaal. (MA)
 you(m-s) many(m-s) the favors(m-p)
 “You have done many favors.”

Given that this structure is used only in very “formal” contexts, I assume that it is not a part of the syntax of Makkan Arabic, and that its use is a characteristic of a high register.³

In the following two sections, I will first explain the behaviour of this structure (§5.2.1) and then propose an analysis to account for this behaviour (§5.2.2).

³Whether the use of ACs in Makkan Arabic would constitute code switching to Modern Standard Arabic or simply to a high register of Makkan Arabic is an interesting issue, but one which is beyond the scope and aims of this thesis. My informal observation as a speaker of the dialect is that there is a high register that speakers use in semi-formal situation which uses some features of Modern Standard Arabic, mainly some sounds and structures but not case endings. This high register is different from speaking in Modern Standard Arabic, when the speakers would consciously add case endings, though sometimes inappropriate ones. My intuition is that as a native speaker of Makkan Arabic, I would be able to use ACs both when using the high register and when using Modern Standard Arabic. However, when using the high register, ACs sound almost like frozen phrases or quotes. This is an intriguing issue but one which I leave for future research.

5.2.1 Data and Patterns

I use the term *Adjectival Compound* to refer to structures which consist of an adjectival head and a genitive DP. In this section, I will explain the main characteristics of this structure. I will first show how it is used and the meanings and relations it conveys, and then I will illustrate the special patterns and characteristics of the Arabic AC.

5.2.1.1 Usage and Meaning

Though complex in structure, these constructs function in a similar way to simplex adjectives in Arabic. The AC can function as either a postnominal or a predicative adjective, as shown in (5) and (6), respectively.

- (5) haadihi fataatu-n jameelatu al-wajhi. (MSA)
 this(f) girl(f-s-nom) (ind) beautiful(f-s-nom) the face(m-s-gen)
 “This is a girl with a beautiful face.”

- (6) hia jameelatu al-wajhi. (MSA)
 she beautiful(f-s-nom) the face(m-s-gen)
 “She has a beautiful face”

When this structure functions as a postnominal modifier, the head adjective behaves like any simplex postnominal adjective in Arabic. As explained in §2.4, postnominal adjectives agree with the nouns they modify in number, gender, case and definiteness. As shown in (5), the head of the AC agrees with the preceding noun in all of these features. The examples in (7) show that lack of agreement between the head of the AC and the preceding noun in any of these features results in ungrammaticality.

- (7) a. * fataatu-n jameelu al-wajhi (MSA)
 girl(f-s-nom) (ind) beautiful(m-s-nom) the face(m-s-gen)
 “a girl with the beautiful face”
- b. * fataatu-n jameelaatu al-wajhi (MSA)
 girl(f-s-nom) (ind) beautiful(f-p-nom) the face(m-s-gen)
 “a girl with the beautiful face”
- c. * fataatu-n jameelata al-wajhi (MSA)
 girl(f-s-nom) (ind) beautiful(f-s-acc) the face(m-s-gen)
 “a girl with the beautiful face”

- d. * al-fataatu jameelatu al-wajhi (MSA)
 the girl(f-s-nom) beautiful(f-s-nom) *the* face(m-s-gen)
 “the girl with the beautiful face”

The only difference between the agreement facts of the head of the AC and simplex adjectives is the fact that the head adjective in the AC can never bear nunation, the indefiniteness article, as shown in (8). To mark indefiniteness, the head of the AC would be simply used without any determiner.

- (8) fatatu-n jameelatu(*-n) al-wajhi (MSA)
 girl(f-s-nom) (ind) beautiful(f-s-nom) (ind) *the* face(m-s-gen)
 “a girl with a beautiful face”

However, when the AC modifies a definite noun, the definite article *must* be attached to the head of the AC, as shown in (9).

- (9) al-fatatu *(al)-jameelatu al-wajhi (MSA)
 the girl(f-s-nom) *the* beautiful(f-s-nom) *the* face(m-s-gen)
 “the girl with a beautiful face”

This pattern is unexpected because it fits with neither the form of the structure as a Construct State nor with its function as a modifier. On the one hand, heads of Construct States cannot have either the definite article or nunation affixed, as explained in chapter 4. On the other hand, modifiers can have both the definite article and nunation affixed to them. The behaviour of the head of the ACs is a mixture of the behaviour of Construct States and modifiers in the sense that one determiner is used but not the other. Kremers (2005) claims that this is due to the mixed nature of the structure, without explaining precisely how this works.

When the AC functions as a predicative adjective, its head behaves like any Arabic predicative adjective; it agrees with the subject in number and gender and nominative case is checked on the head adjective (10).

- (10) haḍa at-ṭaalibu ʿaḍbu aṣ-ṣawti. (MSA)
 this(m-s) *the* student(m-s-nom) *sweet*(m-s-nom) *the* voice(m-p-gen)
 “*This* student has a *sweet* voice.”

Lack of agreement in gender (11a) or number (11b) results in ungrammaticality.

- (11) a. *haḍa aṭ-ṭaalibu ʿaḍbatu aṣ-ṣawti.
 this(m-s) the student(m-s-nom) sweet(f-s-nom) the voice(m-s-gen)
 (MSA)

“This student has a sweet voice.”

- b. *haḍa aṭ-ṭaalibu ʿiḍabu aṣ-ṣawti.
 this(m-s) the student(m-s-nom) sweet(m-p-nom) the voice(m-p-gen)
 (MSA)

“This student has a sweet voice.”

Moreover, like any other Arabic predicative adjective, in the absence of an overt copula the head of the AC cannot bear the definite article (12a). In such a situation simple adjectival modifiers must be nunated, but because of the special properties the Adjectival Compound and its incompatibility with the overt indefinite article, the head cannot be nunated (12b). However, if an overt copula is used, the head must carry the definite article (12c).⁴

- (12) a. haḍa aṭ-ṭaalibu (*al-)^caḍbu aṣ-ṣawti.
 this(m-s) the student(m-s-nom) the sweet(m-s-nom) the voice(m-s-gen)
 (MSA)

“This student has a sweet voice.”

- b. haḍa aṭ-ṭaalibu ʿaḍbu(*-n)
 this(m-s) the student(m-s-nom) sweet(m-s-nom) (ind)
 aṣ-ṣawti. (MSA)
 the voice(m-s-gen)

“This student has a sweet voice.”

- c. haḍa aṭ-ṭaalibu hoa *(al)-^caḍbu
 this(m-s) the student(m-s-nom) be(m-s) the sweet(m-s-nom)
 aṣ-ṣawti. (MSA)
 the voice(m-s-gen)

“This student is the one with a sweet voice.”

However, although the agreement and definiteness facts indicate that the head adjective is modifying an external noun (the preceding noun when AC is a postnominal modifier or the subject of the sentence when the AC is used as a predicate), the

⁴For arguments that *hoa* in (12c) is an overt copula see Fassi-Fehri (1993a), Rapoport (1985) and Rothstein (1995).

meaning indicates that what is modified is actually the genitive phrase following the adjective. For example, (13) is used to indicate that the girl's eyes are black, not the girl herself. Nevertheless, the adjective *sawdaaʔu* "black" does not agree with *al-^cainaini* "the eyes", but with the external nominal *fataatu-n* "a girl".

- (13) *fataatu-n* *sawdaaʔu* *al-^cainaini* (MSA)
 girl(f-s-nom) (ind) black(f-s-nom) the eyes(f-d-gen)
 "a girl with black eyes"

This is a very important property of ACs and one which any account of this structure needs to explain. The head agrees with an external noun while semantically modifying the genitive phrase.

To summarise, the Adjectival Compound functions as either a postnominal or a predicative adjective. In both cases, the head adjective shows agreement with the externally modified noun whereas the meaning indicates that it actually modifies the genitive phrase. In the next section, I will focus on the properties of this genitive phrase, mainly the restrictions imposed on it.

5.2.1.2 The Genitive Phrase

There are some restrictions on the range DPs which can be used as the genitive component in the Adjectival Compound. The literature studying the corresponding Hebrew structure repeatedly points out that this structure is limited to inalienable possession, excluding family relations (Siloni, 2000, 2002; Kim, 2002; Hazout, 2000). This is shown in the following Hebrew examples (Siloni 2000: 305-306).

- (14) a. *yalda yefat* *'eynayim/se'ar* (MH)
 girl beautiful eyes/hair
 "a girl with beautiful eyes/hair"
- b. **yalda yefat* *'ofana'im/mexoni/bayit* (MH)
 girl beautiful bicycle/car/house
- c. *xadarim gvohey tikra* (MH)
 rooms high ceiling
 "high-ceiling rooms"

- d. sira gvohat toren (MH)
 boat high mast
 “a high-masted boat”

- (15) *yalda yefat 'axot/'em/savta (MH)
 girl beautiful sister/mother/grandmother

The work based on such Hebrew data usually attempts to explain the argument structure of the AC on the basis of this generalisation. Generally, such analyses relate the fact that only inalienable nouns are allowed as genitive components to the fact that the noun the adjectival head agrees with is actually not the noun it modifies. The way Siloni (2000), Hazout (2000) and Kim (2002) analyse this structure involves externalisation of an internal argument of the inalienable noun. Their analyses share the idea that inalienable nouns have an internal argument which specifies the whole of which they are an inalienable part. The derivation of the Adjectival Construct, as it is called in the literature, somehow involves changing the internal argument of the inalienable noun into an external argument for the adjective, thus explaining the double relationship between the adjective and the genitive phrase on the one hand and the adjective and the external noun on the other.

However, not all of these generalisations extend to Arabic. Although not any DP can be used as a genitive phrase following an AC head, it is not true that the possibilities are restricted to only inalienable nouns, as the examples in (16) and (17) show.

- (16) a. rajolu-n ḍaʔiʕu aṣ-ṣeeti (MSA)
 man(m-s-nom)(ind) famous(m-s-nom) the reputation(m-s-gen)
 “a famous man”
- b. rajolu-n ʕaali al-himmatu (MSA)
 man(m-s-nom) (ind) high(m-s-nom) the will(f-s-gen)
 “a man with a strong will”
- (17) a. *waladu-n ḍakiu al-ʔabawaini (MSA)
 a boy(m-s-nom) clever(m-s-nom) the parents(m-d-gen)
 “a boy with clever parents”
- b. *rajolu-n jadeedu as-saiarati (MSA)
 man(m-s-nom) (ind) new(m-s-nom) the car(f-s-gen)
 “a man who has a new car”

- c. * †iflu-n nadheefu al-ḡorfati (MSA)
 child(m-s-nom) (ind) clean(m-s-nom) the room(f-s-gen)
 “a child with a clean room”
- d. †iflu-n nadheefu aṭ-ṭiabi (MSA)
 child(m-s-nom) (ind) clean(m-s-nom) the clothes(m-p-gen)
 “a child with clean clothes”

Comparable to the Hebrew facts, family relations are an exception to the availability of genitive phrases that are inalienable with respect to the head (17a). Again as in Hebrew, some alienable nouns are impossible, such as *saiara* “car” and *ḡorfa* “room” in (17b) and (17c). In contrast, some other alienable nouns are possible, as shown in (17d). Moreover, the distinction is not simply one of abstract vs. concrete nouns because as (17d) shows, permitted combinations include some concrete nouns.

Kremers (2005) also points out that the restriction on the genitive components in ACs is different in Arabic and attempts to give an alternative generalisation. He claims that the relationship between the external noun and the genitive DP is that the genitive DP is always “some property or integral part of the head noun” (Kremers 2005: 341). He cites the examples in (18) (Kremers 2005: 340-341).

- (18) a. baitu-n kaṭeeru al-ʔaboabi (MSA)
 house(m-s-nom) (ind) many(m-s-nom) the doors(m-s-gen)
 “a house with many doors” (lit. “a house many of doors”)
- b. ar-rajolu al-ʕatheemu al-ḥathi (MSA)
 the man(m-s-nom) the great(m-s-nom) the fate(m-s-gen)
 “the man who is very lucky” (lit. “the man great of fate”)
- c. ʔaataaru-n baaliḡatu al-xoṭoorati (MSA)
 effects(m-p-nom) (ind) extreme(f-s-nom) the danger(f-s-gen)
 “extremely dangerous effects” (lit. “effects extreme of danger”)
- d. aš-šarikaatu al-motaʕadidatu al-jinsiaati
 the companies(f-p-nom) the multiple(f-s-nom) the nationalities(f-p-gen)
 (MSA)
 “the multinational companies” (lit. the companies multiple of nationalities”)

Kremers argues that the genitive DP is an attribute of the adjective in the sense of Higginbotham (1985), specifying the aspect of the modified noun to which the

adjective applies. Kremers adopts and slightly adapts Higginbotham's (1985) idea of an *attribute* internal argument for adjectives. I will briefly explain Higginbotham's proposal and then show how Kremers adapts it to explain the restrictions on the Arabic AC.

Higginbotham (1985) extends to adjectives Davidson's (1967) proposal for taking adverbs to be predicated of events with respect to some attribute. Higginbotham proposes that attributive adjectives take an attribute argument, which is the same as the noun they modify, whereas predicative adjectives take their attributes from the context. He proposes that this is what makes sentence (19) true when (20) could be false (Higginbotham 1985: 565).

(19) That is a big butterfly.

(20) That butterfly is big.

According to Higginbotham, the attribute of the adjective *big* in (19) is being a butterfly, and the sentence would be true if it is used to describe a butterfly which is big in comparison to other butterflies. On the other hand, sentence (20) is weird because the attribute is taken from the context, which could be other animals or living creatures, and butterflies are not big in comparison to other members of the animal kingdom.

Kremers (2005) proposes that the genitive component in the AC is an overt attribute in the sense of Higginbotham (1985), but that it does not refer to the modified noun, but rather to a subproperty of the noun. However one potential problem for Kremers's proposal is the fact that the AC can also be used as a predicative adjective. According to Higginbotham (1985), predicative adjectives take their attribute from the context, not from the noun they modify. When an AC is used as a predicative adjective, the genitive phrase is still closely associated with the noun the AC modifies. For example, the ungrammatical cases in (17) are not better if used predicatively.

It has also been noted in the literature that the genitive phrase in Semitic ACs cannot itself be a Construct State and that these phrases cannot be modified. This applies to both Hebrew, as explained by Hazout (2000), Kim (2002) and Siloni (2000), and Arabic, as illustrated in (21).

- (21) a. *fataatu-n ^caḍbatu naḡamati aṣ-ṣawti
 girl(f-s-nom) (ind) sweet(f-s-nom) tone(f-s-gen) the voice(m-s-gen)
 (MSA)

“a girl with a sweet tone of voice”

- b. *fataatu-n ^caḍbatu aṣ-ṣawti
 girl(f-s-nom) (ind) sweet(f-s-nom) the voice(m-s-gen)
 al-jameeli (MSA)
 the nice(m-s-gen)
 “a girl with a sweet, nice voice”

The analyses which assume the externalisation of the internal argument of the inalienable noun explain this by claiming that if the genitive phrase (inalienable noun) in the AC is itself in construct, the genitive phrase of this construct will fill the position of the internal argument of the inalienable noun and thus that argument will not be available for externalisation, as shown in (22). However, if there is no genitive phrase to fill the argument position of the inalienable noun, this argument position will become an argument of the head of the AC, allowing the whole AC to function as a modifier, as shown in (23).

- (22) External Noun [Adjective [Inalienable Noun () Genitive Phrase]]

- (23) a. External Noun [Adjective () Inalienable Noun <()>]
 b. External Noun [Adjective () Inalienable Noun]

Nevertheless, such accounts cannot explain why the genitive phrase in this case cannot be modified. Modification is not expected to have the same structural role as that of an argument, and therefore the explanation provided by these accounts for why the genitive phrase in the AC cannot be a Construct State cannot be extended to explain why this phrase cannot be modified. Kim (2002), who proposes an analysis where both syntax and morphology access the same structures, claims that if the inalienable noun is complex in structure (modified or in construct) it is not possible for it to participate in the morphological operation of construct formation.

Nevertheless, although the genitive phrase in the AC can only be a simple unmodified DP, this phrase can actually involve co-ordination, as shown in (24).

- (24) fataatu-n jameelatu aš-ša^cri wa
 girl(f-s-nom) (ind) beautiful(f-s-nom) the hair(m-gen) and
 al-^cainaini (MSA)
 the eyes(m-d-gen)
 “a girl with beautiful hair and eyes”

Moreover, the genitive phrase is not referential, as pointed out by Siloni (2000) about Hebrew, and shown in the Arabic example in (25), where it is not possible to refer back to the genitive phrase *aš-ša^cri* “the hair” (Kremers 2005: 345).

- (25) daxalat al-ğurfata bintu-n jameelatu
 entered(3rd-f-s) the room(f-s-acc) girl(f-s-nom) (ind) beautiful(f-s-nom)
 aš-ša^cri. ?? kaana †aweela-n wa
 the hair(m-gen) was(3rd-m-s) long(m-s-acc) (ind) and
 †aswada-n. (MSA)
 black(m-s-acc) (ind)
 “A girl with beautiful hair entered the room. ?? It was long and black.”

To summarise then, the genitive component in the AC is restricted in both its semantic relation to the external noun and the complexity of its structure. In Arabic, the semantic restriction is not limited to inalienable nouns, unlike the situation in the comparable Hebrew structure. The genitive phrases in ACs can be co-ordinated but not modified or in Construct State, and these phrases are not referential. I will explain these restrictions on the genitive component in the course of my account of the AC in §5.2.2.3.

5.2.1.3 The Head Adjective, Definiteness Marking and Modification

The head of the AC is characterised by a mixture of adjectival and Construct State properties. This adjective undergoes the same phonological alteration seen in Nominal Constructs, as shown in (26). The final *-t* which is dropped in some contexts is obligatory when the adjective is the head of an AC.

- (26) jameela*(t)u al-wajhi (MSA)
 beautiful(f-s-nom) the face(m-s-gen)
 “beautiful in the face”

Moreover, the position of the modifiers of the head adjectives is consistent with the pattern seen in Nominal Construct States (§4.2). The head adjective in ACs can be

modified by a degree adverb, and as expected this degree adverb can only come to the right of the genitive phrase (27); it may not directly follow the head adjective (28).

(27) waladu-n jameelu al-wajhi jiddan (MSA)
 boy(m-s-nom) (ind) beautiful(m-s-nom) the face(m-s-gen) very
 “a boy with a very beautiful face”

(28) * waladu-n jameelu jiddan al-wajhi (MSA)
 boy(m-s-nom) (ind) beautiful(m-s-nom) very the face(m-s-gen)
 “a boy with a very beautiful face”

These modification facts also reflect the mixed nature of this structure. The available modifiers are typically used with adjectives and the position of these modifiers is the one typical of Construct States.

Another aspect which sheds light on the mixed nature of this structure relates to the fact that the definite article must be affixed onto the head of the AC in some cases, as explained earlier (§5.2.1.1). If the external noun the AC modifies is definite, the head of the AC must have the definite article.

(29) al-^caroosu *(ar)-raaʔiʕatu al-madħhari
 the bride(f-s-nom) the fascinating(f-s-nom) the appearance(m-s-gen)
 (MSA)

“the fabulous-looking bride”

This is unexpected in a Construct State because in typical constructs the head noun can never bear any article and semantically definiteness spreads from the genitive phrase to the whole Construct State, as explained in §4.2. In Nominal Construct States, if the genitive DP is definite, the whole Construct State behaves as a definite DP. This is especially clear when an adjective modifies the head noun. If the genitive phrase is definite, an adjective modifying the head noun must carry the definite article even though the head itself does not have one.

(30) waladu al-modarrisati aṣ-ṣaġeeru (MSA)
 son(m-s-nom) the teacher(f-s-gen) the young(m-s-nom)
 “the teacher’s young son”

If the same mechanism of definiteness spread were taking place in adjectival constructs, one would expect that when the genitive phrase in an AC is definite, the definite article would neither need nor be able to appear on the head adjective and that the AC would be definite as a result of definiteness spread. As example (29) shows, this is not the case. Despite the genitive phrase being definite, the definite article is still affixed onto the head of the AC.

In Hebrew, however, definiteness spread of the type seen in Nominal Construct States does take place in Adjectival Constructs; when an AC is functioning as an attributive adjective to a definite noun, for example, the head adjective does not carry the definite article, but the genitive phrase must, as shown in the examples in (31) (Hazout 2000: 32).

- (31) a. ha- na'ara [Sxorat ha- se'ar] (MH)
 the girl black the hair
 "the girl black of hair"
- b. * ha- na'ara [ha- Sxorat se'ar] (MH)
 the girl the black hair

Thus the definiteness of the AC in Hebrew is based upon the definiteness of the genitive phrase. This is one major difference between Arabic and Hebrew ACs. Therefore, the Hebrew AC seems to have more of the properties of Construct States than the Arabic one. While it might be correct to refer to these structures as constructs in Hebrew, the Arabic ones are not constructs, as I will argue later.

Actually, there is evidence that in Arabic the definiteness of the whole Adjectival Construct is independent of that of the genitive DP. As can be seen from many of the Arabic examples above, both the head adjective and the genitive phrase can be marked definite, as in (29). If definiteness spread did take place, this would mean that there is double marking of definiteness. In addition, ACs may be indefinite despite including a definite genitive phrase, as in (32). The external noun is indefinite and no marking is present on the head adjective.

- (32) fataatu-n ʿaḏbatu(*-n) aṣ-ṣawti (MSA)
 girl(f-s-nom) (ind) sweet(f-s-nom) (ind) the voice(m-s-gen)
 "a girl with a sweet voice"

Although the genitive DP is definite, the whole structure is grammatical, indicating that definiteness spread does not take place in such cases. If it did, the adjectival Construct would be definite, which would be violating the noun-adjective agreement requirement in Arabic.

Another argument that definiteness spread does not take place in Arabic ACs relates to the meaning of these constructions. Using the AC indicates a permanent, habitual or intrinsic association between the noun described and the quality the AC expresses. For example, to describe someone as having good manners as a typical quality, an AC would be used, as in (33). However, to indicate that a person behaved politely on a particular occasion without necessarily implying that good behaviour is a characteristic of that person, a simple postnominal attributive adjective should be used (34).

(33) *ṭaalibu-n ḥasanu al-xoloqi* (MSA)
 student(m-s-nom) ind good(m-s-nom) the morality(m-s-gen)
 “a well-behaved student”

(34) *taʿaamala maʿ-i bi-xoloqi-n ḥasani-n.* (MSA)
 dealt(3-m-s) with me with morality(m-s-gen) ind good(m-s-gen) ind
 “He treated me well.”

These uses suggest that the definite article on the genitive phrase in (33) has a generic rather than a specific interpretation. The definite article is sometimes clearly generic in cases like (33), but in some other cases the determiner appears to have a specific interpretation as in (35).

(35) *rajolu-n ṭaweelu al-qaamati* (MSA)
 man(m-s-nom) ind tall(m-s-nom) the height(f-s-gen)
 “a tall man”

The genitive phrase *al-qaamati* “the height” might be interpreted as specific because it is the height of one person. However, as the English translation of (35) shows, this genitive phrase is simply specifying that the meaning of the adjective *ṭaweelu* “tall” relates to how tall the person is, as opposed to how tall his hair is for example. Thus, it is restricting the range of the possible objects the adjective might apply to. In this sense, I claim that the definite article in (35) is generic as well. As such, I claim that

the definiteness of the genitive phrase is independent of the definiteness of the whole AC because the definite article on the genitive phrase does not actually relate to the definite vs. indefinite distinction. I will provide more support for this claim in the context of my analysis of Arabic Adjectival Compounds in §5.2.2.2 below.⁵

An important issue to consider when investigating the definiteness behaviour of the Adjectival Compounds is the fact that indefiniteness is not marked by nunation but simply by lack of an overt determiner, as shown in (35). This is unexpected because the definite article can be used on the head of the AC. I will propose an approach to nunation in adjectives in §5.2.2.2 below which explains this discrepancy between the behaviour of the two determiners in ACs.

5.2.1.4 Summary

This section presented a comprehensive description of the behaviour of Arabic Adjectival Compounds. This structure is intriguing because its syntactic behaviour gives conflicting clues about its nature. Some properties suggest that it is adjectival while others suggest that it is a Construct State, and this mixed nature is the source of the term Adjectival Construct which is often used in the literature. However, the AC does not have all the basic properties of Construct States. The head of the AC does take the definite article and definiteness spread does not take place, which is contrary to the behaviour of Nominal Construct States. The range of possible genitive phrases in ACs is restricted, but unlike the situation in Hebrew ACs, this restriction is not very

⁵An obvious question to answer in this context is whether the genitive DP in the Adjectival Compound can be nunated. If it can, the claim that the genitive phrase in these constructs is generic would have to be modified to accommodate nunation. However, the data I have looked at and the judgements I collected indicate that the definite article actually is the only possible determiner in the genitive components of Arabic Adjectival Constructs. Structures like (1) are very questionable and at best sound archaic.

- (1) ?? rajolu-n kaṭeeru maali-n (MSA)
 man(m-s-nom) ind many(m-s-nom) money(m-mass-gen) ind
 “a rich man”

Thus, I will assume that the definite article is the only possible determiner on the genitive phrase in the AC.

clear cut. Moreover, the head adjective semantically modifies the following genitive phrase but syntactically agrees with a nominal external to the AC itself. In the next section, I will propose an approach to this structure which can accommodate all the properties and patterns explained here. I will argue that the behaviour of the AC can best be explained if this structure is a complex adjective - an adjectival compound.

5.2.2 Proposed Analysis

The Adjectival Compound is the most studied type of Adjective-Headed DPs. However, the most discussed properties of the Semitic ACs are actually properties which are available in Hebrew but do not carry over to Arabic. One of these is the fact that the genitive phrases in the AC in Hebrew are limited to inalienable possession nouns, or more specifically body parts. However, as shown in §5.2.1.2 above, this does not apply to Arabic. Moreover, the behaviour of determiners differs in Hebrew and Arabic ACs. Contrary to the Arabic patterns, no determiners can be affixed onto the head of the Hebrew AC and definiteness spreads from the genitive phrase to the whole AC. Therefore, the analyses proposed for the Hebrew AC cannot be applied to Arabic because they are based upon facts not found in Arabic (Hazout, 2000; Kim, 2002; Siloni, 2000, for example).

In this section, I will propose an approach to these construct-like adjectival structures treating them as adjectival compounds. This approach explains the unusual mixture of properties described in §5.2.1. I will first emphasise the status of the AC as an adjectival and then argue for its status as a Construct-State-like compound based on the properties of compounds proclaimed by Borer (1988). I will then explain how this structure is formed and give a semantic representation of the AC which explains some of the restrictions of the type of the genitive phrases. I will also claim that the process needed to form these adjectival compounds is not a part of the grammar of Makkan Arabic and that this explains why the use of this structure is very limited in this variety.

5.2.2.1 The Construct-Like Compound

The Arabic Adjectival Compound behaves very similarly to simplex Arabic adjectives. The AC can be used postnominally and predicatively to modify a nominal, the AC head agrees with the noun the AC modifies in number, gender, case and definiteness and the adjectival head can be modified with degree adverbials. One main difference between simplex adjectives and the head of the AC is the category each takes as an argument. On the one hand, complements of adjectives not in Construct State are introduced by a preposition, as shown in (36).

- (36) faxooru-n bi-ʔabnaaʔi-hi (MSA)
 proud(m-s-nom) ind of sons(m-p-gen) his
 “proud of his sons”

On the other hand, in ACs the head adjective is followed by a genitive DP, which can be seen as an argument. Another difference between simplex adjectives and the head of the AC is the fact that the former can be nunated while the latter cannot. Nevertheless, I assume that the AC is an adjectival structure and these two peculiar patterns fall out from the status of the AC as a complex structure. I will explain this in more detail after presenting my proposal.

Although the head adjective of the AC has most of the morphological and syntactic properties of a simplex adjective with regard to agreement and modification, the AC as a whole involves some construct-like complex internal syntactic structure. The head is followed by a genitive DP and modifiers of the head come after this genitive phrase. Thus, I am going to propose that the AC is an internally complex adjective functioning as a simplex adjective. In other words, it is an adjectival compound.

Compounds in Arabic have a very similar form to Construct States. Nominal compounds consist of two constituents: a head noun and a genitive DP. Consider the Modern Standard Arabic compounds in (37).

- (37) a. dooru al-ʿibaadati (MSA)
 houses(m-p-nom) the worship(f-s-gen)
 “places of worship”

- b. dooru al-^cilmi (MSA)
 houses(m-p0nom) the knowledge(m-s-gen)
 "schools"
- c. rabbu al-ʔosrati (MSA)
 owner(m-s-nom) the family(f-s-gen)
 "the man of the house"

Structurally, these nominal compounds are very similar to Construct States in the fact that there is a head noun which is followed by a genitive phrase. However, there are subtle differences between such compounds and Nominal Construct States of the type discussed in chapter 4. Borer (1988) formulates some criteria in order to distinguish proper Construct States from Hebrew compounds, which also exhibit construct-like behaviour. I will explain her system and then show that if Adjectival Constructs are considered adjectival compounds, their special behaviour can straightforwardly be accounted for.

Borer (1988) uses Hebrew data to illustrate her ideas, but because Hebrew and Arabic Nominal Construct States are very similar, I will assume that her criteria apply to Arabic as well. She uses the criteria in (38) to distinguish between Nominal Construct States and compounds:

- (38) a. Modification of the genitive phrase is allowed in Construct States but not compounds.
- b. Conjunction of the genitive phrase is allowed in Construct States but not compounds.
- c. It is possible to refer to the genitive phrase in the Construct State using a pronoun but it is not possible to refer to the genitive phrase in the compound.
- d. The meaning of the Construct State is compositional, but the meaning of the compound is not.

To illustrate these properties with regard to nominal compounds, consider the data in (39).

- (39) a. * rabbu al-ʔosrati as-a^ceedati (MSA)
 owner(m-s-nom) the family(f-s-gen) the happy(f-s-gen)
- b. * rabbu al-ʔosrati wa al-manzili (MSA)
 owner(m-s-nom) the family(f-s-gen) and the house(m-s-gen)
- c. haada rabbu al-ʔosrati. * hia sa^ceedatu-n.
 this(m-s) owner(m-s-nom) the family(f-s-gen) she happy(f-s-nom) ind
 (MSA)

“This is the man of the house (of the family). It is a happy family”

These examples illustrate the first three criteria in (38). The genitive phrase in a compound cannot be modified (39a), co-ordinated (39b) or referred to with a pronoun (39c). Moreover, the meaning of all the compounds in (37) is not strictly compositional. This is especially clear in (37c), where the combination of *rabbu* “owner” and *al-ʔosrati* “the family” is not used to refer to someone who owns a family but rather someone who is responsible for the welfare of a family.⁶

I assume that if Adjectival Compounds are comparable to nominal compounds, as I would like to claim, the same restrictions on the genitive phrase and compositionality should apply to both structures. It was shown in §5.2.1.2 that the restrictions on the genitive phrase described in (38a) and (38c) apply to genitive component in the AC; the genitive DP cannot be modified and it is not referential ((21b) repeated here as (40), and (25) (Kremers 2005: 345) repeated here as (41)).

- (40) * fataatu-n ^caḍbatu aṣ-ṣawti al-jameeli
 girl(f-s-nom) (ind) sweet(f-s-nom) the voice(m-s-gen) the nice(m-s-gen)
 (MSA)

“a girl with a sweet, nice voice”

⁶Borer (1988) uses an additional criterion which states that derived nominals which are heads of Construct States appear with either their logical subject or object whereas derived heads of compounds may only appear with their objects. I was not able to find Arabic compounds with derived nominals as heads. Therefore, I cannot comment on whether or not this criterion applies to Arabic.

- (41) daxalat al-ğorfata bintu-n jameelatu
 entered(3rd-f-s) the room(f-s-acc) girl(f-s-nom) (ind) beautiful(f-s-nom)
 aš-ša^cri. ?? kaana taweela-n wa
 the hair(m-gen) was(3rd-m-s) long(m-s-acc) (ind) and
 ?aswada-n. (MSA)
 black(m-s-acc) (ind)
 “A girl with beautiful hair entered the room. ?? It was long and black.”

However, the criterion in (39b) which states that the genitive phrase in a compound cannot be co-ordinated seems not to apply to the AC because it is possible for the genitive phrase in ACs to involve co-ordination, as shown in (24) repeated here as (42).

- (42) fataatu-n jameelatu aš-ša^cri wa
 girl(f-s-nom) (ind) beautiful(f-s-nom) the hair(m-gen) and
 al-^cainaini (MSA)
 the eyes(m-d-gen)
 “a girl with beautiful hair and eyes”

However, I claim that this is not problematic. One reason for this claim is that some Arabic compounds can actually take co-ordinated genitive phrases, as in (43).

- (43) ?ahlu as-sunnati wa al-jamaa^cati
 people(m-mas-nom) the example(f-s-gen) and the community(f-s-gen)
 (MSA)

“the Sunni Muslims”⁷

Moreover, Borer notes that the genitive phrases in compounds can be either singular or plural, and she claims that the plurality of these phrases is semantically and syntactically irrelevant. That is, it does not significantly contribute to the meaning of the compound. As Borer puts it, “[h]ouse book’ could have meant ‘library’ just as much as ‘house books’, and vice versa.” (Borer 1988: 55). I claim that co-ordination in the genitive components of Arabic compounds is comparable to plurality in Borer’s argument. The genitive phrase in a compound may be singular or plural. Being plural might either mean being a normal plural which consists of two or more of the same

⁷The use of “example” in the glosses refers to the examples and practices set by the Prophet Mohammad (pbuh) and “community” is to refer to following the opinion of the majority of the senior scholars.

item or it might mean having two different items which constitute a whole. For example, the AC in (44a) attributes the quality of being big to two *similar* parts of the body “eyes”, whereas the AC in (44b) describes two *different* parts of the body as being big “mouth and nose”.

- (44) a. kabeeru al-^cainaini (MSA)
 big(m-s-nom) the eyes(f-p-gen)
 “big in the eyes”
- b. kabeeru al-fami wa al-ʔanfi (MSA)
 big(m-s-nom) the mouth(m-s-gen) and the nose(m-s-gen)
 “big in the mouth and nose”

I claim that each genitive phrase contributes the same semantic role to the meaning of the whole compound, regardless of whether it is plural or co-ordinated

The last criterion in (38) states that the meaning of compounds is not compositional in the way that the meaning of a Construct State is. I claim that the meaning of the AC is not strictly compositional, which would be predicted if the AC is a compound. However, this lack of strict compositionality is less clear in the case of ACs than it is in the case of nominal compounds. I will first discuss the difference in compositionality between the meaning of Nominal Construct States on the one hand and nominal compounds on the other. I will then show that the meaning of an AC fits better with the meaning of the nominal compounds rather than with the clearly compositional meaning of the Construct State.

Consider first the Makkan Arabic Construct State in (45).

- (45) bait al-bint (MA)
 house(m-s) the girl(f-s)
 “the house of the girl”

The meaning of (45) is strictly compositional because the resulting meaning still has two separate entities: there is a house, there is a girl, and the house belongs to the girl. The Construct State puts the two entities in relation to one another. Now, consider the Makkan Arabic nominal compound in (46).

- (46) bait al-ma (MA)
 house(m-s) the water(m)
 “the bathroom”

The meaning of (46) is not compositional in the same sense (45) is; there is no entity “house” and another entity “water”, but there is one entity “bathroom”. The meaning, however, is still related to the two parts of the compound, in the sense that the bathroom is a place (house) where water is normally used. Although the meaning of the compound does not consist of simply relating one of the components to the other, it is easy to see what each component contributes to the meaning of the whole.

Now consider the Adjectival Compound in (47).

- (47) *ṭaweelu* *al-liḥiati* (MSA)
 long(m-s-nom) the beard(f-s-gen)
 “having a long beard”

The meaning of the AC in (47) does not consist of the combination of the quality of being long (or tall) with the quality of having a beard. This AC cannot be used to describe a tall man who also has a beard. It is rather used to refer to one quality and that quality is having a long beard. In other word, one constituent of the compound has been used to limit the possible referents of the other. The phrase *al-liḥiati* “the beard” helps to specify that it is not the quality of being long which is used as a description but it is the quality of *having a long beard*. Thus, the two parts of the AC contribute to forming one semantic entity - one quality. In this sense, the meaning of the AC is more comparable to the meaning of the nominal compound in (46) because in both cases the two elements of the structure form one semantic entity.⁸

Thus, taking these construct-like adjectival structures to be compounds straightforwardly accounts for some of the restrictions on the genitive phrase. However, it still remains to be shown whether this compound treatment would account for other

⁸The last criterion used by Borer about the thematic restriction on the genitive phrases in compounds, which I referred to in footnote 6, cannot be literally applied to the Adjectival Compound. However, the restriction on the relationship between the genitive phrase in the AC and the external noun, discussed in detail in §5.2.1.2, might present a parallel context to the one discussed by Borer. This is clearer in Hebrew than in Arabic because in Hebrew the genitive phrase in the AC must be an inalienable noun. Although Arabic does not strictly use the same restrictions, not any DP can be used in the position associated with those genitive phrases. Thus, if this criterion is taken to suggest that the first element of the compound imposes some kind of thematic restriction on the second, the AC data seem to conform to this generalisation.

major properties of this structure. In the rest of this section, I will explain how the AC agrees with the noun it modifies. Moreover, I will show how treating these structures as compounds explains why the definite article, but not nunation, can be used on the head adjective and why definiteness spread does not take place in this structure. I will also explain how the thematic restriction on the type of the genitive phrase in Arabic can be accounted for in a way which ties in with the way the AC is formed.

5.2.2.2 Agreement Marking

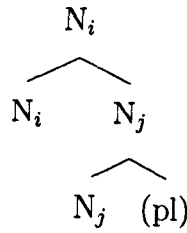
The head adjective in the Adjectival Compound agrees with the external modified noun in number, gender, case and definiteness. As I explained in §5.2.1.1, the agreement indicates that the head modifies the external noun, whereas the meaning indicates that the genitive phrase is the modified noun. However, in the preceding discussion about the compositionality of the meaning of ACs, I argued that the two parts of the AC - the head and the genitive phrase - form a complex property. Thus, I claim here that it is the property denoted by this complex adjectival which is used to modify the external noun, not only the head. For example, the AC in (47) can be used to describe someone as having a long beard, not as being long (or tall).

- (48) rajolu-n ʔaweelu al-lihiati (MSA)
 man(m-s-nom) ind long(m-s-nom) the beard(f-s-gen)
 “a man with a long beard”

The agreement required between Arabic adjectives and the nouns they modify is shown on the head of the AC. In order to explain this, I adopt Borer's (1988) account for compounds. Basically, she argues that the head of the compound is accessible to syntax, but the genitive component is not.⁹ She gives the structure in (49) to illustrate her idea. (Borer 1988: 56)

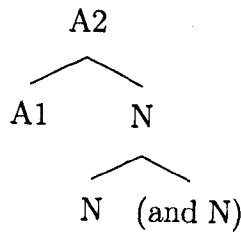
⁹This idea seems to employ the same logic behind syntactic phases proposed by Chomsky (1999). In both cases, only the head (and edge) of a unit can be accessible to outside operations/probes, and the other internal structure is opaque.

(49)



According to her account, only the two N_i s are accessible to syntax, while the rest is opaque to it. A parallel structure representing the AC would be the following.

(50)



Thus, when the AC (adjectival compound) is used as an adjectival, only the head A_1 is accessible to the syntax. That is why the agreement is represented only on the head adjective. More support for the idea that the genitive phrase is opaque to syntax can be found in the fact that the definiteness of the genitive phrase does not have an effect on the definiteness of the whole. As shown in §5.2.1.1, if the AC is modifying a definite DP, the head adjective has to have the definite article, even if definiteness is shown on the genitive phrase.

- (51) al-waladu *(aṭ)-ṭaweelu al-qaamati (MSA)
 the boy(m-s-nom) the tall(m-s-nom) the height(f-s-gen)
 “the tall boy”

Thus, as expected if the genitive phrase is opaque, the definiteness of this phrase has no effect on the definiteness of the whole AC. The anaphoric D projected above adjectives does not get its value from the genitive phrase but rather from the external modified nominal.

However, when the AC modifies an indefinite noun, nunation is not used on the head adjective as shown in (52).

- (52) waladu-n ṭaweelu-(*n) al-qaamati (MSA)
 boy(m-s-nom) (ind) tall(m-s-nom) (ind) the height(f-s-gen)
 “the tall boy”

This is inconsistent with the agreement facts when the AC modifies a definite noun. Why can the definite article but not nunation be used on the head of the AC? I argued in §2.4 that definiteness on adjectives is marked with an anaphoric D which is in an Agree relation with the modified noun. I claim here that this D expresses indefiniteness using nunation only when the phonological environment allows it to. In an AC, there is some kind of phonological unity between the head adjective and the genitive phrase, and I claim that the phonological effect of this unity on the end of the adjective prevents the feature [-def] from being overtly marked, and the lack of definiteness marking would signify indefiniteness.¹⁰ In other words, nunation would break the boundaries between the head and the genitive phrase, and therefore it is not allowed. The same reasoning would explain why adverbial modifiers of the head adjective come after the genitive phrase. Morphologically, it is not possible for any element to intervene between the two constituents of the AC.

The justification I provided for not allowing the head adjective to be nunated and for the modifiers to come to the right of the genitive phrase entails that I assume that morphology plays a part in the formation of the AC. However, I propose that the structure I presented in (50) is inserted as a complex structure from the lexicon. As a result, the genitive phrase would be opaque to syntax, and only the head adjective is syntactically active. After the structure is spelled out, morphology treats that structure as a unit that cannot be interrupted. One obvious question here is how case is checked on the genitive phrase following the adjective. I assume that this is a default case assigned to the second part of (nominal and adjectival) compounds in Arabic. I do not therefore assume that the Construct State D introduced in chapter 4 is projected in this structure. This is rather a complex adjective which functions in the same way any Arabic simplex adjective does.

¹⁰Borer (1988) and Siloni (2001) argue that the Construct State is a phonological word. Because the compound has the same phonological environment as the Construct State, the arguments they present extend to the compound.

5.2.2.3 Restrictions on the Genitive Phrase

One major property to account for when analysing the Adjectival Compound is the fact that the genitive phrase following the head of the AC has to be a part or a property of the external modified noun. I explained before how this structure in Arabic is different from the corresponding structure in Hebrew in that in Hebrew the only possible genitive components in this structure are inalienable nouns, with the exception of family relations which though inalienable may not be used, while in Arabic the genitive component may be an alienable noun, as the examples in (16) and (18) show. It is interesting to note, though, that even in Arabic, the possible genitive components are still limited, and they are in some cases dependent on the head adjective. Consider the following examples.

- (53) a. * ar-rajolu al-jameelu as-saiaarati (MSA)
 the man(m-s-nom) the nice(m-s-nom) the car(f-s-gen)
 “the man with a nice car”
- b. * aṭ-ṭiflu al-qāṣeeru al-ṭaṣḍiqaaʔi (MSA)
 the child(m-s-nom) the short(m-s-nom) the friends(m-p-gen)
 “the child with short friends”
- c. * ṭiflu-n ṭaibu al-ṭabi (MSA)
 child(m-s-nom) ind kind(m-s-nom) the father(m-s-gen)
 “a child whose father is kind”
- d. ṭiflu-n ṭaibu al-qalbi (MSA)
 child(m-s-nom) ind kind(m-s-nom) the heart(m-s-gen)
 “a kind child”
- e. rajolu-n kaṭeeru al-ṭa^cdaaʔi (MSA)
 man(m-s-nom) (ind) many(m-s-nom) the enemies(m-p-gen)
 “a man with many enemies”

Examples (53a) - (53d) seem to support Kim’s (2002) idea, following Baker (1999), that the reason family relation words like “mother” and “father” are not possible as genitive components of this structure, as shown in (53c), is because they are not “co-referential” with the external noun. Whereas *al-qalbi* “the heart” in (53d) can be seen as being “co-referential” with *ṭiflu-n* “a child” because the heart is a part of the child, the same cannot be said for *al-ṭabi* “the father” is not really a part of

the child. Similarly, *as-saiaarati* “the car” and *al-ʔaṣḍiqaaʔi* “the friends” are not parts of *ar-rajolu* “the man” and *aṭ-ṭiflu* the child in (53a) and (53b), respectively. However, example (53e) is grammatical, even though *al-ʔaḍdaaʔi* “the enemies” is not “co-referential” with *ar-rajolu* “the man”. The situation becomes even more complex if we contrast (53e), which is grammatical, with (54), which is not grammatical.

- (54) *rajolu-n ṭaweelu al-ʔaḍdaaʔi
 man(m-s-nom) (ind) tall(m-s-nom) the enemies(m-p-gen)
 “a man with tall enemies”

Substituting the adjective form *kaṭeeru* “with/having many” to *ṭaweelu* “tall” affects the grammaticality of the structure, although the genitive phrases and the modified noun are the same in both cases. The data then give a mixed picture. The general tendency is for the genitive component to be a part of the external nouns, but in some cases this restriction can be overridden. To explain this situation, I propose that the formation of the Arabic AC is basically restricted to nouns which are co-referential with the external noun, but that some adjectives can be followed by different types of nominals and allow them to fit the basic pattern of derivation. I will adopt Kim’s (2002) analysis for the semantic representation of the AC which is limited to taking inalienable genitive phrases, and then propose that Arabic allows type shifting on some genitive phrases and the result would be a representation similar to the one found in cases of inalienable genitive phrases.

Kim (2002) proposes that the adjectival head of the AC has a unique semantic representation as a two-place predicate. He argues that one of the arguments this adjective takes is the inalienable noun, and the result of applying the semantic representation of the inalienable noun to the semantic representation of the adjectival is a one place predicate which can function as a simplex adjective. He proposes the translations (TR), semantic representations, in (56) (Kim 2002: 192) for the Hebrew AC in (55) (Kim 2002: 189).

- (55) ha- na’ara [yefat ha- eynaim] (MH)
 the girl.FM.SG.IND pretty.FM.SG.CS the eye.FM.DL.IND
 “the pretty-eyed girl”

- (56) a. TR(eyes) = $\lambda u \lambda v [\text{eyes}(u)(v)]$

$$b. \text{TR}(\text{pretty.CS eyes}) = \lambda x[\text{pretty}(\iota y[\text{eyes}(x)(y)])]$$

$$c. \text{TR}(\text{pretty.CS}) = \lambda R_{\langle eet \rangle} \lambda x[\text{pretty}(\iota y[R(x)(y)])]$$

One assumption that Kim (2002) makes is that since the form of the head of the AC is different from the form of the corresponding independent adjective, the semantic representation of that form is different too. The translation he gives for that adjectival form takes two arguments: an inalienable noun (R) and another noun (X), as shown in (56c). The inalienable noun (56a) is a relation, or a two place predicate. The two arguments of the inalienable noun are its referent (external argument) and its possessor (internal argument). Substituting the R in the semantic representation of the AC head with the semantic representation of the inalienable noun (56a) gives a one place predicate which takes only one argument (X in (56b)). This complex adjective can then be used as a simplex adjective, but this adjective can only be used to modify an individual who is the “possessor” of the inalienable noun. According to Kim (2002), applying an alienable noun to the representation (56c) is not possible because of the type mismatch.

I propose that the Arabic AC has the same semantic representation as the Hebrew one in (56b). The difference in the case of Arabic is that not all the adjectival heads of the AC have the semantic representation in (56c). Some heads have that translation, and those are the heads which would take only inalienable genitive phrases, such as *taweel* “tall”, as in (54). Some other heads have a different representation in that both the argument they take are individuals, and there is no requirement for one of the arguments to be a relation. An example of that would be *kaṭeer* “with/having many” in (53e). This head would have the semantic representation in (57).

$$(57) \text{TR}(\text{many.CS}) = \lambda z \lambda x[\text{many}(\iota y[z(x)(y)])]$$

Z is replaced with the semantic representation of the alienable noun and the result would be a one-place predicate similar to the one in (56b).

Thus, the key factor in the formation of the Adjectival Compound is for the adjectival form used to be able to take an internal argument and an external one. Once the internal argument is used, the resulting structure becomes a one-place

predicate which can be used as a simplex adjective. I assume that the operation which forms the Adjectival Compound takes place in the lexicon, and the whole AC is considered as one lexical item in the Lexical Array selected. This approach assumes that the lexicon is a complex system where words and complex word-like units, such as the AC, can be derived. Thus, when an AC is used in a given structure, only the features of the whole compound (56b) are accessible to the computational system and later to the interfaces.¹¹

5.2.3 Final Remarks on Adjectival Constructs

Adjectival Compounds are the most widely studied type of Adjective-Headed DPs because their behaviour gives conflicting clues about its nature and structure. The head agrees with one noun while modifying another and definiteness patterns resemble those of simplex adjectives whereas modification patterns suggest that the structure is a Construct State. I argued that treating the AC as a compound formed in the lexicon and having a specific semantic representation can explain all of these characteristics.

It is interesting to note that there is no Free State equivalent to the Adjectival Compound. This is to be expected because the only relation the nominal Free State can express in Modern Standard Arabic is possession (see §4.3), which is not an available interpretation for the Adjectival Compound. Moreover, if the Adjectival Compound is taken to be an adjectival compound formed in the lexicon, the fact that the meaning it conveys cannot be derived by a syntactic analytical strategy is also to be expected.

As noted at the beginning of §5.2.1, the Adjectival Compound is not productive in Makkan Arabic. My account of this structure gives a straightforward way to explain this fact. The use of this structure is dependent on the language having adjectives with certain semantic representations which allow those adjective to take two nouns as arguments. One could claim that such a representation is not available for speakers

¹¹There are proposals in the literature that the lexicon is a complex system where certain operations may take place, particularly in the context of compounds. See for example Smirniotopoulos and Joseph (1998) and Weiskopf (2007).

of Makkan Arabic, and therefore it is not possible for them to form Adjectival Compounds. In other words, the only semantic representations of adjectives in Makkan Arabic is that of a one-place predicate.

5.3 The Nominalised Adjectival Construct

The second type of Adjective-Headed DPs is the Nominalised Adjectival Construct (NAC). This structure is similar to the Adjectival Compound in that the heads of both structures have the form of simple Arabic adjectives, but the categorial function of the two structures is not the same. While the AC is clearly adjectival, as explained in §5.2, the NAC is clearly nominal. Moreover, the NAC exhibits most of the basic properties of Semitic Construct States, especially including a genitive phrase and the head not accepting determiners. Nevertheless, I have been able to identify some special properties which distinguish this structure. There is a restriction on the number of the genitive phrase as well as an intriguing agreement mechanism between the head and genitive phrase which is associated with differences in meaning. I will explain these special properties in §5.3.1, and I will propose that the head of the NAC is a nominalised adjective which can be used in two different structures resulting in different agreement patterns and different meanings (§5.3.2).

This structure is mainly used in Modern Standard Arabic. Unlike the Adjectival Compound, the Nominalised Adjectival Construct is never used in Makkan Arabic, not even as a part of a higher register. Based on the analysis I motivate in this chapter, I will propose a way to explain why the NAC has been eliminated from the syntax of this spoken variety of Arabic (§5.3.3).

5.3.1 Data and Patterns

The Nominalised Adjectival Construct is very similar to the Nominal Construct State discussed in chapter 4. Both structures function as nominals, have heads which cannot have determiners affixed to them and include genitive phrases. The NAC is superficially similar to the Adjectival Compound because both structures can in some

cases take the “same” head. However, it is easy to distinguish these two structures if one considers the function of the whole construct, as can be seen in (58).

- (58) a. qaabalto malika-n ^caḏeema al-jaahi.
 met(1-s) king(m-s-acc) ind great(m-s-acc) the rank(m-mas-gen)
 (MSA)-(AC)

“I met a high-ranking king.”

- b. yaa ^caḏeema al-jaahi. (MSA)-(NAC)
 oh great(m-s-acc) the rank(m-mas-gen)
 “used to call someone with a high rank”¹²

The phrase ^caḏeema al-jaahi “great of rank” is used as an adjectival to modify *malika-n* “a king” in (58a) but as a nominal to refer to someone being called in (58b). Although the phrase looks superficially the same in both cases, structurally they are very different as will become clear in my analysis of the NAC.

The ambiguity shown in (58) is by no means a recurrent phenomenon with all ACs and NACs. Usually identifying the two structures is a straightforward process if one understands the properties proposed in this section. None of the distinct properties of the AC explained in §5.2.1 are characteristic of NACs. For example, the thematic restriction on the genitive phrase seen in ACs is not found in NACs. Moreover, the AC head takes the definite article, but the NAC head does not. Most significant perhaps is the fact that the head of the AC agrees with an externally modified noun while the head of the NAC may partially agree with the genitive phrase, as will be explained below.

Although the NAC is headed by a form that is usually considered adjectival, this construct actually functions as a nominal, as shown in (59), where the NAC *ḥasana at-ṭiabi* “good of the clothes” occupies the direct object position in a verbal sentence.

- (59) labisto ḥasana at-ṭiabi. (MSA)
 wore(1-s) good(m-s-acc) the clothes(m-p-gen)
 “I wore the good clothes.”

¹²In Modern Standard Arabic, accusative case is used on the DP which refers to someone being called.

The status of the adjectival form as the head rather than the the nominal element is supported mainly by the fact that the case checked on the NAC according to its position in the sentence is marked on the adjectival and not the nominal, which bears genitive case. For example, in (59), where the NAC is the object of the verb *labistu* “wore”, accusative case is shown on *ḥasana* “good” not *aṭ-ṭiabi* “the clothes”.

The example in (59) shows that basically the meaning contributed by the head of the NAC to the whole of the construct is adjectival. The head is in a sense describing the genitive phrase; the NAC in (59) means “the clothes which are good” or “the good clothes”. Thus, functionally, the adjectival form is a modifier, but structurally it is the head of a nominal structure.

There is an important restriction on the definiteness and number of the genitive phrase in NACs. The genitive phrase in this structure can be either a definite plural (60a) or a definite mass DP (60b). It cannot be singular (60c) or indefinite (60d).

- (60) a. *jadeeda* *al-kotobi* (MSA)
 new(m-s-acc) the books(m-p-gen)
 “the new books”
- b. *laḍeeda* *aṭ-ṭa^caami* (MSA)
 delicious(m-s-acc) the food(m-gen)
 “the delicious food”
- c. **jadeeda* *al-kitaabi* (MSA)
 new(m-s-acc) the book(m-s-gen)
 “the new book”
- d. **jadeeda* *kotobi-n* (MSA)
 new(m-s-acc) books(m-p-gen) (ind)
 “new books”

As long as this definiteness and number restriction is observed, the genitive phrase can be a complex DP; it can be a Nominal Construct State (61a),¹³ modified (61b) or co-ordinated (61c).

¹³If the genitive phrase is a Nominal Construct State, it should be one with a definite genitive component. As seen in chapter 4, in such constructs, the definite feature of the genitive phrase would become a feature of the whole construct. Consequently, this structure is considered definite and can be used as a genitive component in the NAC.

- (61) a. faaxiru ṭiaabi al-ʔomaraaʔi (MSA)
 luxurious(m-s-nom) clothes(m-p-gen) the princes(m-p-gen)
 “the luxurious clothes of the princes”
- b. faaxiru aṭ-ṭiaabi al-ḥareeriatī (MSA)
 luxurious(m-s-nom) the clothes(m-p-gen) the silky(f-s-gen)
 “the luxurious silky clothes”
- c. faaxiru aṭ-ṭiaabi wa al-ʔaṭaati
 luxurious(m-s-nom) the clothes(m-p-gen) and the furniture(m-mas-gen)
 (MSA)
 “the luxurious clothes and furniture”

As briefly mentioned earlier, no determiner can be affixed onto the head of the NAC, which is one of the typical characteristics of Semitic Construct States.

- (62) a. * al-ḥasana aṭ-ṭiaabi (MSA)
 the good(m-s-acc) the clothes(m-p-gen)
 “the good clothes.”
- b. * ḥasana-n aṭ-ṭiaabi (MSA)
 good(m-s-acc) (ind) the clothes(m-p-gen)
 “good clothes.”

Moreover, the process of definiteness spread explained in chapter 4 seems to take place in NACs. This structure seems to always have a definite meaning as an NAC usually refers to a specific group or subgroup of items which possess the property expressed by the head. For example, in (60a), the NAC refers to a specific group of books, which is the books which are new. Similarly, (60b) refers to the food which is delicious, not any food.

The test used to explain the process of definiteness spread in Nominal Construct States, definiteness on adjectival modifiers, cannot be used in the case of Nominalised Adjectival Constructs because the head of these constructs cannot be modified by adjectives. In fact, NAC heads do not accept any kind of modification. If the adjectival form of the head is taken as the basis of deciding the category of a possible modifier, one would expect this adjectival form to be modifiable by degree adverbs, but this is not the case, as shown in (63). Degree adverbs cannot be used either directly following the head or following the genitive phrase.

- (63) a. *faaxiru jiddan aṭ-ṭiaabi (MSA)
 luxurious(m-s-nom) very the clothes(m-p-gen)
 “the very luxurious clothes”
- b. *faaxiru aṭ-ṭiaabi jiddan (MSA)
 luxurious(m-s-nom) the clothes(m-p-gen) very
 “the very luxurious clothes”

Moreover, if the function of the structure as a nominal is taken as the basis of categorial identification, then modification by adjectives would be expected to be permissible, but this is not the case either (64).

- (64) a. *faaxiru (al)-jameelu aṭ-ṭiaabi
 luxurious(m-s-nom) the beautiful(m-s-nom) the clothes(m-p-gen)
 (MSA)
 “the beautiful, luxurious clothes”
- b. *faaxiru aṭ-ṭiaabi (al)-jameelu
 luxurious(m-s-nom) the clothes(m-p-gen) the beautiful(m-s-nom)
 (MSA)
 “the beautiful, luxurious clothes”

The incompatibility with modifiers is then another distinct property of the head of Nominalised Adjectival Constructs.

Nevertheless, the most special property of this structure relates to the phi features the head may be inflected for. Regardless of whether the genitive phrase which the adjective modifies semantically is masculine or feminine, the head of the NAC is always masculine; i.e., the head and the genitive phrase do not appear to agree in gender features. However, agreement in number between the head and the genitive phrase appears to involve a different mechanism. When the genitive phrase is plural, the head may be either singular or plural; i.e., agreement in number may or may not take place. The examples in (65) illustrate these agreement patterns.

- (65) a. qiṣaarū as-soari (MSA)
 short(m-p-nom) the suras(f-p-gen)
 “the short suras (chapters of the Qura’n)”

- b. *qaṣeeraatu as-soari (MSA)
 short(f-p-nom) the suras(f-p-gen)
 “the short suras (chapters of the Qura’n)”
- c. jadeedu al-kotobi (MSA)
 new(m-s-nom) the books(m-p-gen)
 “the new books”

In (65a), the head of the NAC is masculine plural, although the genitive phrase is feminine plural. It is not possible for the head to be inflected for feminine, as shown in (65b). Examples (65a) and (65c) behave differently with regard to number agreement; while the genitive phrase is plural in both cases, the head in (65a) is plural and the head in (65c) is singular. However, if the genitive phrase is a mass DP, the only possible form of the head is the singular masculine.

- (66) waafiru al-iḥtiraami (MSA)
 plentiful(m-s-nom) the respect(m-gen)
 “plenty of respect”

I assume that this is because mass DPs behave like singular DPs with regard to phi features.¹⁴ Therefore, the head of the AC would be singular in form whether or not it is in agreement with the genitive phrase.

The difference in the form, i.e., number, of the head adjective can sometimes be associated with a subtle difference in meaning.¹⁵ The singular masculine form is associated with a partitive meaning, whereas the singular plural form is often considered as a strong form of modification. Consider the following two contexts.

¹⁴The fact that mass DPs are treated as singular can be seen in the following example.

- (1) ṭa^caamu-n laṭeṭu-n (MSA)
 food(m-mas-nom) ind delicious(m-s-nom) ind
 “delicious food”

¹⁵Certain Nominalised Adjectival Constructs have been “fossilised” with a certain head. Such a fixed NAC is (65a) and speakers of Arabic would not accept the singular form of the head. The same is true for (65c), where the head is singular. I take this to mean that these phrases have been associated with certain meanings and have turned into rather fixed expressions. Some other NAC accept the change in form more readily, and it is in these that the difference in meaning between singular and plural can be detected.

In the first scenario, the head teacher in a school wants to meet all the students. However, the topic she wants to discuss with the students is rather complex and she wants to be able to give the students the information in a way they can comprehend. She thinks that she can organise her talk in two different ways and that each way is suitable for a particular age group. Therefore, she divides the students into two groups based on age. She first talks to the group which contains the younger students and then to the group which contains the older students. The most important idea here is that age, or being young vs. being old, is the most important factor in portioning the group and it is this portioning which is very important. This is the scenario described in (67a), where the singular form of the head is used. In the second scenario, someone is trying to memorise the Qura'n but he is finding it difficult and keeps forgetting. His mother advises him to start with the short suras (chapters) because they will be easier to remember. The important factor here is the fact that the suras are short, and their being short is considered important. This is the scenario in example (67b), where the plural form of the adjective is used as a head.

- (67) a. *ʔaradto ʔan takoona kalimat-i monaasibatu-n*
 want(1-s) that be(3-f-s) speech(f-s-nom) my appropriate(f-s-nom) ind
li-ʔa^cmaari al-mostami^ceen. liḍalika qaabalto
 for ages(m-p-gen) the audience(m-p-gen) so met(1-s)
ʕigaara al-banati ʔawalan ʔomma kibaara-honna.
 young(m-p-acc) the girls(f-p-gen) first then old(m-p-acc) them(f)
 (MSA)

“I wanted to make what I had to say appropriate to the age of my audience. So, I first met the young girls and then the old ones.”

- b. *yoreedu walad-i ʔan yaḥfaḍa al-qorʔaana*
 want(3-m-s) son(m-s-nom) my that memorise(3-m-s) the Qura'n
laakinna-ho yoajiho ʕo^cobata-n fee ḍaalika
 but he face(3-m-s) difficulty(m-s-acc) ind in that(m)
fa-naṣaḥto-ho ʔan yabdaʔa bi-qiṣaari
 so advised(1-s) him that start(3-m-s) with short(m-p-gen)
as-soari. (MSA)
 the suras(f-p-gen)

“My son wants to memorise the Qura'n but he is finding it difficult. Therefore, I advised him to start with the short suras.”

Using the NAC in its latter meaning, as a way of emphasising a certain quality, is often perceived as a stronger form of description than the postnominal use of adjectives, as in (68).

- (68) as-soaru al-qāṣeeratu (MSA)
 the suras(f-p-nom) the short(f-s-nom)
 “the short suras”

Although an NAC with a mass DP genitive phrase can only have a singular masculine head, I assume that the structure can still be ambiguous between a partitive and an emphatic descriptive meaning. The difference here is that apparently the same head can be associated with both meanings. Thus, the NAC in (69) can be used with either a partitive meaning or as a way of emphasising the description of the food as delicious. Nevertheless, these differences in meaning are very subtle but they can be detected in the right context.

- (69) ʔakalto laḍeḍa at-ṭaʿaami. (MSA)
 ate(1-s) delicious(m-s-acc) the food(m-mas-gen)
 “I ate the delicious of the food.” or “I ate the delicious food.”

Fassi-Fehri (1999) briefly discusses Nominalised Adjectival Constructs, but he does not give them a specific name and he claims that they should be analysed as DPs with prenominal adjectives. In fact, he claims that all Arabic adjectives are base generated in a prenominal position, and that the postnominal order is a derived one. However, he stops short of explaining how the special patterns associated with this structure can be explained. If postnominal adjectives are derived from “prenominal adjectives”, how can the different agreement patterns associated with each of them be accounted for? If the adjective in this structure were a prenominal modifier, why is the case checked on the whole structure shown on the adjective and not the noun? In the same article, Fassi-Fehri also mentions that the adjective, which I am treating as the head in this structure, has been nominalised. This idea actually explains why the structure functions as a nominal but it also contradicts his proposal that the adjective is a prenominal adjective rather than the head of the structure.

In this section, I explained the special properties of Nominalised Adjectival Constructs. Like Nominal Construct States, NACs function as nominals, do not allow

determiners on their heads and undergo definiteness spread. However, the head of the NAC cannot be modified and there are definiteness and number restrictions on its genitive component. The head of the NAC does not agree with the genitive phrase in gender and it may or may not agree in number. The different agreement patterns convey subtle differences in meaning, with singular forms reflecting a partitive meaning whereas plural forms offer a stronger means of modification. In the next section, I will argue that this structure is in fact a Construct State, with a Construct State D. However, the NAC's special properties are the result of the unique category of the head and the ability of that head to form Construct States having slightly different structures.

5.3.2 Proposed Analysis

Nominalised Adjectival Constructs show some unique characteristics. Some properties of this structure fall out from its status as a Construct State, particularly the case checked on the genitive phrase, the fact that the head cannot host determiners and that definiteness spreads from the genitive phrase to the whole construct. However, the special properties of this structure relate to two points: the adjectival-nominal behaviour of the head, the different agreement mechanisms and the meanings associated with them. In order to explain the first point, I will propose that the head of the NAC is a complex category N/A formed in the lexicon and that this head possesses a unique combination of features (§5.3.2.1). To explain the differences in meaning associated with different agreement patterns, I will propose that the head N/A may form a Construct State with different elements, and that each configuration leads to a particular agreement pattern and meaning (§5.3.2.2).

5.3.2.1 Category of the Head of the Nominalised Adjectival Construct

The form of the head of the Nominalised Adjectival Construct corresponds closely to some forms of adjectives. For example, both examples (70a) and (70b) use *jadeedu* “new”, but in (70a) this word is the head of an NAC while in (70b) the same word is a postnominal adjective. The same pattern can be seen in examples (70c) and (70d).

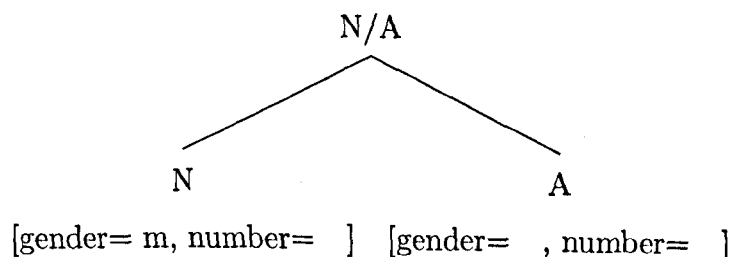
- (70) a. jadeedu al-kotobi (MSA)-(NAC)
 new(m-s-nom) the books(m-p-gen)
 “the new books”
- b. al-kitaabu al-jadeedu (MSA)
 the book(m-s-nom) the new(m-s-nom)
 “the new book”
- c. qiṣaarū as-soari (MSA)-(NAC)
 short(m-p-nom) the suras(f-p-gen)
 “the short suras (chapters of the Qura’n)”
- d. rijaalun qiṣaarū-n (MSA)
 men(m-p-nom) (ind) short(m-p-nom) (ind)
 “short men”

However, as can be seen from examples comparing (70a) and (70c) on the one hand and (70b) and (70d) on the other, when a given “adjectival” form is used as the head of an NAC, there is only partial agreement between this form and the genitive phrase. In (70a), for example, there is no definiteness agreement and no number agreement; the head does not bear the definite article and it is in singular form. Moreover, even when the head of the NAC agrees in number by being plural in form, this head does not agree in gender. This is clearly shown in (70c) where the head of the NAC has masculine features whereas the genitive phrase has feminine features. However, when the same “adjectival” form is used as a postnominal adjective, there is full agreement between the adjective and the noun it modifies, as shown in (70b) and (70d). In (70b), for example, both the adjective and the modified noun are marked definite, singular, masculine and nominative. In fact, as explained in §5.3.1, the singular masculine and plural masculine are the only two possible forms of the head of an NAC, whereas postnominal adjectives can inflect for each number and gender. Moreover, heads of NACs cannot be modified by degree adverbs, as shown in §5.3.1, while postnominal adjectives can. Thus, although the heads of NACs superficially look similar to adjectives, the two do not behave similarly with regards to agreement and modification. Nevertheless, there is something adjectival about the behaviour of the head of the NAC because it may agree in number and it is generally understood as modifying the genitive phrase. However, the NAC is nominal, which suggests that its head is nominal too. How can this mixture of nominal and adjectival properties

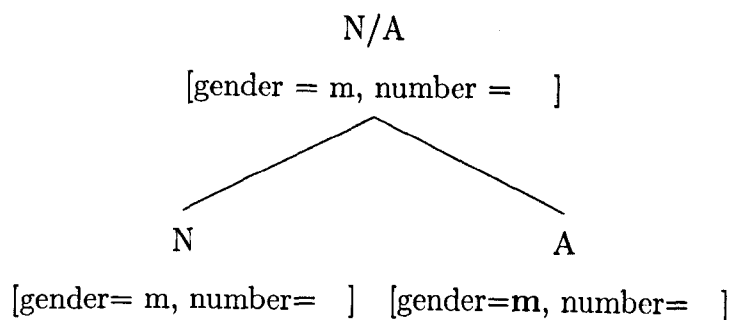
be accounted for?

I propose that the head of the Nominalised Adjectival Construct is a complex category N/A formed in the lexicon by combining an adjective with a null noun, as shown in (71). In other words, it is, as Fassi-Fehri (1999) suggested, a nominalised adjective.

(71) a.



b.



However, I propose that this nominalisation process takes place in terms of “blending” rather than affixation, for example. I assume that both the categories N and A in Arabic have gender and number features. Nouns have their gender features specified because gender is an integral part of the meaning of any noun, whereas the number feature is variable and it might be singular, dual or plural. However, neither the gender nor number features on adjectives are specified because they need to be in agreement with those of a noun. Thus, the input to the process of word formation proposed here is an N, with a specified gender feature but an unspecified number feature and an A with unvalued gender and number features. I propose that the N which is used in this process has the masculine gender feature because this is the default gender feature in Arabic.

I draw support for the proposal that the null N used in this word formation process has a masculine feature from the fact that masculine singular pronominals are sometimes used in “dummy” positions, as shown in (72).

- (72) *ʔinna-ho la-mina al-mostaḥeeli ʔan ʔaḡfira la-ho.*
 verily him verily of the impossible(m-s-gen) that forgive(1-s) for him
 (MSA)

“It is impossible for me to forgive him.”

The pronoun used on *ʔinna-ho* is not referential, but rather a dummy pronoun required in this position. This pronoun is singular masculine. So I assume that these features are default in Arabic and they are used when a dummy nominal is needed. Only the gender feature is valued on the null nominal used in the word formation process used here because there is no requirement for that nominal to have a full feature structure as it does not occupy the position of a full nominal. Nevertheless, I assume that if a null nominal is used in an Arabic sentence to occupy the position of a full nominal, it would have both the gender and the number features specified. This distinction will be crucial when considering one of the derivations I propose in §5.3.2.2.

As shown in (71), the word formation process values the gender feature on A using the gender feature on N. However, the number feature on both N and A remain unvalued. Thus, the resulting category N/A will have a masculine gender feature but an unvalued number feature. Moreover, the form of the adjective is not affected by combining it with the null nominal. Thus, superficially N/A looks like an adjective but it functions as a nominal which has a masculine feature and is required to agree with another nominal in number. N/A has the feature structure in (73).

- (73) N/A: [Gender = M, Number =]

I claim that adjectives and adverbs cannot modify N/A, which explains why the head of the NAC cannot be modified, as explained in §5.3.1. The unique categorial status of this head makes it incompatible with modifiers of nouns and modifiers of adjectives.¹⁶

¹⁶The category N/A is different from adjectives which can be used as nominals, such as the English “the rich” and “the poor”. One obvious difference between these two cases is the fact that the latter can be modified by degree adverbs, as in the English “the very rich” or the Arabic *al-foqaraaʔu jiddan* “the very poor”, whereas the former does not accept modification.

In this section I argued that the head of the Nominalised Adjectival Construct is a complex category formed in the lexicon. The process used to form this category involves combining an adjective with a null nominal, producing a nominalised adjective of the category N/A. In the next section I will show how this head functions as the head of Construct States.

5.3.2.2 Two Derivations

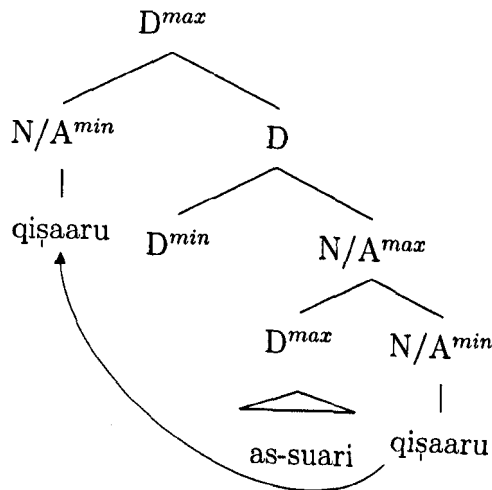
The head of the Nominalised Adjectival Construct can be either masculine plural or masculine singular. The former is used as a stronger form of modification, whereas the latter has a partitive meaning. In this section, I will show how each of these two patterns can be derived using the complex category N/A proposed in §5.3.2.1. I will propose that this head may be projected in slightly different structures, and that each structure leads to a special agreement pattern and consequently to a specific meaning.

Let us first consider the case where the head of the NAC is a masculine plural form followed by a definite plural genitive DP, as in (74). As explained in §5.3.1, this structure basically involves the attribution of the quality denoted by the head to the genitive phrase.

- (74) qīṣāaru as-soari (MSA)
 short(m-p-nom) the suras(f-p-gen)
 “the short suras (chapters of the Quraan)”

Given that this structure has the basic properties associated with the projection of a Construct State D, I propose that this NAC is a typical Construct State of the type discussed in chapter 4. However, what makes this structure special is the fact that N/A is projected instead of N, as illustrated in (75).

(75)



The derivation proceeds in the same way it does for Nominal Construct States. Genitive case is checked on the genitive phrase by the Construct State D and the definiteness feature on D inherits the value of the genitive phrase. D also causes the head of the construct to move, and a morphological merger operation merges N/A and D. The only difference in this case is that the number feature on N/A is valued by an Agree relationship with the genitive phrase before Head Movement takes place, causing N/A to take a plural form. Moreover, the modification meaning is another reflection of this relationship between N/A and the genitive phrase. The only special element in this derivation is the category of the head.

The other possible form of the head of the NAC is the masculine singular, and this form is associated with a partitive meaning. For example, the NAC in (76) refers to the book(s) which are new among a larger collection of books, some of which might be old.

- (76) jadeedu al-kotobi (MSA)
 new(m-s-nom) the books(m-p-gen)
 “the new amongst the books”

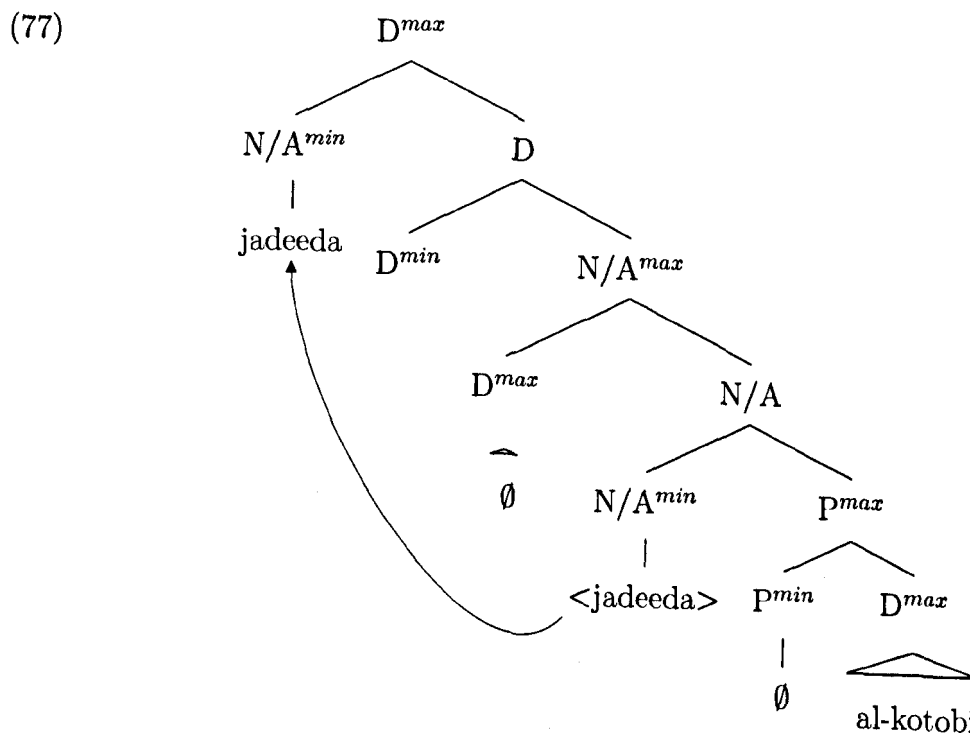
The fact that the head of this structure is singular suggests that the agreement between N/A and the plural DP of the type proposed for the NAC in (74) does not take place, that the head is instead in agreement with a singular nominal.

To account for the singular form of the head and the partitive meaning associated with this form, I propose that this structure involves agreement between N/A and a null nominal with the meaning part, one, group, etc.. This noun has the default

phi features in Arabic: masculine and singular, as argued earlier.¹⁷ I assume that this null nominal occupies the position of the genitive phrase in (75). The head of the NAC agrees with this nominal, and as a result the number feature on the N/A is valued as singular. Thus, the difference between the case of a plural head and that of a singular head relates to the nominal which the N/A agrees with. In both cases, the nominal participating in this agreement relationship with the N/A is in the same position, and the difference in the form of the head is a reflection of the features on that nominal. In the plural case, this nominal is an overt plural DP, whereas in the singular case the nominal is a singular masculine null nominal. Thus, in both cases the agreement process takes place in the same configuration, but the nominal in the relevant position is different.

If the null nominal occurs in the same position as the genitive phrase in (75), the genitive case feature of the Construct State D will be checked on this nominal. If this is true, how can the genitive case on the genitive DP *al-kotobi* “the books” in (76) be accounted for? I propose that the genitive case on this DP is checked by a null preposition. The use of this null preposition also explains the partitive meaning associated with the singular form of the head in NACs. The structure I am proposing is shown in (77).

¹⁷Since this null nominal is a pronominal, I assume that it has a definite feature. Thus, effectively, the definite feature spreads from this nominal to the whole Construct State.



Thus, the NAC in (76) analysed as (77) would be used to refer to the subgroup of books which consists of only new books. As well as explaining the singular form of the head, the null elements I argue for in my analysis make this partitive meaning expected because they contribute the required components: the nominal referring to the subpart and the preposition connecting that subpart to the whole.¹⁸

In this section, I have argued that N/A can form a Construct State with either an overt DP, leading to plural agreement, or with a null nominal, leading to singular

¹⁸A question which arise here is why it is only possible for a null preposition to be used, but not an overt one. I assume here that this is mainly a lexical selection issue. When N/A selects a PP, the only P it can take is a null one. This is in contrast to Arabic partitive structures with an overt preposition, as in (1).

- (1) al-jadeedu (jiddan) min al-kotobi (MSA)
 the new(m-s-nom) very from the books(m-p-gen)
 "the (very) new among the books"

These structure seem to include adjectives of the type mentioned in footnote 16, as these adjectives may be modified by degree adverbs. There are two possible analyses for such structures. One would be that they involve modification of a null head, which c-selects for an overt preposition *min*, and the other is that the noun head has undergone ellipsis. I will not attempt to argue for a specific analysis here.

agreement. In the first instance, the genitive case of the Construct State D is checked on the overt DP, but in the second instance that case is checked on the null nominal and N/A takes a PP complement headed by a null P. The proposal advocated here offers a system which associates each agreement form with a specific meaning using the same head and the same D but slightly different configurations. This explains why in both cases the head of the NAC behaves like heads of Construct States with regards to determiners; Construct State D, not an overt D, is projected in both cases.

5.3.3 Final Remarks on the Nominalised Adjectival Construct

At the beginning of §5.3, I noted that Nominalised Adjectival Constructs are not a part of the syntax of Makkan Arabic. One obvious explanation for why this structure is not used in this spoken variety is that the word formation process used to form N/A is not available for speakers of Makkan Arabic. If this complex category is not available, the structure it forms cannot be derived.

Nominalised Adjectival Constructs have not been widely studied in the generative literature. This is probably because they superficially resemble Adjectival Compounds, but as I have shown, the two structures are very different. I proposed that Nominalised Adjectival Constructs are Construct States with a complex head N/A. This complex head has a unique feature structure and it may be used in two different configurations resulting in the head taking one of two possible forms. The proposal introduced here explains this alteration in form and connects it to meaning differences associated with the two forms. This system offers a straightforward way to explain why this structure cannot be used in some spoken varieties of Arabic; the central element of this proposal, the complex category N/A, may be too complex for the grammar of those varieties.

5.4 The Superlative Construct

The third type of Adjective-Headed DPs is the Superlative Construct (SC). This structure includes a superlative adjective as a head and a genitive DP. Like the Nominalised Adjectival Construct, the Superlative Construct functions as a nominal and has some of the major characteristics of Construct States, including the fact that determiners cannot be affixed to the head. This structure is widely used both in Modern Standard Arabic and Makkan Arabic. However, in Modern Standard Arabic, superlative adjectives may be used as postnominal modifiers as well as heads of SCs, whereas in Makkan Arabic only the SC use is available. I will introduce the superlative form and show how it is used in both varieties (§5.4.1), and then propose an analysis of SCs where I claim that they are structurally similar to NACs (§5.4.2).

5.4.1 Data and Patterns

In both Modern Standard Arabic and Makkan Arabic, there are two ways to express the superlative degree of adjectives: with a superlative adjective or with a Superlative Construct, a Construct-State-like structure. In Modern Standard Arabic, both methods use the same adjectival form, which is traditionally referred to as *ʔafʔal*. In Makkan Arabic, however, the *ʔafʔal* form cannot be used as an adjective, but only as the head of a Superlative Construct. I will first explain the adjectival use of this form (§5.4.1.1) and then show how it is used in Construct States (§5.4.1.2).

5.4.1.1 The *ʔafʔal* Form as an Adjective

In this section I will explain how the *ʔafʔal* form is produced in Arabic and how it is used as a postnominal adjective. In Modern Standard Arabic, *ʔafʔal* can be used a postnominal adjective to express both comparative and superlative relations, but in Makkan Arabic this use is limited to comparison only.

The term *ʔafʔal* refers to the words formed by applying an Arabic root, which consists of three consonants, to the pattern *ʔaCCaC* so that each consonant in the root replaces one of the consonants. For example, *k-b-r* and *ṣ-j-r* would produce

ʔakbar “biggest” and *ʔaṣṣḡar* “smallest”. As an adjective, this form can actually be used to express either comparative or superlative relations.

The comparative *ʔafʔal* is not under study in this thesis, but I will explain this use in order to make it distinguishable from the superlative use. In its comparative use, *ʔafʔal* can be either a postnominal or a predicational adjective. When it is a postnominal adjective, it agrees with the noun it modifies in definiteness (and case in Modern Standard Arabic), but crucially, it does not inflect for different numbers and genders, and the only possible form has “the default” singular masculine features. Moreover, the comparative *ʔafʔal* is usually followed by the preposition *min* “from” and a DP to set the comparison relation against.

- (78) *ʔabḡa ṣaḡin ʔakbar (min haadi aṣ-ṣoḡoon).* (MA)
 want(1-s) plate(m-s) bigger from/than this(f-s) the plates(m-p)
 “I need a bigger plate.”

As noted earlier, this is the only adjectival use of this form in Makkan Arabic. However, in Modern Standard Arabic, this form can also be used as a modifier to express superlative relations.

In its superlative use, the *ʔafʔal* form can behave like a normal adjective; it can be used postnominally or a predicationally. Unlike in its comparative use, the postnominal adjectival superlative agrees with the noun it modifies in number, gender, case and definiteness, as shown in (79a) and (79b). Nevertheless, the superlative postnominal adjective is not compatible with indefinite nouns, so it is not possible for it to have the indefinite marker, nunation, as shown in (79c).¹⁹

- (79) a. *al-baitu al-ʔakbaru* (MSA)
 the house(m-s-nom) the biggest(m-s-nom)
 “the biggest house”
- b. *ibnat-i al-kubraa* (MSA)
 daughter(f-s-nom/acc/gen) my the eldest(f-s-nom/acc/gen)
 “my eldest daughter”
- c. * *baitu-n ʔakbaru(-n)* (MSA)
 house(m-s-nom) (ind) biggest(m-s-nom) (ind)

¹⁹This is not a fact special to Arabic. There can be one thing at the top or bottom of any scale. So it must be a semantic restriction common to all languages.

ʔafʔal can also be used as a predicative adjective; like any Arabic predicative adjective, this form agrees with the subject in number and gender and it is assigned nominative case. However, as the superlative form is not compatible with the indefinite article, *ʔafʔal* as a predicative adjective obligatorily takes the definite article, and consequently a sentence with *ʔafʔal* as a predicate obligatorily uses an overt copula, as shown in (80).²⁰

- (80) haada at-taalibu *(hoa) al-ʔaḍkaa. (MSA)
 this(m-s) the student(m-s-nom) be(m-s) the most intelligent
 “This student is the most clever one.”

In Makkan Arabic, *ʔafʔal* cannot be used as an adjective. However, the simple form of the adjective can be used to give superlative meaning in the certain contexts.

- (81) walad-i al-kabeer (MA)
 son(m-s) my the big(m-s)
 “my eldest son”

The *ʔafʔal* form can be used as a simplex adjective in Both Modern Standard Arabic and Makkan Arabic. In Modern Standard Arabic, this use can express either comparative or superlative relations. These two uses can mainly be distinguished by whether or not *ʔafʔal* agrees with the modified noun in number and gender. In Makkan Arabic, however, the adjectival use of this form is limited to comparatives, and regular simple adjectives may in certain contexts express superlative relations. In the next section, I will explain the use of the *ʔafʔal* form as the head of a Construct State and show how this use differs from the adjectival use of the same form.

5.4.1.2 The *ʔafʔal* Form as the Head of the Superlative Construct

The *ʔafʔal* form can be the head of a Construct State functioning as a nominal, and this is the structure I call the Superlative Construct. This structure is considered a Construct State because the superlative form is followed by a genitive DP. In Modern Standard Arabic, the case checked on the SC is marked on the superlative form (82); hence the superlative is considered to be the head of the SC. This structure is found

²⁰See footnote 4.

in both Modern Standard Arabic and Makkan Arabic. The only difference is that case marking is overt in the former variety but not in the latter.

- (82) a. raʔaito ʔakbara waladi-n. (MSA)
 saw(1-s) biggest(acc) boy(m-s-gen) ind
 "I saw the biggest boy"
- b. naʕarto ʔilaa ʔajmali lawḥati-n. (MSA)
 looked(1-s) to/at most-beautiful(gen) painting(f-s-gen) ind
 "I looked at the most beautiful painting."

The head of the SC always has masculine and singular features;²¹ it does not agree with the genitive phrase in number or gender, as shown in (83). The same form *ʔatwal* "tallest" is used whether the genitive phrase is feminine singular (83a), masculine singular (83b) or plural ((83c) and (83d)).

- (83) a. ʔatwal bint (MA)
 tallest girl(f-s)
 "the tallest girl"
- b. ʔatwal walad (MA)
 tallest boy(m-s)
 "the tallest boy"
- c. ʔatwal ʔwlaad (MA)
 tallest boys(m-p)
 "the tallest boys"
- d. ʔatwal banaat (MA)
 tallest girls(f-p)
 "the tallest girls"

The head of the SC does not accept modification, as shown in (84), and - like the majority of Construct State heads - it does not accept either the definite or the indefinite article (85).

- (84) a. *ʔaḥsan kitaab marra (MA)
 best book(m-s) very
 "the very best book"
- b. *ʔaḥsan kitaab (aš)-šadeed (MA)
 best book(m-s) the strong(m-s)

²¹I claim that this head has these features because it corresponds to the masculine singular form of the adjectival superlative.

- (85) a. *al-ʔaʔwal walad (MA)
 the tallest boy(m-s)
 “the tallest boy”
- b. *ʔaʔwalu-n walad (MSA)
 tallest(nom) ind boy(m-s)

The genitive phrase in the SC can be an indefinite singular DP (86a) or an indefinite or definite plural DP ((86b) and (86c)), but it cannot be a singular definite DP (86d). Thus, there is one missing cell from the paradigm shown in table (5.1).

- (86) a. ʔaḥsan ʔaalib (MA)
 best student(m-s)
 “the best student”
- b. ʔaḥsan ʔollaab (MA)
 best the students(m-p)
 “the best students”
- c. ʔaḥsan aʔ-ʔollaab (MA)
 best the students(m-p)
 “the best students”
- d. *ʔaḥsan aʔ-ʔaalib (MA)
 best the student(m-s)
 “the best student”

Table 5.1: Complements in Superlative Constructs

	Definite	Indefinite
Singular	X	✓
Plural	✓	✓

When the genitive phrase is plural definite, as in (86c), the SC is ambiguous between singular and plural interpretations, as pointed out in Elghamry (2004). For example, (86c) above can refer to either one student who is the best student, or to a group of students who are the best students. Elghamry (2004) claims that this ambiguity is the result of some sort of interaction between number and definiteness, but he does not explain how the ambiguity can be derived. I will explain this in §5.4.2.

The head of the Superlative Construct is the *ʔafʔal* form with singular masculine features, and this head cannot be modified. The genitive phrase can be a singular or plural DP. However, if the genitive phrase is singular there is a requirement for it to be indefinite, but this restriction does not apply if the DP is plural. In the next section, I will provide an account for Superlative Constructs explaining both their status as Construct States as well as the special patterns they show.

5.4.2 Proposed Analysis

The Superlative Construct functions as a nominal, but it has a head which closely resembles superlative adjectives. Moreover, when this structure has a definite plural DP as the genitive component, the SC is ambiguous between singular and plural interpretations. In the account developed here, I will argue that the head of the SC is formed by a word formation process similar to the one proposed for Nominalised Adjectival Constructs (§5.4.2.1). Moreover, I will show that the two derivations proposed for Nominalised Adjectival Constructs can explain the form of the head as well the ambiguity which results when the genitive phrase is a definite Plural DP (§5.4.2.2).

5.4.2.1 Category of the Head of the Superlative Construct

In this section, I will consider several options for the categorial status of the head of the Superlative Construct. I will argue that this head is not a superlative adjective, noun or quantifier. Instead I will argue that it is a nominalised superlative adjective which is formed using a similar process to the one proposed for Nominalised Adjectival Constructs.

Although the head of the SC does have a modificational function, it does not inflect for gender and number. The fact that the SC head has an invariable form makes it different from the superlative adjectives introduced in §5.4.1.1. Superlative forms functioning as adjectives agree with the noun they modify in definiteness, number, gender and case (79). However, as explained in §5.4.1.2 when the superlative is the head of a Construct State, the superlative can have singular masculine features, it

cannot bear any determiners and the case marked on it depends on its position in the sentence, not in agreement with a nominal. Moreover, the head of the SC cannot be modified by adverbials, unlike the case with superlative adjectives. Thus, there are major differences between superlative adjectives and heads of SCs, and this suggests that these two uses of the same form belong to different categories. Superlative adjectives are clearly adjectival; therefore, I claim that the head of the SC is not.

Given that the SC functions as a nominal, an obvious option to consider is whether the head of this structure is a noun. The modificational function of this head suggests that it is not; it describes the genitive phrase as having the property of being of the highest degree with regard to a certain quality. Thus, semantically it does more than a simple noun does. Moreover, unlike nouns, the number of the superlative is sometimes determined by the number of the genitive phrase, suggesting that some sort of number agreement does take place although there is no overt indication of it.²² Compare the following Nominal Construct States (87) and Superlative Constructs (88).

(87) a. bait rijjaal (MA)
 house(m-s) man(m-s)
 “a man’s house”

b. bait rijjaal (MA)
 house(m-s) men(m-p)
 “men’s house”

(88) a. ?aʔwal rijjaal (MA)
 tallest man(m-s)
 “the tallest man”

b. ?aʔwal rijjaal (MA)
 tallest men(m-p)
 “the tallest men”

As can be seen in examples (87a) and (87b), the number of the head of a Nominal Construct State is independent of the number of the genitive phrase. In both examples, the head is singular regardless of the number of the genitive phrase. However, in

²²As explained in §5.4.1.2, when the genitive phrase is definite plural, the SC is ambiguous between a singular and a plural interpretation. This will be explained in §5.4.2.2.

(88a) and (88b) the number of the head is dependent on the number of the genitive phrase. The SC in (88a) means “the one person who possesses the highest degree of the property of being tall, and this person is a man”, whereas (88b) means “the group of people who possess the highest degree of the property of being tall, and these people are men.” Moreover, the head of the SC cannot be modified by adjectives (84b), also suggesting that it is not a simple nominal.

Another option to consider is that the head of the Superlative Construct is a quantifier, as suggested by Elghamry (2004). Elghamry argues that superlatives are quantifiers because they can both be used in the same environments, as illustrated in the following examples using the quantifier *kol* “all” (Elghamry 2004: 902, 906-907).

- (89) a. *kollu al-kottaabi* (MSA)
 all(nom) the writers(m-p-gen)
 “all the writers”
- b. *kollu-hom* (MSA)
 all(nom) them(m-p)
 “all of them”
- c. * *al-kollu-hom* (MSA)
 the all(nom) them(m-p)
 “all of them”
- d. * *al-kollu al-kottaabi* (MSA)
 the all(nom) the writers(m-p-gen)
 “all the writers”
- (90) a. *ʔajwadu al-kottaabi* (MSA)
 best(nom) the writers(m-p-gen)
 “the best of the (male) writers”
- b. *ʔajwadu-hom* (MSA)
 best(nom) them(m-p)
 “the best of them (male)”
- c. * *al-ʔajwadu l-kottaabi* (MSA)
 the best(nom) the writers(m-p-gen)
 “the best writers”
- d. * *al-ʔajwadu-hom* (MSA)
 the best(nom) them(m-p)
 “the best of them”

(91) kollu kotobi al-kaatibi (MSA)
 all(nom) books(m-p-gen) the writer(m-s-gen)
 “all the writer’s books”

(92) ?ajwadu kotobi l-kaatibi (MSA)
 best(nom) books(m-p-gen) the writer(m-s-gen)
 “the writer’s best books”

Elghamry (2004) claims that these examples show that the superlative form behaves in the same way as the quantifier *kol* “all”. Both can be followed by a similar range of genitive phrases. In (89a) and (90a), both the quantifier and the superlative form are followed by a plural definite DP, and in (89b) and (90b) they are both attached to a pronominal clitic. However, what Elghamry fails to note is that there is no exact correspondence between the range of genitive phrases these two words can take. The SC can have an indefinite plural DP as its genitive component, whereas *kol* “all” cannot.

- (93) a. ?ašt̄ar modariseen (MA)
 best the teachers(m-p)
 “the best teachers”
- b. *kol modariseen (MA)
 all the teachers(m-p)
 “all teachers”

Moreover, different Arabic quantifiers take different ranges of genitive phrases, as explained in §2.7. Thus, the type of the genitive phrase cannot be used to determine whether or not a given word is a quantifier.

The other reasons Elghamry gives for considering the heads of SCs as quantifiers all relate to the status of the structure as a Construct State. For example, he notes that neither can take determiners ((89c), (89d), (90c) and (90d)). He also points out that they can both extend Nominal Construct States ((91) and (92)). However, these two last properties are not specific to quantifiers but are basic properties of Construct States.

A more serious reason that superlatives cannot be analysed as quantifiers is the fact that the use of a superlative in a sentence does not lead to scopal ambiguity, as

would be expected if superlatives were in fact quantifiers. Consider the sentences in (94) below.

- (94) a. honaaka rajolu-n yoħibbu kolla
exists man(m-s-nom) (ind) love(3rd-m-s) every(acc)
amra?ati-n. (MSA)
woman(f-s-gen) (ind)
“A man loves every woman.”
- b. kollu rajuli-n yoħibbu amra?ata-n.
every(nom) man(m-s-acc) (ind) love(3rd-m-s) woman(f-s-acc) (ind)
(MSA)
“Every man loves a woman.”
- c. ?aðkaa rajoli-n yoħibbu kolla
most-intelligent(nom) man(m-s-nom) (ind) love(3rd-m-s) every(acc)
amra?ati-n. (MSA)
woman(f-s-gen) (ind)
“The most intelligent man loves every woman.”

In sentence (94a), the subject contains an existential quantifier while the object contains a universal quantifier, leading to scopal ambiguity. The interpretation could be that there is one man who loves all women (existential quantifier taking wider scope) or that for each woman there is a man who loves her (universal quantifier taking wider scope). A similar interaction is found in (94b), where the sentence can mean that there is one woman whom every man loves (universal outscopes existential), or that every man loves a different woman (existential outscopes universal). Sentence (94c), however, has an SC as a subject and a universally quantified DP as an object, but this sentence does not show scopal ambiguity. The only possible interpretation is that there is only one man who is the most intelligent of all and that man loves all women, which corresponds to the surface order of these DPs. The interpretation where each woman is loved by a different intelligent man (inverse scope) is not available here.²³

²³When the SC subject has a plural interpretation, some speakers note that there is scopal ambiguity. Consider the following example.

- (1) ?azkaa tollaab al-madrasah yħobbo waħda maada. (MA)
most-intelligent students(m-p) the school(f-s) like(3rd-m-s) one subject(f-s)
“The most intelligent students in the school like one subject.”

Thus, although there are some similarities between certain quantifiers and superlatives, there is no evidence suggesting that they belong to the same category. In fact, treating them as belonging to the same lexical category provides neither a descriptive nor an explanatory advantage.

I propose that the head of the Superlative Construct is a complex category N/SA formed in the lexicon by combining a superlative adjective, of the type discussed in §5.4.1.1, with a null nominal. This is the same word formation process proposed for Nominalised Adjectival Constructs, but the difference between the two cases relates to the type of adjective used. In NACs, a simplex adjective is used, but in SCs, a superlative adjective is combined with the null noun. I will explain below how this process works and how the fact that a superlative adjective is the basis of this word formation explains the invariant form of the head of the SC.

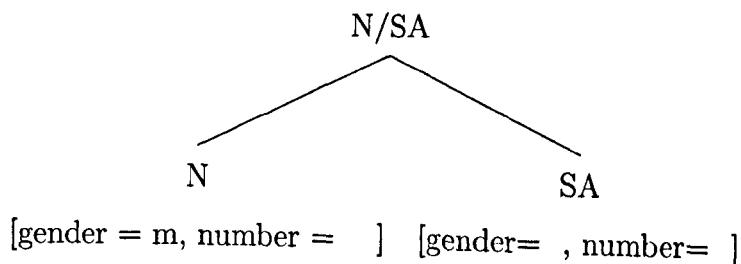
The word formation process explained in §5.3.2.1 involves combining an adjective with a null nominal which has a masculine gender feature and an unvalued number feature. The result of this combination is a complex category which functions as a nominal, has a masculine gender feature and has to agree with another nominal in order to get its number feature valued. I propose that the same process takes place to form the head of the SC, but instead of a simplex adjective, a superlative adjective is used, producing a complex category N/SA, as shown in (95).

Some of my informants only accepted the interpretation where there is only one course that all the most intelligent students like (surface scope), while others accepted the interpretation that there is a different course for each one of the most intelligent students (inverse scope). However, the same sort of ambiguity is present in the following sentence, which has a non-construct plural subject.

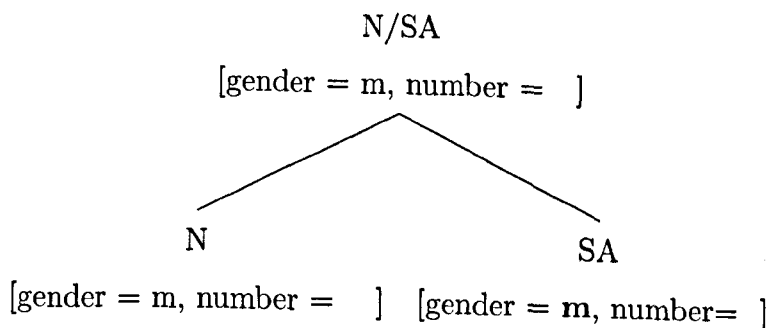
- (2) at-tollab al-ʔazkia yħobbo waħda maada. (MA)
 the students(m-p) the intelligent(m-p) like(3rd-m-s) one subject(f-s)
 "The intelligent students like one subject."

One way to explain this is to propose that there is a null universal quantifier in the plural subject DP in (2), and that that the same null universal quantifier could be present in the subject of sentence (2), which is also plural. Since this scopal ambiguity is limited to plural genitive phrases, and since this ambiguity is not limited to SCs, I conclude that heads of SCs are not quantifiers, although in plural contexts they are dominated by universal quantifiers. I claim that this universal quantifier is not specifically used with SCs, but with all definite plural DPs.

(95) a.



b.



As expected, N/SA, in parallel with N/A (§5.3.2.1), can be modified by neither adjectives nor adverbs. Moreover, the category N/SA has a feature structure very similar to the one of N/A, as shown is (96).

(96) N/SA: [Gender = M, Number =]

Therefore, it is expected that the number feature on N/SA maybe either assigned a singular or plural value. However, as explained in §5.4.1.2, the head of the SC is invariant and it appears to always have a singular number feature. If number agreement/valuation does take place, why is there no evidence of it? The answer to this question is that actually the singular and plural forms of the masculine superlative adjectives in Arabic are in fact the same, as can be seen in the examples in (97).

- (97) a. as-saidatu al-kubraa (MSA)
 the woman(f-s-nom) the oldest(f-s-nom)
 “the oldest woman”
- b. as-saidaatu al-kobraiatu (MSA)
 the women(f-p-nom) the oldest(f-p-nom)
 “the oldest women”
- c. ar-rajulu al-ʔakbaru (MSA)
 the man(m-s-nom) the oldest(m-s-nom)
 “the oldest man”

- d. ar-rijaalu al-ʔakbaru (MSA)
 the men(m-p-nom) the oldest(m-s/p-nom)
 “the oldest men”

On the one hand, examples (97a) and (97b) show that in the case of feminine gender, there are distinct singular and plural forms. On the other hand, the singular and plural forms of masculine superlative adjectives are in fact the same ((97c) and (97b)), and this is true for all superlative adjectives. Thus, given that the head produced in the morphological operation in (95) has a masculine gender feature, number agreement does not lead to distinct forms whether the number feature is valued as singular or plural. This explains why the same form can be followed by either a singular or a plural genitive DP, and how the same form can get either singular or plural interpretation in the ambiguous case explained in §5.4.1.2.

In this section, I argued that the head of the Superlative Construct is a complex category N/SA formed in the lexicon by combining a superlative adjective with a null nominal. This category has a masculine gender feature and an unvalued number feature. However, the valuation of this number feature does not have an overt effect because the singular and plural forms of masculine superlative adjectives are the same. In the following section, I will show how this head forms Superlative Constructs and how the number ambiguity in the case of definite plural genitive phrases can be explained.

5.4.2.2 Derivation

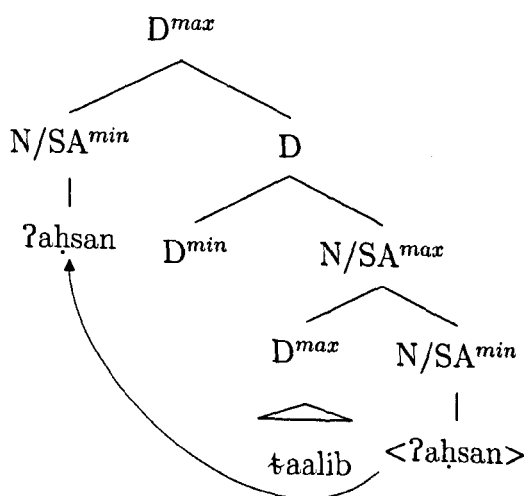
The Superlative Construct has the major characteristics of a Construct State, it functions as a nominal and its head has modificational properties. In this section I will develop an analysis of the SC which involves the Construct State D, explaining the construct-like properties. Moreover, to explain the number ambiguity when the genitive phrase is definite plural, I will propose that these cases are partitive structures with a structure similar to the one proposed for Nominalised Adjectival Constructs with a singular head.

As argued in §5.4.2.1, the N/SA head of the SC does require number agreement in order to have its number feature valued and checked, although this agreement does

not have an effect on the form of the head. I propose that the unambiguous cases explained in §5.4.1.2 involve agreement between the head and the genitive phrase in a similar configuration to that proposed for the plural form of the head of Nominalised Adjectival Constructs. Thus, an SC with a singular indefinite genitive phrase, such as (98a) analysed as (98b), would only be used to refer to one individual or thing. Similarly, an SC with a singular indefinite genitive phrase, such as (99a) analysed as (99b), would only be used to refer to more than one individual or thing. This correspondence between form and meaning suggests that straightforward agreement is taking place between the head and indefinite genitive phrases.

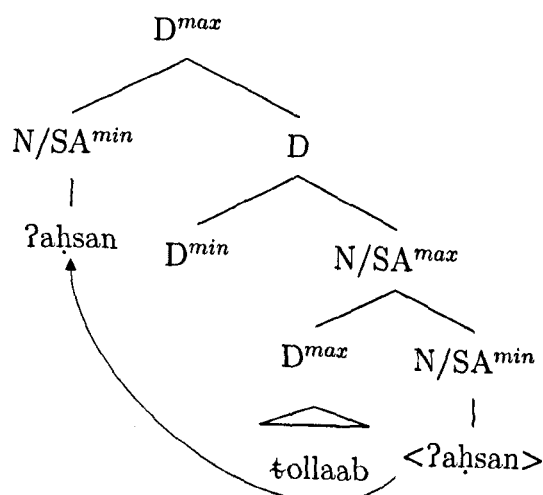
- (98) a. *ʔaḥsan ṭaalib* (MA)
 best student(m-s)
 “the best student”

b.



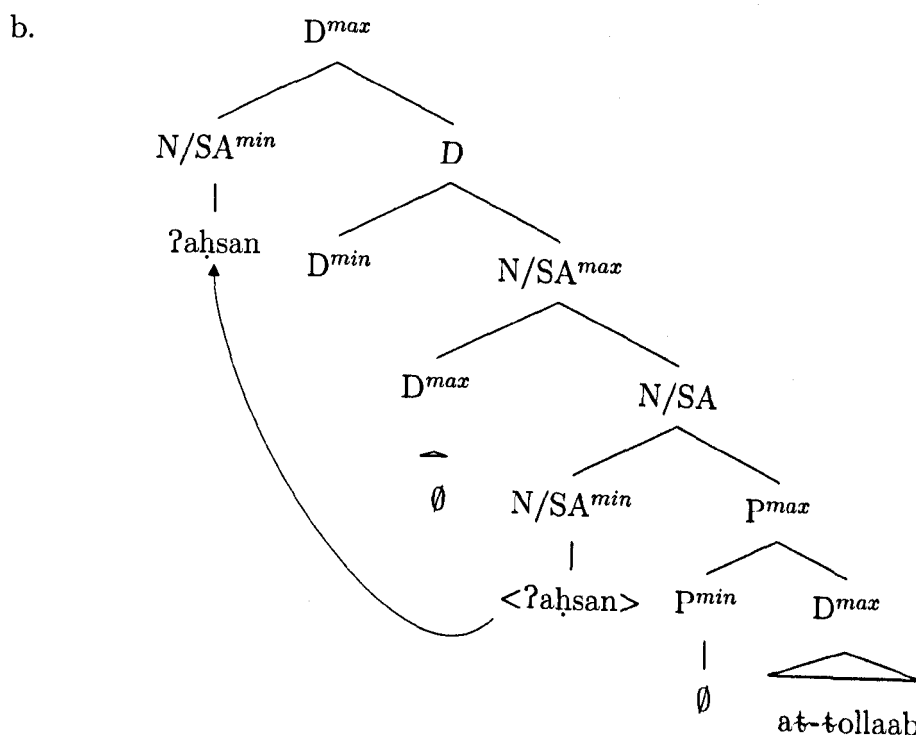
- (99) a. *ʔaḥsan ṭollaab* (MA)
 best the students(m-p)
 “the best students”

b.



When the genitive phrase is definite plural, the SC is ambiguous between a singular and a plural interpretation. The SC in (100a) would be used to refer to either one student who is the best among a group of students or a group of students who are the best among a larger group of students. I propose that this is a partitive structure similar to the one analysed in §5.3.2.2, with a null nominal which checks the genitive case feature of the Construct State D and a null preposition which checks genitive case on the genitive DP. As noted in §5.3.2.2, the null nominal in this structure has the default features masculine and singular, but it can mean either one or a group, which explains the ambiguity noted in this structure.

- (100) a. ʔaḥsan at-tollaab (MA)
 best the students(m-p)
 “the best (one of) the students”



Thus, it seems that the genitive phrases N/SA takes when it forms Construct States are required to be indefinite. These phrases may be either overt or null. In the former case they may be either singular or plural, and in the latter the genitive component is a null (indefinite) nominal with either a individual or group meaning which also forms a partitive structure. This explains why the missing cell in 5.1 is the singular definite one and not any other.

In this section, I have argued that N/SA can be the head of a Construct State, followed by an indefinite complement, resulting in straightforward agreement. As the head of a Superlative Construct, N/SA may also take two arguments: a null nominal which can mean either one or a group and a prepositional phrase with a null P. In this case, ambiguity arises as a result of the ambiguous meaning of the null nominal. The proposal made here treats Superlative Constructs and Nominalised Adjectival Constructs as very similar structures. This approach is supported by the fact that the two structures share many patterns, including having heads which (apparently) resemble adjectives. Nevertheless, the Superlative Construct also shares some features of Nominal Construct States, and most of these shared features are explained by having the Construct State D projected in both structures.

5.4.3 Final Remarks on the Superlative Construct

The Superlative Construct is the only type of Adjective-Headed DPs used in Makkan Arabic. In sections 5.2.3 and 5.3.3, I claimed that the reason Adjectival Compounds and Nominalised Adjectival Constructs are not a part of the syntax of this spoken variety is because the word formation strategies used in the derivation of the compound or the required heads were not available in Makkan Arabic. However, my analysis treats Nominalised Adjectival Constructs and Superlative Constructs as similar structures having complex categories as their heads. I claimed that the process which forms the head of the NAC is not a part of the grammar of Makkan Arabic. Consequently, it would be expected that the operation required to form the head of the SC would not be available either. If Makkan Arabic does not employ the word formation process required to form the head of the Nominalised Adjectival Construct, why does it allow the same operation to form the head of the Superlative Construct?

I explained in §5.4.1.1 that superlative forms cannot be used as adjectives in Makkan Arabic. The only usage this dialect allows for these forms is as heads of Superlative Constructs. One issue to consider here is whether Makkan Arabic does have superlative adjectives as a separate category or if it only has N/SA as a basic category. The first option would imply that superlative adjectives are a part of the grammar but that they cannot be used except to form N/SA. The other option would be that superlative forms in Makkan Arabic already have the feature structure required for them to be heads of Superlative Constructs and the word formation process proposed in §5.4.2.1 does not take place. The second option is the more minimalist, and therefore I argue that superlative adjectives are actually not a part of the grammar of Makkan Arabic. In other words, superlative forms in this variety of Arabic belong to a category which allows them to be heads of Construct States but not modifiers.

Superlative Constructs are nominal constructs with a head which superficially resembles an adjectival form. Analysing these constructions as Construct States headed by a nominalised head formed by combining a superlative adjective and a null nominal offers a way to explain its special characteristics as well as what this structure

shares with Nominal Construct States and Nominalised Adjectival Constructs.

5.5 Numeral Construct States

Arabic numerals can be used either as adjectives or as heads of Construct States. However, not all numbers behave in the same way with regard to the patterns they can form. In §5.5.1 I will briefly explain the adjectival use of cardinal and ordinal numbers, and in §5.5.2 I will illustrate their use in Construct States and propose that the head of the Numeral Construct State (NCS) is a complex category formed by the same operation proposed for Nominalised Adjectival Constructs and Superlative Constructs.

5.5.1 Adjectival Use

All cardinal and ordinal numbers in Arabic can be used as adjectives. They occur postnominally and agree with the noun they modify in definiteness and case, and in the case of ordinal number, in number and gender as well.

- (101) a. ar-rijaalu aṭ-ṭalaatatu (MSA)
 the men(m-p-nom) the three(nom)
 “the three men”
- b. ar-rajulu aṭ-ṭaalītu (MSA)
 the man(m-s-nom) the third(m-s-nom)
 “the third man”
- c. aṭ-ṭaalibatu aṭ-ṭaalītatu (MSA)
 the student(f-s-nom) the third(f-s-nom)
 “the third (female) student”

As postnominal adjectives, cardinal numbers are not variant with respect to number and gender, but ordinal numbers are more adjectival in that they inflect for number and gender.

5.5.2 Construct State Use

Some cardinal and ordinal numbers can be used as heads of Numeral Construct States. These constructs function as nominals and the case checked on the whole Construct is marked on the numerals, suggesting that the numeral is the head. I will briefly discuss the constructs headed by cardinal numerals and then those headed by ordinal ones.

5.5.2.1 Cardinal Construct States

Cardinal numbers starting from three can be used prenominally. Numbers 3-10 select plural indefinite genitive DPs (102a). The numbers 100 and 1000 and their multiples, however, are followed by singular indefinite genitive DPs (102b).²⁴

- (102) a. *ṭalaatatu ʔawlaadi-n* (MSA)
 three(nom) boys(m-p-gen) ind
 “three boys”
- b. *miʔatu waladi-n* (MSA)
 one hundred boy(m-s-gen) ind
 “one hundred boys”

The complex numbers, such as 13, 25 and 150 for example, are followed by singular indefinite accusative DPs. Case endings cannot be used on these numbers. The same form of the number is used regardless of the case checked on the whole construct.

- (103) *ʔaḥada ʕašara walada-n* (MSA)
 eleven boy(m-s-acc) (ind)
 “eleven boys”

I propose that the head of the Cardinal Construct State is a complex category N/CN formed by combining a cardinal number with a null nominal in a way similar to that proposed for Nominalised Adjectival Construct and Superlative Constructs. However, complex cardinal numbers as in (103) cannot be an input to this word

²⁴In Modern Standard Arabic, *waḥid* “one” and *ʔiṭnaan* “two” cannot be used to form Construct States. However, in Makkan Arabic, *waḥid* “one”, but not *ʔiṭnaan* “two”, can also be used as a head of a Cardinal Construct State.

formation process. Therefore, the structures these numbers are used in do not include genitive phrases. Thus, I claim that complex numerals do not form Construct States because they cannot be used in the word formation process required.²⁵

5.5.2.2 Ordinal Construct States

Ordinal numbers from 1st to 10th can be used in Construct States and they may be followed by indefinite singular or plural genitive DPs.

- (104) ?awalu waladi-n (MSA)
 first(nom) boy(m-s-gen) (ind)
 “the first boy”

Ordinal numbers bigger than 10th, however, cannot be used in this structure.

I propose that the head of the Ordinal Construct State is a complex head N/ON, formed by combining a null nominal and an ordinal number. The fact that more complex ordinal numbers cannot be used in this structure can provide more evidence that complex categories cannot be used in the word formation process required here.²⁶

The Arabic numeral system is full of irregularities and special patterns associated with specific numbers. Nevertheless, a general overview of this system suggests that the derivation of Numeral Construct States require complex heads formed by combining an “adjectival” numeral with a null nominal. Moreover, the fact that not all numerals can be used as heads of Construct States suggests that complex adjectival categories cannot combine with the null numeral to form the nominalised head required to form such Construct States.

²⁵The accusative case marked on the DPs following complex cardinal nouns is one of the least understood case patterns in Arabic. I will not attempt to explain this case assignment because I believe that doing that requires studying the Arabic accusative case in more depth. In the current context, I will simply assume that this is a mechanism specific to this structure.

²⁶The cardinal numbers 100 and 1000 can be used to form Construct States, as explained in §5.5.2.1, but their ordinal counterparts cannot. This suggests that the complexity of these cardinal numbers and their ordinal counterparts is different.

5.6 Conclusion

Adjective-Headed DPs are construct-state-like constructions which have an adjectival form as a head. In this chapter, I have identified three major structures which have adjectival heads: Adjectival Compounds, Nominalised Adjectival Constructs and Superlative Constructs. The first of these structures functions as a modifier, whereas the latter two function as nominals. Adjectival Compounds and Nominalised Adjectival Constructs are not used in Makkani Arabic, but the Superlative Construct is. I developed different analyses for these structures explaining the special behaviour of each of them. I argued that the Adjectival Compound is an construct-like compound formed in the lexicon, whereas the Nominalised Adjectival Construct and the Superlative Construct are formed in the syntax and they have a nominalised adjective as their head. I showed how projecting this nominalised adjective, a complex category formed by combining an adjective and a null nominal, can agree with different elements in different configurations leading to difference in form, in the case of the Nominalised Adjectival Construct, or ambiguity, in Superlative Constructs. I have also briefly argued that the same word formation process takes place in Numeral Construct States.

Considering the data in this chapter, the definition of the Construct State needs to be modified to include structures headed by categories such as N/A and N/SA. Thus, Construct States can be defined as nominal structures consisting of a nominal(ised) head and a genitive phrase where the head does not accept determiners but inherits the definiteness of the complement. This definition excludes the adjectival compounds discussed in §5.2 from being constructs because they are not nominal and their heads accept the definite article.

The analyses proposed for the various structures discussed in this chapter share the idea that the Arabic lexicon is a rich system. I have proposed that several complex word formation processes seem to take place in the lexical system producing complex entities which function as lexical items at the computation. Adjectival compounds are complex adjectives which function like simplex ones, with only the head syntactically active. The heads of Nominalised Adjectival Constructs and Superlative

Constructs also have properties of a mixture of two categories, and I claimed that if one assumes that they are inserted in the derivation with a special feature structure and categorial status, the unique agreement patterns associated with them can be easily explained. The idea of a complex lexicon with special word formation processes may be a controversial one, but it seems to be successful in explaining the data studied in this chapter. It does not mean that there is a “mini-syntax” in the lexicon; it simply means that Arabic has some unique word formation processes. Some of these processes may form complex categories which function in a similar way to related simplex ones, while others may change the feature structure of some lexical items.

In chapter 6 I will discuss another major type of Arabic Construct State: Verbal Noun Constructs. These structures exhibit intricate behaviour and Makkan Arabic allows only a subset of the patterns allowed by Modern Standard Arabic. I will propose an analysis of these structures and explain why the two Arabic varieties studied in this thesis allow different configurations of Verbal Noun Constructs.

Chapter 6

Verbal Nouns

6.1 Introduction

Arabic Verbal Nouns have been a rich topic of research for both traditional Arabic grammarians and generative linguists. The intricate patterns which Arabic Verbal Nouns can participate in have sparked this interest. These nouns sometimes show nominal-like properties, while in some cases their behaviour reflects that they are partly verbal in nature.

In traditional Arabic syntactic terminology, Arabic Verbal Nouns (VN) are referred to as *al-maṣḍar*. Arabic words are derived by applying roots to patterns, so it cannot be said that Arabic Verbal Nouns are derived from verbs in the same way that the English gerund, such as “eating”, is derived from the corresponding verb, “eat”, for example. Instead, *al-maṣḍar* is a collective term for a group of patterns which produce nouns which roughly mean “the process or action associated with a certain verb”. For example, the VN *ʔihdaaʔ* means “giving a present”, which is the action associated with the verb *yohdi* “give a present”, and both the VN and the V are derived from the root *h-d-a*. Another example of the derivation of Arabic VNs can be seen in *kitaaba* “writing” and *qiraaʔa* “reading”, which are both formed using the same pattern; they are both of the form *CiCaaCa*, where the Cs are the consonants of the root. Moreover, *qatl* “killing” is formed by another pattern: *CaCC*. However, there are sometimes subtle meaning differences associated with VNs derived by using

specific patterns. For example, *qitaal* and *moqaatala* both mean “fighting”, but the latter conveys a more intense degree of fighting than the former does due to the fact that it is of the pattern called *mofaa’ala* (*moCaaCaCa*), which is often associated with a more intense degree of the action.

Arabic Verbal Nouns can be used like any other Arabic noun; they can be used in simple DPs and Nominal Construct States, functioning like any other nominal in terms of pluralisation, modification, etc.. However, in some cases, Arabic Verbal Nouns show more verb-like behaviour, such as taking an accusative object and being modified by some adverbials. In this chapter, I will argue that these two uses roughly correspond to the distinction often made in the literature between simple and complex event nominals or result and process nominals (Grimshaw, 1990, for example). Simple and complex event nominals are two kinds of derived nominals, different from basic nouns like “apple” and “chair”, for example. These two types of nominals are clearly derived from verbs and they both refer to events rather than entities. However, these two types behave differently with regards to certain aspects like modification and determiners. To distinguish between these two kinds of event nominals I will use the criteria laid out by Grimshaw (1990), which I will introduce during the course of my exposition of the data.

I will first explain the use of Arabic Verbal Nouns as simple event nominals and argue that these nominals are lexically formed (§6.2). In §6.3, I will introduce the verb-like use of Arabic VNs and explain the different patterns available in Modern Standard Arabic; I will review the three major approaches to this structure in the generative literature in §6.4. In §6.5 I will propose an analysis for each of the patterns introduced in §6.3, attempting to explain the word order and the special properties of each one of them. In §6.6 I will show how the behaviour of Makkan Arabic Verbal Nouns differs from Modern Standard Arabic ones, and I will claim that these differences can be explained if one assumes that all Makkan Arabic Verbal Nouns are formed in the lexicon, not in the syntax. Finally, §6.7 concludes the chapter.

6.2 Arabic Verbal Nouns as Simple Event Nominals

Verbal Nouns in Arabic may be used like any other noun; for example, they may be used in simple DPs and Construct States and be modified by adjectives. In these uses, Verbal Nouns conform to the criteria set out by Grimshaw (1990) for distinguishing simple event nominals from complex ones. Grimshaw claims that the difference between these two types of event nominals lies in the fact that the former lack an argument structure whereas the latter possess one. She argues that cases when an event nominal seems to have an optional argument structure can be explained if one considers that nominal to be ambiguous between being simple and complex. As pointed out at the beginning of this chapter, Arabic Verbal Nouns have some uses which make them similar to basic nominals and some other uses which make them more similar to verbs. Following Grimshaw, I take this to suggest that Arabic Verbal Nouns are ambiguous between simple event nominals and complex ones. In this section I will discuss the use of VNs as simple event nominals in both simple DPs and Construct States in Modern Standard Arabic and show how these uses conform to Grimshaw’s criteria. I will leave the discussion of the Makkan Arabic data until §6.6 because there are some differences in the permissible modifiers in the two varieties, and discussing these differences together with other structures in Makkan Arabic will clarify the situation and provide a more appropriate context for explaining the data.

Verbal nouns in Modern Standard Arabic can be used in simple DPs. In this case determiners can be attached to the VN and the VN can be modified by adjectives, making it similar to all other nouns in Arabic.

- (1) a. haada mašiu-n baṭeeʔu-n. (MSA)
 this(m) walking(m-s-nom) ind slow(m-s-nom) ind
 “This is slow walking.”
- b. ʔoḥibbo al-qiraaʔata as-sareeʔata. (MSA)
 like(1-s) the reading(f-s-acc) the fast(f-s-acc)
 “I like the fast reading.”

As seen in (1a), when Verbal Nouns are in simple DPs, they can be used predica-

tively, which is expected under Grimshaw's (1990) criteria, which I will discuss more in section §6.3.2. Moreover, in line with Grimshaw's proposal, these VNs can be pluralised and be used with demonstratives, as shown in (2) and (3), respectively.

(2) ?axbarto-ha °an qiraa?aat-i. (MSA)
told(1-s) her about readings(f-p-acc) my
"I told her about my readings."

(3) haada al-hojoomu (MSA)
this(m-s) the attack(m-s-nom)
"this attack"

Verbal Nouns may also be used as heads of Construct States. In some cases, the VN functions like any head of a Nominal Construct State; it is followed by a genitive DP and can be modified by adjectives which come after the genitive phrase, as shown in (4).

(4) kitaabaatu al-mo?allifi al-jadeedatu (MSA)
writings(f-p-nom) the writer(m-s-gen) the new(f-s-nom)
"the new works of the writer"

However, the use of Verbal Nouns in Construct States is very complex and may involve numerous patterns. I will discuss these uses in detail in §6.3, but one should keep in mind the point noted here; sometimes Verbal Nouns in Construct States simply behave like any other noun head of Nominal Construct States. I will discuss this point further later in the chapter.

There are some simple event Verbal Nouns in Arabic which may not be pluralised, and this might seem to be conflicting with the criteria laid out by Grimshaw (1990). However, I claim that these nouns which cannot pluralise are still simple event nominals, but that they cannot be pluralised because they are mass nouns. While the noun *qiraa?a* "reading" may be either count or mass and therefore may be pluralised, the noun *naom* "sleeping" is only mass and cannot be pluralised. Nevertheless, both nouns can be used in simple DPs and Construct States like any other nominal, and I treat them both as simple event nominals.

(5) a. al-qiraa?atu (MSA)
the reading(f-s-nom)
"reading"

- b. al-qiraaʔaatu (MSA)
 the readings(f-p-nom)
 “the readings”
- c. an-naomu (MSA)
 the sleeping(m-s-nom)
 “sleeping”

The Verbal Nouns discussed in this section syntactically behave like mainstream Arabic Nouns. Some of them are mass, some are count, they accept modification by adjectives, they can be pluralised and they are used in nominal positions. Thus, I propose that these Verbal Nouns are formed in the lexicon and that they enter the derivation as nouns. Their feature structure is that of a noun, and the phrase marker treats them as regular nominals.

This section has briefly shown that Arabic Verbal Nouns may be used as basic nominals, syntactically functioning as any noun would, and I claimed that these VNs enter the derivation as Ns, with nothing special in their feature structure. However, there are some cases when Verbal Nouns do not function like basic nouns. Verbal Nouns are sometimes modified by adverbials, not adjectives, and they may take a number of arguments similar to the one the verb they are derivationally related to does. In the next section I will explain these more complex uses of Arabic Verbal Nouns and show how these uses suggest that the VNs used in these cases are different from basic nominals.

6.3 Syntactically Complex Verbal Noun Construct States

Arabic Verbal nouns may form Construct State constructions which differ from those seen in §6.2 in several respects. These differences relate to three main aspects: the category of the modifiers of the VN, the number of arguments the VN takes and the case checked on these arguments. The possible structures and configurations are intricate, and in some cases there seems to be a degree of optionality in allowable elements. I will introduce the various structures where the VN seems to have properties

different from a basic nominal (§6.3.1), and then I will show that the VN in these structures has the characteristics of complex event nominals (§6.3.2). I will limit the present discussion to Modern Standard Arabic, and I will discuss the differences found in Makkan Arabic in §6.6.

6.3.1 Patterns

Verbal Nouns in Construct States may take one or more arguments. In the majority of the cases considered in this section, the head of the Verbal Noun Construct State (VNCS) can be modified by an adverbial prepositional phrase. In some cases, modification by adjectives is an option, but sometimes it is not. I will first introduce the range of arguments the VN may take. After that I will discuss each pattern in turn and explain the type of modifiers allowed.

Arabic Verbal Nouns may form Construct States with any of the arguments the verbs they relate to take. For example, the VN *qafzu* “jumping” in (6a) can form a Construct State with an agent as the genitive component, the same argument the related verb *yaqfizo* “jump” takes as a subject. Similarly, the VN may have a theme as the genitive component in the construct, as seen in (6b), where the genitive phrase following *ramia* “throwing” is the same argument the related verb *yarmi* “throw” takes as an object. Moreover, a VN related to a transitive verb may overtly realise the two arguments the related verb takes, as shown in (6c).

- (6) a. *qafzu* *al-ʔaʔaaʔi* *xaʔeeru-n.*
 jumping(m-s-nom) the children(m-p-gen) dangerous(m-s-nom) ind
 (MSA)

“It is dangerous for children to jump.”

- b. *taʕallamto ramia* *ar-rimaah̄i.* (MSA)
 learned(1-s) throwing(m-s-acc) the spears(m-p-gen)
 “I learned how to throw spears.”

- c. *samiʕto ʕan šorbi* *ar-rajoli*
 heard(1-s) about drinking(m-s-gen) the man(m-s-gen)
al-qahoata. (MSA)
 the coffee(f-s-acc)
 “I heard about the man drinking the coffee.”

The literature usually refers to the genitive phrases following the VN head of a Construct State as being either a “subject” or an “object”. Since this imposes a verb-like treatment on the data, I will use the terms “external argument” and “internal argument” instead. The use of these terms has the advantage of making the context less verb-oriented and more in terms of arguments rather than specific positions. This use also has an advantage over speaking about theta roles because DPs in the same position may have different theta roles depending on the VN or V used. Thus, in the rest of the discussion in this chapter, I will mainly use the terms “external argument” to refer to a DP which would be the subject of the verb the VN relates to and “internal argument” to refer to the object.

As is the case with regards to the other types of Construct States studied in this thesis, external case is checked on the head of the VNCS, the Verbal Noun itself, according to the position of the construct in the sentence, whereas genitive case is checked on the phrase following the VN. In examples (6a), (6b) and (6c) the head of the VNCS is marked for nominative, accusative and genitive case, respectively, while the following DP is marked genitive in all cases. Example (6c) shows that when two arguments are used with the VN, genitive case is checked on the first argument while the second one is marked for accusative case. This, however, is not the only option.

When a VN is derivationally related to a transitive verb, it is possible for both the external argument and the internal argument to be overtly realised. In such a case, it is possible for the internal argument to follow the genitive external argument and be marked accusative, as shown in (6c) above. Nevertheless, it is also possible to realise the internal argument in a prepositional phrase also following the genitive phrase. Both options are shown in (7) below.

- (7) a. ?aklu al-waladi at-toffaahata (MSA)
 eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc)
 “the boy’s eating the apple”
- b. ?aklu al-waladi li-t-toffaahati (MSA)
 eating(m-s-nom) the boy(m-s-gen) of the apple(f-s-gen)
 “the boy’s eating of the apple”

One of the most discussed properties of VNCSs is the fact that in some cases it

is possible to modify the head VN with a prepositional adverbial which follows the genitive phrase (Hazout, 1991, 1995; Fassi-Fehri, 1993a, for example). This modification pattern is often thought to be compatible with two-argument VNCSs with an accusative internal argument but not with those with a PP internal argument or with one argument only. It is often assumed that there is a complementary distribution between modification by PP adverbials and modification by adjectives. However, the situation is not as clear-cut as is usually assumed and in some cases both modification by adjectives and modification by PP adverbials are possible in the same patterns.

It is often claimed in the literature (Fassi-Fehri, 1993a, for example) that modification by PP adverbials is not possible if the VN takes only one argument and that the only possible modification in these cases is by adjectives, as noted in §6.2. However, I find that modification by both adjectives and PP adverbials is acceptable, as shown in (8). However, although modification by PP adverbials is acceptable, modification by non-prepositional adverbials is not (8c).¹

- (8) a. jariu al-^caddaaʔi as-saree^cu (MSA)
 running(m-s-nom) the runner(m-s-gen) the fast(m-s-nom)
 “the runner’s fast running”
- b. jariu al-^caddaaʔi bi-sor^cati-n (MSA)
 running(m-s-nom) the runner(m-s-gen) with speed(f-s-gen)
 “the runner’s fast running”
- c. *jariu al-^caddaaʔi saree^can (MSA)
 running(m-s-nom) the runner(m-s-gen) fast(adv)
 “the runner’s fast running”

The modification patterns of two-argument VNCSs depend on the status of the internal argument. When the internal argument is in a PP, the VN can be modified by an adjective falling between the genitive phrase and the PP argument, as shown in (9a). Again the bulk of the literature on this topic claims that modification by an adjective is the only possibility (Fassi-Fehri, 1993a, for example), but here too I find modification by a PP adverbial modifier which follows the object PP permissible, as in (9b).

¹As explained in §2.2, non-prepositional Arabic adverbs have the same form as accusative indefinite masculine singular adjectives.

- (9) a. ?aklu al-waladi as-saree^cu
 eating(m-s-nom) the boy(m-s-gen) the fast(m-s-nom)
 li-t-toffaaḥati (MSA)
 of the apple(f-s-gen)
 “the boy’s fast eating of the apple”
- b. ?aklu al-waladi li-t-toffaaḥati
 eating(m-s-nom) the boy(m-s-gen) of the apple(f-s-gen)
 bi-sor^cati-n (MSA)
 with speed(f-s-gen) ind
 “the boy’s fast eating of the apple”

However, when the internal argument is an accusative DP, the only possible modification for the VN is with a PP adverbial following the accusative DP, as shown in (10a). In this case it is not possible to modify the VN with an adjective placed either between the two arguments or at the end of to the right of the accusative DP ((10b) and (10c)). Moreover, as seen in the case of one-argument VNCSs, it is not possible to use adverbs instead of PP adverbials to modify the VN in this case (10d).

- (10) a. ?aklu al-waladi at-toffaaḥata
 eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc)
 bi-sor^cati-n (MSA)
 with speed(f-s-gen) ind
 “the boy’s fast eating of the apple”
- b. * ?aklu al-waladi at-toffaaḥata
 eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc)
 as-saree^cu (MSA)
 the fast(m-s-nom)
 “the boy’s fast eating of the apple”
- c. * ?aklu al-waladi as-saree^cu
 eating(m-s-nom) the boy(m-s-gen) the fast(m-s-nom)
 at-toffaaḥata (MSA)
 the apple(f-s-acc)
 “the boy’s fast eating of the apple”

- d. *ʔaklu al-waladi at-toffaahata sareeʿan
 eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc) fast(adv)
 (MSA)

“the boy’s fast eating of the apple”

The examples I have used so far to illustrate PP adverbial modification all involve adverbials of manner, but PP adverbials of place and time can also be used in this context, as shown in (11a) and (11b).

- (11) a. ɛarbu al-modarrisi ʔollaaba-ho fi
 beating(m-s-nom) the teacher(m-s-gen) students(m-s-acc) his in
 al-faʕli (MSA)
 the classroom(m-s-gen)
 “the teacher’s beating his students in the classroom”
- b. ɡinaaʔu-ha haadihi al-ʔoɡniati fi
 singing(m-s-nom) her this(f-s) the song(f-s-gen) in
 aʕ-ʕabaaʕi (MSA)
 the morning(m-s-gen)
 “her singing this song in the morning”

Verbal Nouns related to verbs with more complex argument structures may also form VNCSs, and the arguments used in the Construct State and their relative orders are similar to those of the related verbs. For example, the verb *hajama* “attack” in (12a) and the VN *hojoomu* “attack” in (12b) have the same arguments, and these arguments occur in the same order in both cases, i.e., the external argument precedes a PP internal argument.

- (12) a. hajama al-ʿadou ʿala al-madeenati. (MSA)
 attacked(3-m-s) the enemy(m-s-nom) on the city(f-s-gen)
 “The enemy attacked the city.”
- b. hojoomu al-ʿadoi ʿala al-madeenati (MSA)
 attack(m-s-nom) the enemy(m-s-gen) on the city(f-s-gen)
 “The enemy’s attack on the city”

In such structures, it is possible to modify the VN with a PP adverbial, as shown in (13a). Modification with an adjective is also possible but rather marginal (13b).

- (13) a. hojoomu al-^cadoi ^cala al-madcenati
 attack(m-s-nom) the enemy(m-s-gen) on the city(f-s-gen)
 bi-šaraasati-n (MSA)
 with ferociousness(f-s-gen)
 “The enemy’s attack on the city with ferociousness”
- b. ?hojoomu al-^cadoi aš-šarisu ^cala
 attack(m-s-nom) the enemy(m-s-gen) the ferocious(m-s-nom) on
 al-madcenati (MSA)
 the city(f-s-gen)
 “The enemy’s ferocious attack on the city”

Verbal Nouns related to ditransitive verbs can also form VNCSs, taking an external argument and two internal arguments, which I am going to refer to as “direct object” and “indirect object” for ease of exposition. These two objects may appear in two orders with respect to one another, and these two orders are the same as the patterns used with related ditransitive verbs. On the one hand, the indirect object may precede the direct object and accusative case is marked on both objects ((14a) and (15a)). On the other hand, the direct object may come first, with the indirect object in a prepositional phrase following the direct object. In this case, accusative case is marked only on the direct object, as shown in (14b) and (15b).

- (14) a. ?a^ctaa a~~t~~-tifu ?omma-ho zahrata-n.
 gave(3-s-m) the child(m-s-nom) mother(f-s-acc) his flower(f-s-acc) ind
 (MSA)
 “The child gave his mother a flower.”
- b. ?a^ctaa a~~t~~-tifu zahrata-n
 gave(3-s-m) the child(m-s-nom) flower(f-s-acc) ind
 li-?ommi-hi. (MSA)
 to mother(f-s-acc) his
 “The child gave a flower to his mother.”
- (15) a. ?i^ctaa?u a~~t~~-tifi ?omma-ho
 giving(m-s-nom) the child(m-s-gen) mother(f-s-acc) his
 zahrata-n (MSA)
 flower(f-s-acc) ind
 “the child’s giving his mother a flower”

- b. ?i^ctaaʔu aʔ-tifi zahrata-n
 giving(m-s-nom) the child(m-s-gen) flower(f-s-acc) ind
 li-ʔommi-hi (MSA)
 to mother(f-s-acc) his
 “the child’s giving of a flower to his mother”

Thus, the two possible orders of the arguments in a ditransitive VNCS, their case and categorial status are the same as those of the related verbs.

When explaining the behaviour of transitive VNCSs, I explained that it is possible for the internal argument to be a prepositional phrase rather than an accusative DP (see example (7b)), which is not an available option for the object of an Arabic transitive verb. However, it is not possible for the internal arguments of ditransitive VNCSs to be categorially different from those of the related verb. For example, it is not possible for the “direct object” in a VNCS to be a PP rather than an accusative DP, as shown in (16a).

- (16) a. *?i^ctaaʔu aʔ-tifi ʔomma-ho
 giving(m-s-nom) the child(m-s-gen) mother(f-s-acc) his
 li-zahrati-n (MSA)
 of flower(f-s-gen) ind
 “the child’s giving his mother a flower”
- b. *?i^ctaaʔu aʔ-tifi li-zahrati-n
 giving(m-s-nom) the child(m-s-gen) of flower(f-s-gen) ind
 li-ʔommi-hi
 to mother(f-s-acc) his
 “the child’s giving a flower to his mother”

Thus, the only possible orders and categories of arguments in ditransitive VNCSs are those which are available for the arguments of ditransitive verbs.

Moreover, the only possible modification of the VN in ditransitive VNCSs is with an adverbial PP, as shown in (17).

- (17) a. ?i^ctaaʔu aʔ-tifi ʔomma-ho
 giving(m-s-nom) the child(m-s-gen) mother(f-s-acc) his
 zahrata-n bi-kolli ʔobbi-n (MSA)
 flower(f-s-acc) ind with all(gen) love(m-s-gen) ind
 “the child’s giving his mother a flower with all love”

- b. ?i^ct^aaʔu aʔ-tifli zahrata-n
 giving(m-s-nom) the child(m-s-gen) flower(f-s-acc) ind
 li-ʔommi-hi bi-kolli ʔobbi-n (MSA)
 to mother(f-s-acc) his with all(gen) love(m-s-gen) ind
 “the child’s giving a flower to his mother with all love”

It is not possible to use an adjective to modify the VN wherever the adjective is positioned, as shown in the ungrammatical examples in (18).

- (18) a. * ?i^ct^aaʔu aʔ-tiflati al-moʔibbu
 giving(m-s-nom) the child(f-s-gen) the loving(m-s-nom)
 ʔomma-ha zahrata-n (MSA)
 mother(f-s-acc) her flower(f-s-acc) ind
 “the child’s giving her mother a flower lovingly”
- b. * ?i^ct^aaʔu aʔ-tiflati al-moʔibbu
 giving(m-s-nom) the child(f-s-gen) the loving(m-s-nom)
 zahrata-n li-ʔommi-ha (MSA)
 flower(f-s-acc) ind to mother(f-s-acc) her the loving(m-s-nom)
 “the child’s giving a flower to her mother lovingly”

In this section, I introduced various types of Verbal Noun Construct States. Different types of Verbal Nouns can form different structures, and in the majority of cases it is possible to modify the VN with a PP adverbial modifier. Sometimes modification by adjectives is also possible. Table 6.1 summarises the patterns discussed in this section.

Table 6.1: Verbal Noun Construct States

	Adjective	PP adverbial
VN + external arg.	✓	✓
VN + internal arg.	✓	✓
VN + external arg. + internal arg. (acc)	X	✓
VN + external arg. + PP internal arg.	✓	✓
Di-VN + external argument + IO (acc) + DO (acc)	X	✓
Di-VN + external arg. + DO (acc) + PP IO	X	✓
VN + external arg. + PP complement	✓	✓

In the next section, I will show that the Verbal Nouns in the patterns I have introduced here show the characteristics of complex event nominals, suggesting that

they are formed as a part of the syntactic part of the derivation of the Verbal Noun Construct State.

6.3.2 Verbal Nouns as Complex Event Nominals

Verbal Noun heads of Construct States may have argument structures similar to those of verbs. As shown in §6.3.1, a VNCS may have the complete (or sometimes incomplete) set of arguments associated with the verb that the head of the construct is related to. For example, a transitive VN may take either an internal argument, an external argument, or both. Similarly, a ditransitive VNCS may take an external argument and two internal ones. Grimshaw (1990) uses the term “complex event nominals” to refer to argument taking nominals, and she proposes a set of criteria to distinguish complex event nominals from simple event nominals, which she proposes do not have an argument structure. Her system is based on English data, but I will assume that the main principles of her proposal can generally be applied to other languages.²

The first diagnostic proposed by Grimshaw relates to the meaning of possessives. She claims that possessives in a complex event nominal have a subject meaning, but possessives in simple event nominals are ambiguous between a number of meanings. For example, in (19a) below, “John” may be either the examiner or the examined, but in (19b), “John” can only be the agent of the action. In the latter case, the fact that the noun has an argument structure is reflected in the use of a DP denoting the theme “the patients”.

- (19) a. John’s examination was long. (Grimshaw Grimshaw: 48)
 b. John’s examination of the patients took a long time. (Grimshaw Grimshaw: 48)

²I will only use a subset of the criteria proposed by Grimshaw (1990) because the structural differences between English and Arabic makes it difficult to apply some of her criteria to Arabic. Mainly, I will exclude the diagnostics based on demonstratives and postnominal possessives because these two systems are structured very differently in the two languages and it is not plausible to discuss them in similar terms.

Thus, according to Grimshaw's proposal, "examination" is ambiguous between being a simple event nominal (19a) and a complex event one (19b).

Careful examination of the meaning of the different types of VNCSs introduced in §6.3.1 suggests that the meaning of the possessive, genitive DP, does usually have a "subject" meaning. For example, in (20a) and (20b) where the VN clearly has an argument structure as reflected in the use of the internal argument, *al-waladi* "the boy" does have subject meaning.

- (20) a. *ʔeeqaadhu* *al-waladi* *ʔabaa-ho* (MSA)
waking(m-s-nom) the boy(m-s-gen) father(m-s-acc) his
"the boy's waking up his father"
- b. *ʔeeqaadhu* *al-waladi* *li-ʔabee-hi* (MSA)
waking(m-s-nom) the boy(m-s-gen) of father(m-s-gen) his
"the boy's waking up of his father"

However, the situation is less clear in one-argument VNCS. Although the genitive phrase is sometimes potentially ambiguous between subject and object interpretations, as shown in (21a), it is usually the case that this phrase can be associated with one interpretation, as shown in (21b) and (21c).

- (21) a. *rasmu* *al-waladi* (MSA)
painting(m-s-nom) the boy(m-s-gen)
"the painting by the boy" or "the painting showing the boy"
- b. *ʔaklu* *al-waladi* (MSA)
eating(m-s-nom) the boy(m-s-gen)
"the boy's eating"
- c. *ʔaklu* *at-tofaaḥati* (MSA)
eating(m-s-nom) the apple(f-s-gen)
"the eating of the apple"

I claim that the ambiguity observed in example (21a) is a result of the fact that the genitive DP *al-waladi* "the boy" is potentially compatible with more than one position in theta grid of the VN *rasmu* "painting", and because it is not obligatory to fill all the positions of theta grid of some Arabic VNs, a one-argument VNCS as in (21a) is potentially ambiguous. Nevertheless, the genitive DP *al-waladi* "the boy" in (21b) is only compatible with the external argument position of the VN *ʔaklu*

“eating”, and thus that is the only possible interpretation. Similarly, *at-tofaḥati* “the apple” in (21b) is only compatible with the internal argument position of *ʔaklu* “eating” and thus that is the only interpretation available. This data then suggest that even one-argument VNCS may have argument structures, though there is no requirement for that structure to be a complete one.

Grimshaw argues that complex event nominals do not pluralise, while simple event nominals do. For example, the plural noun “assignments” can only be used as a simple event nominal (22a), not a complex one (22b).

- (22) a. The assignments were wrong. (Grimshaw Grimshaw: 54)
 b. *The assignments of the problems took a long time. (Grimshaw Grimshaw: 54)

Complex event Arabic Verbal Nouns do not pluralise either. The plural form of Verbal Nouns does not have the “process” meaning, but rather a countable meaning such as types or instances of something. For instance, the plural of a VN like *rasm* “painting”, *rosoomaat* “paintings”, is a plural count noun referring to several items rather than the process of painting itself. Such a plural noun cannot be the head of the complex VNCSs discussed in §6.3.1, not with the meaning of “process”.³

- (23) a. *rosoomaatu at-ṭollaabi bi-sor^catin (MSA)
 paintings(f-p-nom) the students(m-p-gen) with speed(f-s-gen)
 b. *rosoomaatu az-zahrati bi-sor^catin (MSA)
 paintings(f-p-nom) the flower(f-s-gen) with speed(f-s-gen)
 c. *rosoomaatu at-ṭollaabi az-zahrata (MSA)
 paintings(f-p-nom) the students(m-p-gen) the flower(f-s-acc)
 d. *rosoomaatu at-ṭollaabi li-z-zahrati
 paintings(f-p-nom) the students(m-p-gen) of the flower(f-s-gen)
 (MSA)

Grimshaw notes that complex event nominals resist indefinite “subjects”. For example, the indefinite DP “a teacher” is not as good as a prenominal possessor

³In examples (23a) and (23b) I used PP adverbials to make sure that the structure is clearly the one we are investigating here, since accepting modification by PP adverbials is one of the characteristics of a complex event VN.

(24a), which is the normal position of the “subject” of a complex event nominal, while it is more acceptable in a by-phrase, for example (24b).

- (24) a. ?? A teacher’s assignment of the problem. (Grimshaw Grimshaw: 55)
 b. The assignment of the problem by a teacher. (Grimshaw Grimshaw: 55)

Arabic Verbal Nouns also resist indefinite “subjects” or external arguments. This is especially clear in one-argument VNCSs, where an indefinite internal argument is more acceptable than an indefinite external argument. While (25a) is grammatical, (25b) is at best marginal.

- (25) a. ġazou madeenati-n (MSA)
 invasion/invading city(f-s-gen) ind
 “invading a city”
 b. ?? ġazou ʿadoi-n (MSA)
 invasion/invading enemy(m-s-gen) ind
 “the invasion of an enemy”

Grimshaw points out that complex event nominals do not occur predicatively or with equational *be*, whereas result nominals do. Thus, a nominal with an argument structure cannot be used after *be*, as shown in (26b).

- (26) a. That was the/an assignment. (Grimshaw Grimshaw: 55)
 b. *That was the/an assignment of the problem. (Grimshaw Grimshaw: 55)

Similarly, complex event Arabic Verbal Nouns cannot be used predicatively. Arabic Verbal Nouns can only be used predicatively to convey a countable meaning, such as the way of performing an action or an instance of an action. A VNCS which is clearly a “complex event” as a result of, for example, having two arguments cannot be used predicatively. Thus, while (27a) with a countable meaning for the Verbal Noun is grammatical with a countable interpretation, (27b) and (27c) are not acceptable because the countable meaning is not available with their argument structure. The only interpretation available for these VNCSs is a “process” one, and with this interpretation these constructs cannot be used predicatively.

- (27) a. haṭa ṭaklu al-waladi. (MSA)
 this(m-s) eating(m-s-nom) the boy(m-s-gen)
 “This is the boy’s way of eating.” or “This is the boy’s food.”
- b. * haṭa ṭaklu at-toffaḥati. (MSA)
 this(m-s) eating(m-s-nom) the apple(f-s-gen)
 “This is the eating of the apple.”
- c. * haṭa ṭaklu al-waladi at-toffaḥata/
 this(m-s) eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc)
 li-t-toffaḥati. (MSA)
 of the apple(f-s-gen)
 “This is the boy’s eating of the apple.”

Grimshaw claims that certain types of modifiers can be used only with complex event nominals. These modifiers include action-oriented ones such as *frequent* and *constant* (28) and agent-oriented adjectives such as *intentional* and *deliberate*.

- (28) a. * The constant assignment is to be avoided. (Grimshaw Grimshaw: 50)
- b. The constant assignment of unsolvable problems is to be avoided. (Grimshaw Grimshaw: 50)

Moreover, complex event nominals license aspectual modifiers like *in an hour*, *for six weeks* and *while* clauses, but simple events do not. In other words, Complex event nominals admit the same aspectual modifiers verbs do.

- (29) a. The total destruction of the city in only two days appalled everyone. (Grimshaw Grimshaw: 58)
- b. * The total destruction of the city for two days appalled everyone. (Grimshaw, 1990, p. 58)
- c. The bombing destroyed the city in only two days/*for two days. (Grimshaw Grimshaw: 58)
- (30) * Jack’s trip in five hours/for five hours was interesting. (Grimshaw Grimshaw: 58)

Complex event Arabic Verbal Nouns take the modifiers Grimshaw associates with complex event nominals. However, these modifiers are in the form of PP adverbials,

as shown in (31). Example (31a) uses an action-oriented modifier *bi-estimraari-n* “constantly” and example (31b) contains an agent-oriented modifier *bi-ʔiṣraari-n* “stubbornly”.

- (31) a. *ḍarbu* *al-modarrisi* *ṭollaabah-o*
 beating(m-s-nom) the teacher(m-s-gen) students(m-p-acc)
bi-estimraari-n (MSA)
 with constancy(m-s-gen) ind
 “the teacher’s constant beating of his students”
- b. *daqu-ho* *al-baaba*
 knocking(m-s-nom) his the door(m-s-acc)
bi-ʔiṣraari-n (MSA)
 with stubbornness/intent(m-s-gen) ind
 “his knocking of the door stubbornly”

Arabic Verbal Nouns also take the same aspectual modifiers related verbs take, as shown in (32), where both the verb *naama* “slept” (32a) and the VN *naomu* “sleeping” (32b) can be modified by *li-moddati saaʿati-n* “for an hour”.

- (32) a. *naama* *aṭ-ṭiflu* *li-moddati* *saaʿati-n*
 slept(3-m-s) the child(m-s-nom) for duration(f-s-gen) hour(f-s-gen) ind
 (MSA)
 “The child slept for an hour.”
- b. *naomu* *aṭ-ṭifli* *li-moddati*
 sleeping(m-s-nom) the child(m-s-gen) for duration(f-s-gen)
saaʿati-n (MSA)
 hour(f-s-gen) ind
 “?the child’s sleeping for an hour”

In this section, I have argued that syntactically complex Arabic Verbal Nouns of the types discussed in §6.3.1 have the properties of complex event nominals. According to Grimshaw (1990), complex event nominals have argument structures, while simple event nominals do not. Grimshaw’s analysis is mainly semantic and she does not propose a link between the presence or lack of an argument structure and whether the nominal is formed in the syntax or in the lexicon. Assuming that LF is fed by syntax, I expect that a syntactically derived VN counts as a nominal at LF, as does a lexically formed one. Thus, at the level Grimshaw’s criteria apply, both lexically

and syntactically formed VNs are nominals. What distinguishes them is whether or not they have an argument structure. I assume here that the presence of an argument structure on a nominal suggests that that nominal is formed by a more complex process than that involved in the derivation of a simple event nominal and that this derivation process results in the nominal having an argument structure. In §6.4 I will review some of the accounts found in the literature attempting to characterise that derivational process, and in §6.5 I will propose my own analysis.

6.4 Previous Accounts

Generative studies on Arabic Verbal Nouns generally focus on a number of issues. The first issue relates to the verb-like characteristics of VNs, mainly accusative case on the “object” in two-argument VNCSs and modification by PP adverbials. The second issue relates to the prepositional strategy in two-argument VNCSs and how this structure, which can be modified by adjectives, relates to the structure where accusative case is checked on the internal argument. A third issue concerns one-argument VNCS where only an internal argument is used, but genitive case, instead of accusative, is marked on that argument. Moreover, some also attempt to explain why it is PP adverbials and not adverbs that can be used as modifiers of VNs in some cases. In this section I will offer a brief overview of how these issues are dealt with in the literature.

There are three main approaches to Verbal Noun Construct States in Semitic languages. On the one hand, there is the lexicalist approach, which claims that VNs are formed in in the lexicon and there is nothing syntactically special about Verbal Noun Construct States. On the other hand, there is the derivational approach, which argues that the derivation of VNs takes place in the syntax, and proposals falling under this category usually project a V in the structure and use standard Head Movement to explain the change of category from verbal to nominal. There is also a third approach which claims that the formation of Verbal Nouns takes place at different points in different cases. I will discuss each of these approaches separately

and show the advantages and/or disadvantages of each approach.

6.4.1 Lexical Accounts

Siloni (1997) defends a lexicalist approach to Verbal Nouns in Semitic languages. She considers the Verbal Noun to be basically a *noun*, like any other. She does not read much into the fact that Verbal Nouns normally refer to processes, taking that to be a part of the lexical information encoded in the VN itself. She attempts to explain the special behaviour of Verbal Noun Construct States without assuming that there are any verbal elements in their derivation. For example, she argues that the PP adverbial modifiers used in most VNCSs are actually not adverbial; she claims that these PPs are modifiers for Ns rather than Vs. She claims that this is supported by the fact that single-word adverbs cannot be used in this structure. She also argues that the accusative case on the object is actually not a structural case, but rather an inherent case. Her main argument for this status of accusative case is the fact that in Hebrew the restrictions on accusative case on the object of Verbal Nouns are different from those on accusative case assigned by verbs, as shown in the examples in (33) (Siloni 1997: 79).

- (33) a. ha-cava haras *('et) ha-'ir. (MH)
 the-army destroyed (ACC) the-city
 "The army destroyed the city."
- b. ha-cava haras (*'et) 'ir 'axat. (MH)
 the-army destroyed (ACC) city one
 "The army destroyed one city."
- c. harisat ha-cava 'et ha-'ir (MH)
 destruction the-army ACC the-city
 "the army's destruction of the city"
- d. *harisat ha-cava ('et) 'ir 'axat (MH)
 destruction the-army ACC city one
 "the army's destruction of one city"

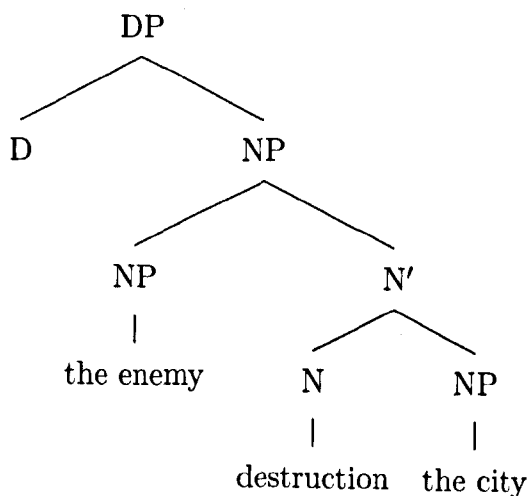
In examples (33a) and (33b) which show accusative case assignment in a verbal context, the particle *'et* appears on definite accusative objects, but not on indefinite ones. However, in the case of accusative case assignment in Verbal Noun Construct

States as shown in (33c) and (33d), *'et* is obligatory, and consequently indefinite objects are excluded. Siloni argues that this would not be expected if a verb were projected in Verbal Noun Construct States, as the majority of the literature claims. Thus, she concludes that VNs are just Ns, with no verbal structure at all.

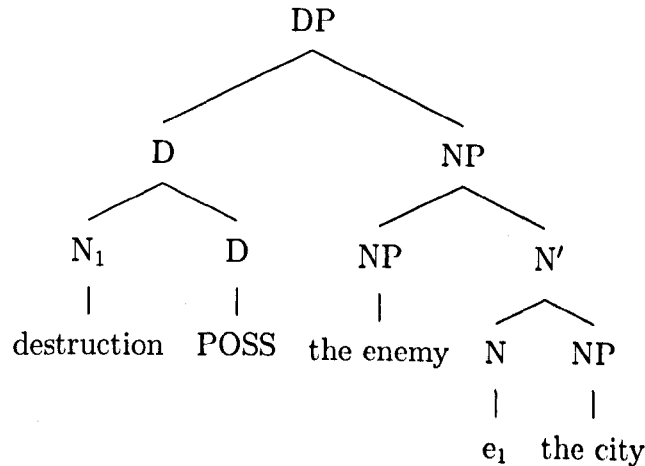
However, there are a few problems with Siloni's analysis. One issue with her account is that it does not explain how adjectival modifiers can be excluded. If the PP adverbials are not really adverbial, and Verbal Nouns are just Ns, then why are adjectives not allowed as modifiers when the PP modifiers are? Another problem regards the distribution of the particle *'et* and accusative case. Why should the restriction be related to accusative case assignment and not to the definiteness pattern allowed for the genitive phrase? It could be the case that in Hebrew, in the context of a Verbal Noun, only definite objects are allowed, which would give the same pattern as in Siloni's examples. Moreover, this restriction is not seen in Arabic, so it would be hard to justify carrying that argument over to Arabic, especially since there could be an alternative explanation for the Hebrew data.

When considering possible lexical approaches to Semitic Verbal Nouns, Hazout (1991) presents and argues against a possible lexical analysis, which he represents as (34) (Hazout 1991: 180-181).

(34) a.



b.



This account basically derives the Verbal Noun Construct State in the same way any other Nominal Construct State is derived, moving the VN and adjoining it to D. Hazout, however, provides several arguments against such an analysis. One argument is similar to one point I raised in regards to Siloni's (1997) proposal; i.e., that this analysis does not explain why adjectives are excluded from these structures while PP adverbials are allowed. Another argument Hazout provides is based on "subjectless" Verbal Noun Construct States, or one-argument VNCSs with an internal argument as the genitive component, as in the Arabic example in (35) (Hazout 1991: 189).

- (35) *ʔaklu at-toffaḥati bi-sor^cati-n* (MSA)
 eating(m-s-nom) the apple(f-s-gen) with speed(f-s-gen) ind
 "the eating of the apple quickly"

In (35), the VNCS is formed with the internal argument, which is assigned genitive case. Hazout claims that adopting the analysis in (34) would mean that the object is generated as the specifier of NP because it is this position which gets assigned genitive case. The problem, according to Hazout is that there is some data suggesting that the genitive phrase in such structures must not be generated in the spec/NP position because a PRO would need to occupy that position. Consider example (36) (Hazout 1991: 190).

- (36) *yoreedu zaidun naqla al-kitaabi ʔilaa*
 want(3-m-s) Zaid(nom) transportation(m-s-acc) the book(m-s-gen) to
 bayroot. (MSA)
 Beirut
 "Zaid wants to transport the book to Beirut"

In this example, the only possible interpretation is for Zaid, the matrix subject, to be the one who is to do the transporting. Hazout claims that this is a case of control into the Verbal Noun Construct State and that for the observed meaning to be available, there must be a PRO in the spec/NP position. I accept Hazout's point as a valid argument against the lexicalist proposal he considers, but I do not adopt his explanation for the control reading in the sentence in (36). I will raise this issue again in §6.5.3 and offer an alternative account.

In this section, I argued that the lexical approaches to Arabic Verbal Nouns proposed by Siloni (1997) and considered by Hazout (1991) cannot account for the special properties of Verbal Noun Construct States. Mainly, if all Verbal Nouns are inserted in the structure as Ns, one cannot explain why some VNCS do not accept modification by adjectives. Moreover, treating VNs as Ns seems not to offer a complex enough structure to accommodate some data, such as control into VNCSs. Although I have argued in §6.2 that in some cases Arabic Verbal Nouns seem to behave like regular nouns, this lexical treatment cannot be extended to cover the more complex cases explained in §6.3.1. In the next section, I will discuss the derivational approach to Semitic Verbal Nouns, which takes the opposite view claiming that all Semitic Verbal Nouns are formed in the syntactic component.

6.4.2 Syntactic Accounts

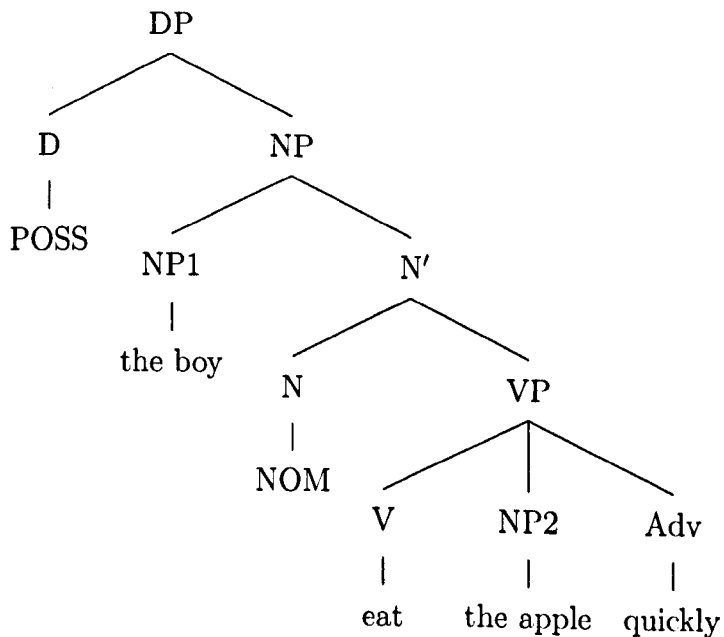
The main supporter of syntactic approaches to Semitic Verbal Nouns is Hazout (1991, 1995), and the term he uses to refer to the syntactic process which forms Verbal Nouns is "action nominalisation". He projects a verb in his structures, but the most important feature of his analysis is NOM, an abstract bound morpheme. In this section, I will review his analysis of different types of Verbal Noun Construct States.

The first case that Hazout considers is the Verbal Noun Construct State which includes a genitive external argument and an accusative internal argument. He proposes that the derivation of this structure involves two consecutive cases of Head Movement. For example, the derivation of example (37) (Hazout 1991: 156) would consist of the derivational steps shown in (38) (Hazout 1991: 157-159). The verb first

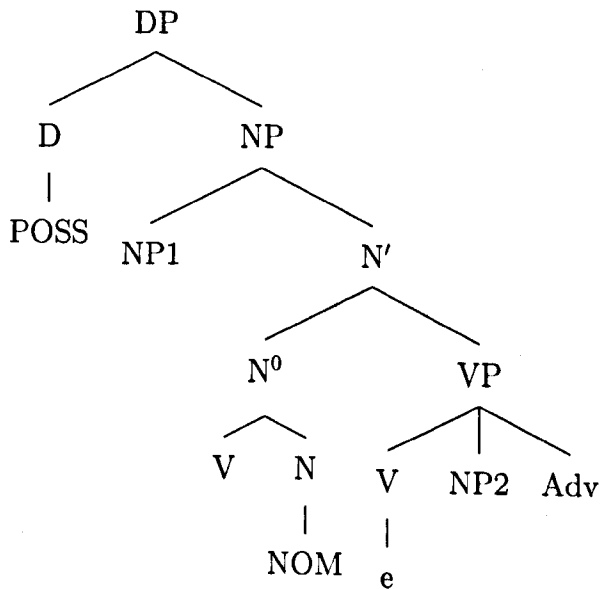
moves and adjoins to N, which includes NOM, and then the N complex moves and adjoins to D, as would usually be assumed for other types of Construct State (see chapter 4).

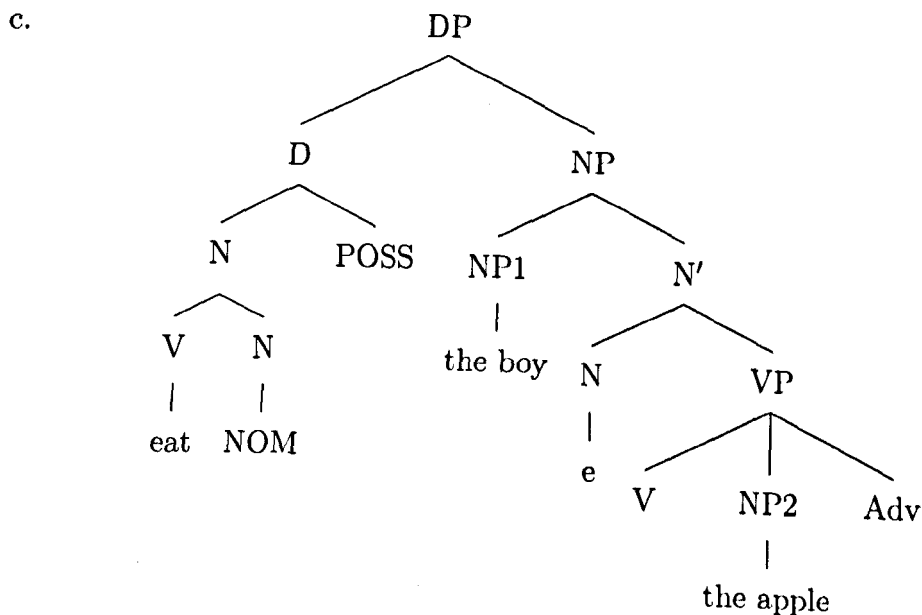
- (37) axilat ha-yeled et ha-tapuax bi-mehirut (MII)
 eating the boy OM the apple quickly
 "The boy's eating the apple quickly"

(38) a.



b.



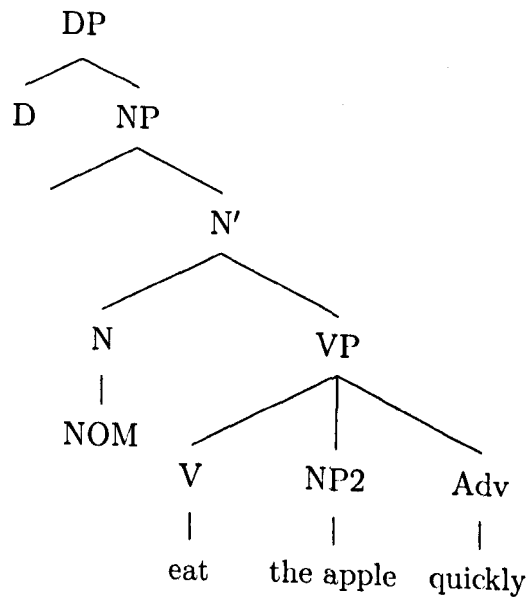


NOM in Hazout's analysis is a nominal bound morpheme, and he claims that it subcategorises (c-selects) for a VP. Moreover, he considers NOM to be an abstract element rather than a specific suffix, which explains the observed fact that Verbal Nouns are not formed by applying a single derivational technique, but that they have a variety of forms (see §6.1). Under his account, the Verbal Noun is formed by Head Movement of V to NOM (38b). The N formed as a result of this movement is then moved to D (38c). Under this analysis the verb assigns accusative case to the internal argument, and POSS in D assigns genitive case to the external argument. This mechanism of genitive case assignment is similar to what is usually assumed about genitive case in Construct States; i.e., that it is D, or an element in D, which is responsible for the case assigned to the genitive phrase (see chapter 4). And finally, PP adverbials are analysed as being modifiers of VP; under the framework used by Hazout (1991), these are represented as sisters of the verb and its complement(s).

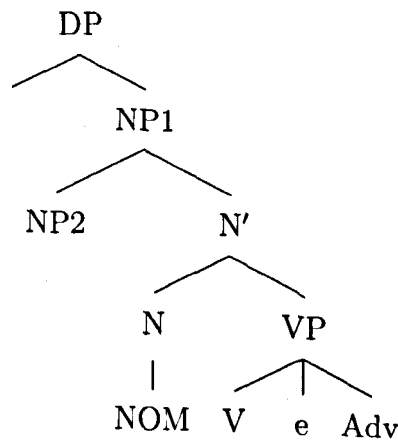
The second structure which Hazout considers is the "subjectless" Verbal Noun Construct State, i.e., one-argument VNCSs with an internal argument as the genitive component. The important issue to explain in this structure is how the internal argument gets genitive case not accusative case even though a V is still projected in the structure. To explain the fact that the internal argument is marked with genitive case, Hazout claims that the derivation of this structure involves one more step: the

internal argument of the verb moves to spec NP, as shown in (39) (Hazout 1995: 369-370). He claims that this movement takes place because accusative case cannot be assigned to the internal argument in this case, and that this is due to the properties of the argument structure of NOM, as I will explain shortly.

(39) a.



b.

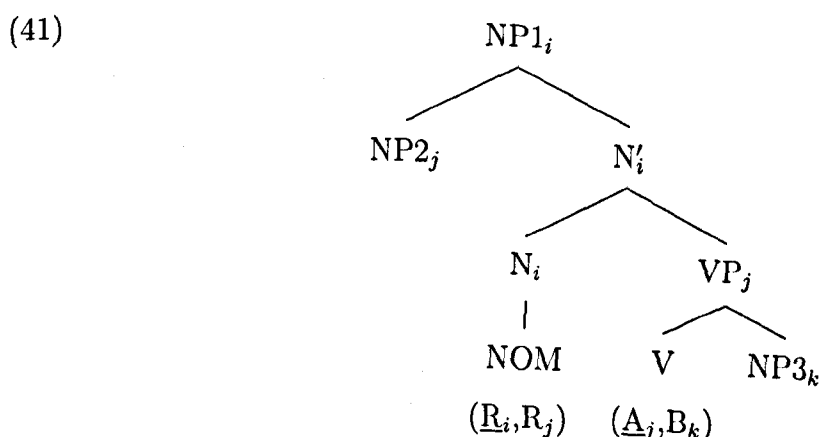


NOM is actually the most important element in Hazout's analysis. He claims that NOM has an argument structure and that it assigns two theta roles: an *external theta* role and an internal one. In his account, the external theta role is referential and it is assigned (or passed) upwards, becoming the external theta role of the whole NP. The internal theta role is assigned to an argument. Thus the lexical representation of NOM is the following:

- (40) a. Argument structure of NOM: (\underline{R}_i, R_j)
 b. Subcategorization frame of NOM: [$_ VP$]

(Hazout 1995: 370)

Hazout's adopts Williams's (1989) idea that theta role assignment is an asymmetric relation of linking or coindexation. Thus, in the case of a two-argument Verbal Noun Construct State which includes a genitive external argument and an accusative internal argument, theta roles are assigned in the following manner (Hazout 1995: 372).

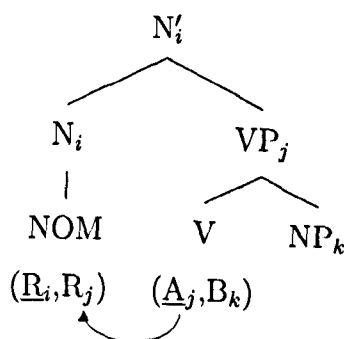


Both NOM and V have two theta roles each. The internal theta role of V is assigned to the accusative NP (NP3). The external theta role of V is assigned to (co-indexed with) the internal theta role of NOM. This internal theta role of NOM is in its turn co-indexed with the genitive NP (NP2) in spec/NP1, thus it is NP2 which eventually counts as the external argument of V. In other words, the external theta role of V is ultimately assigned to the genitive DP, but this takes place over two steps, with the internal theta role of NOM serving as an intermediate link between V and the genitive DP. Finally, as noted before, the external theta role of NOM is assigned vertically to the whole CS.

In "subjectless" cases, however, the process of theta role assignment is a little different because there is no nominal in spec/NP, i.e., no external argument to be assigned genitive case. In this case the external theta role of V is assigned to the internal theta role of NOM, but the internal theta role of NOM cannot be co-indexed with an NP because there is no NP in its specifier position; NP1 in (41) is not

projected. As a result, theta role is not passed any further and NOM itself counts as the external argument of V. This derivation is shown in (42) (Hazout 1995: 371).

(42)



Hazout claims that accusative case assignment takes place in the “environment” of specific functional elements, such as INFL and NOM, only if they are [-Nominal]. He assumes that these functional elements may be either + or - Nominal depending on the way they thematically interact with other elements in the structure. In the case shown in (41), NOM does not function as an argument and therefore it is considered [-Nominal], allowing the object in its domain to be assigned accusative case; the external theta role of the V which had been assigned to the internal theta role of NOM has been passed onto the subject, leaving NOM itself without a role. However, in (42) NOM is assigned the external theta role of V, and thus it can be considered [+Nominal], preventing accusative case assignment in its domain.⁴

The main problem of Hazout’s treatment of Semitic Verbal Nouns relates to his approach to theta role assignment. There is a degree of inconsistency in the way the different theta roles are assigned. The way the external theta roles of V and NOM are assigned is not the same. The external theta role of V is co-indexed with the internal theta role of NOM, but the external theta role of NOM is assigned upwards; in other words, the node which is assigned that theta role of NOM dominates the assigning node in the latter case but not the former. Moreover, the way the internal theta role of NOM functions is rather theoretically problematic. This theta role is co-indexed with the external theta role of V and in some cases co-indexed with the

⁴Hazout (1995) does not explicitly explain his definition of “domain” and “environment”, but in his use of these terms VP is in the domain of NOM. I will tentatively define the domain of NOM as all nodes dominated by the maximal projection dominating NOM, i.e., NP.

genitive DP. In Hazout's analysis of the subjectless VNCS, the co-indexation with V's external role is sufficient to satisfy NOM's internal theta role. So, how can the extra step of co-indexation with the genitive DP required in two-argument VNCSs be licensed? Furthermore, having a functional element (NOM) as the external argument of V in "subjectless" VNCSs seems questionable. Can NOM function as an argument at LF? Another problem relates to the way accusative case assignment is treated. If it is the verb which assigns the accusative case to the object, what prevents that assignment from taking place before the rest of the structure is projected? The analysis proposed by Hazout (1991, 1995) poses some theoretical problems; the main element in the proposal - NOM - raises some issues which need to be resolved in order to make the analysis more consistent and explanatorily adequate.

The syntactic account of Semitic Verbal Nouns projects a V in the structure of Verbal Noun Construct States and proposes that Head Movement of V-to-N results in the formation of the Verbal Noun. As explained, the other details of this account pose some problems, but there are some other accounts in the literature which also propose that the formation of Semitic Verbal Nouns take place in the syntax as a result projecting a V and then moving it to N. However, some of these other accounts treat the different kinds of VNCSs less uniformly than Hazout (1991, 1995) tries to do. While Hazout assumes that all VNs are formed in the same part of the syntactic derivation, some alternative accounts claim that the formation of the VN may take place at different points in the derivation. I will discuss two of these accounts in the next section.

6.4.3 Different Points in the Derivation

In the previous two sections, I briefly looked at two approaches to the derivation of Semitic Verbal Nouns: one purely lexical and another purely syntactic. However, there are some proposals in the literature to treat different types of Verbal Nouns differently, depending on the structure they occur in. In this section I will discuss two proposals which claim that the formation of Verbal Nouns takes place at different stages in the derivation.

Fassi-Fehri (1993a) distinguishes between lexically formed *masdars* (VNs) and syntactically formed one. The distinction he makes is roughly parallel to the one I argued for in §6.2 and §6.3. On the one hand, in some cases VNs are very similar to other nouns in some properties like being compatible with pluralisation and adjectives, for example (see §6.2). On the other hand, in some structures Arabic VNs have the characteristics of “process” nominals, to use Fassi-Fehri’s terminology, and they are more compatible with being derived syntactically (see §6.3.2). Moreover, Fassi-Fehri argues that not all syntactically derived VNs are formed at the same point in the derivation. He proposes that there are three points in the syntactic derivation where V could combine with a nominalising affix. Forming the VN at each one of these points would produce a slightly different structure, explaining the differences observed between the different kinds of Verbal Noun Construct States discussed in §6.3.1. In the following discussion, I will explain the structures which Fassi-Fehri considers and show how he proposes to derive each one of them.

Fassi-Fehri argues that a V and a nominalising affix are projected in Verbal Noun Construct States and that combining V and the affix changes the category of V to N. He proposes that the nominalising affix has an event theta role and that this theta role must be discharged under thematic identification with a similar theta role in theta grid of the verb. Under this account, the lexical entry of the nominalising affix is (43) (Fassi-Fehri 1993a: 235).

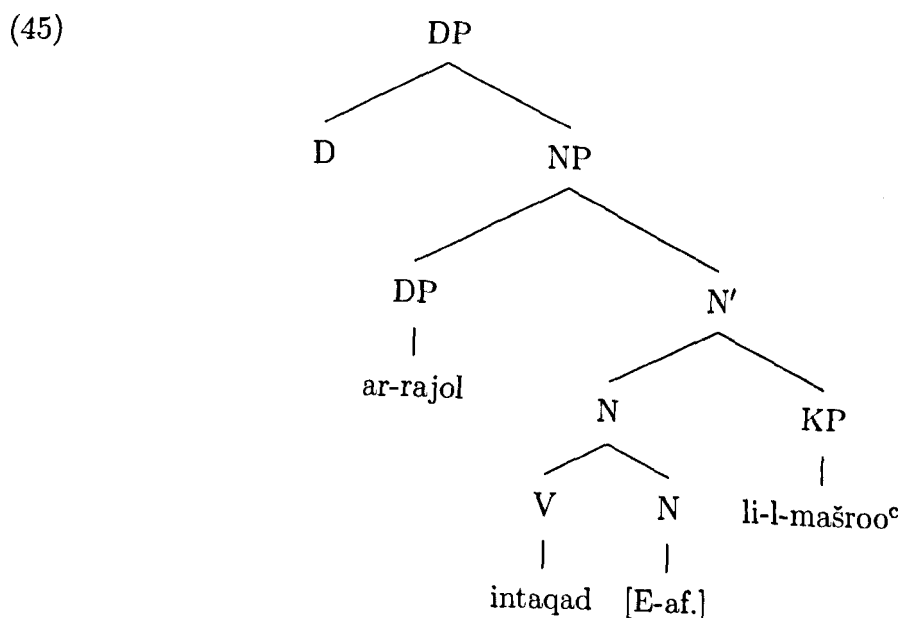
- (43) a. <af.<E>>
 b. (V,N)

Fassi-Fehri analyses three structures which he claims include this affix. The first structure he considers is the two-argument Verbal Noun Construct State with a genitive external argument and a PP object, as in (44) (Fassi-Fehri 1993a: 234).

- (44) ?aqlaqa-ni intiqaaadu ar-rajoli
 annoyed(3-m-s) me criticising(m-s-nom) the man(m-s-gen)
 li-l-mašroo‘i. (MSA)
 to the project(m-s-gen)
 “The man’s criticising (of) the project annoyed me.”⁵

⁵Fassi-Fehri uses *of* in his translation, but a native speaker of English does not accept the use

He argues that in this case the formation of the *masdar* takes place at a “pre-head” level, and that V does not project.⁶ In other words, the argument structure of the verb is not reflected in the representation of the Verbal Noun. The main contribution of V is its E theta role, which checks the E theta role on *af.*. The preposition is inserted before the DP denoting the internal argument in order to assign case to it. The derivation he provides is (45) (Fassi-Fehri 1993a: 235) (irrelevant details omitted).



The second structure he considers is the two-argument Verbal Noun Construct State with a genitive external argument and an accusative internal argument, as shown in (46) (Fassi-Fehri 1993a: 234).

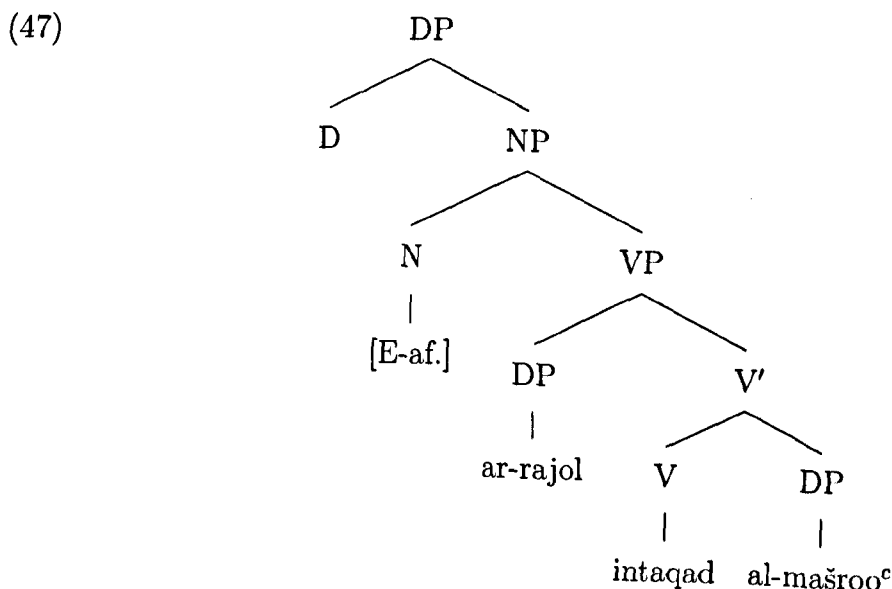
- (46) ʔaqlaqa-ni intiqaadu ar-rajoli
 annoyed(3-m-s) me criticising(m-s-nom) the man(m-s-gen)
 al-mašrooʿa. (MSA)
 the project(m-s-acc)
 “The man’s criticising the project annoyed me.”

Fassi-Fehri argues that in this case V is merged lower than *af.* and that the change of category takes place as a result of moving V and adjoining it to *af.*. In this case, there is a full VP projection, and as a result the whole theta grid of the verb projects. He

of the preposition in this structure, hence the parenthesis.

⁶“Level” here refers to a point in the derivation. In this case, for example, V combines with the affix at the point the two are merged together, before any other parts of the structure are built.

claims that this explains accusative case assignment to the internal argument, under the assumption that V assigns accusative case. Moreover, PP adverbials can be used in this structure, as they can adjoin to the VP. In this case, the formation of the Verbal Noun takes place at a stage later than in the first case (two-argument PP internal argument). He analyses example (46) as (47) (Fassi-Fehri 1993a: 240) (irrelevant details omitted).



This analysis is similar to the one advocated in Hazout (1991, 1995); the differences between the two proposals lies in the name of the nominalising affix and its feature structure.

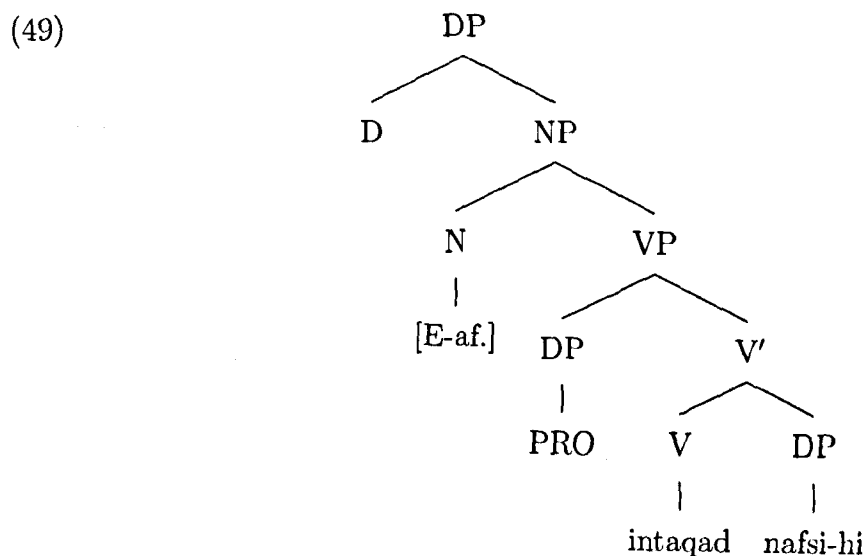
The third case Fassi-Fehri (1993a) considers is the one-argument Verbal Noun Construct State where only a genitive internal argument is used, as in (48) (Fassi-Fehri 1993a: 242).

- (48) yoreedu intiqada nafsihi. (MSA)
 want(3-m-s) criticising(m-s-acc) himself(gen)
 "He wants to criticise himself."

As I explained at the beginning of §6.4, this structure is considered a significant one in the literature because genitive case, rather than accusative case, is checked on the internal argument. This is different from the first case Fassi-Fehri considers ((44) analysed as (45)), where the internal argument is also genitive, but in that case a genitive external argument is used and a preposition assigns the genitive case to the

internal argument. In this case, no (overt) external argument is used and the internal argument is assigned structural genitive case.

Fassi-Fehri analyses the VNCS in (48) as (49) (Fassi-Fehri 1993a: 242).



In his analysis for internal-argument-only VNCSs, Fassi-Fehri also has a full VP projection and he assumes that the formation of the *masdar* is the result of standard Head Movement. Nevertheless, he proposes that a PRO is the external argument of the verb and he base-generates the internal argument as an object of V. He proposes that this object moves to spec/NP at LF in order for its case to be checked. He assumes that “object” case can be “discharger” or assigned only if “subject” case is “discharged”. Since the “subject” in this case is PRO which is caseless in the framework he is adopting, “object” (accusative) case cannot be assigned. Therefore, the “object” has to move to spec/NP and it gets genitive case. As pointed out before, he proposes that this movement is not overt as it takes place at LF.

In its essence, Fassi-Fehri’s (1993a) account is similar to Abney’s (1987) treatment of the English gerund; i.e., the *-ing* suffix attaches at different points in the structure.

However, there are a number of problems with Fassi-Fehri’s (1993a) proposal. One part of the analysis which is not very clear is the syntactic status of the derivation of the VN in the PP object Construct States ((44) analysed as (45)). Why can that process not be lexical, especially since the V does not project at all? One other problem is the idea that the internal argument DP moves to spec NP at LF to check

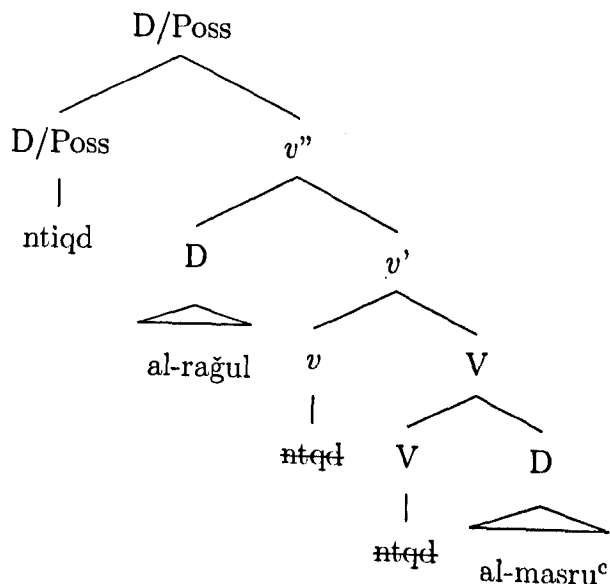
case. If that movement was necessary, why could it not be overt? Fassi-Fehri does not offer an argument for why such a movement should be covert. Moreover, what prevents accusative case from being “checked” on that DP as soon as V is merged? Another problem is related to the use of PRO in the third case Fassi-Fehri considers. the status of PRO is not clear in Arabic. If it is assumed to be projected in this case, what are the implications for Arabic syntax in general? Would PRO be available in other structures or is it limited to this particular construct only?

Kremers (2003) proposes a more “minimalist” version of Fassi-Fehri’s (1993a) analysis. He claims that the status of an affix which attaches to different levels of the structure, Fassi-Fehri’s *af.*, is not clear in current linguistic theory. Thus, he modifies this element of the latter’s analysis while maintaining the main idea that the derivation of different cases of Verbal Noun Construct States takes place at different stages. He argues that this analysis makes *masdars* very similar to English gerunds.

Kremers claims that two-argument VNCSs with accusative internal arguments represent a mixture of the structure of a sentence and that of a DP. He argues that both a V and *v* are projected at the beginning of the derivation of these VNCSs, but at the point where T would be projected in a sentence, D is projected instead. He analyses (50a) as (50b) (Kremers 2003: 137).

- (50) a. intaqaadu ar-rajoli al-mašroo^ca (MSA)
 criticising(m-s-nom) the man(m-s-gen) the project(m-s-acc)
 “the man’s criticising the project”

b.

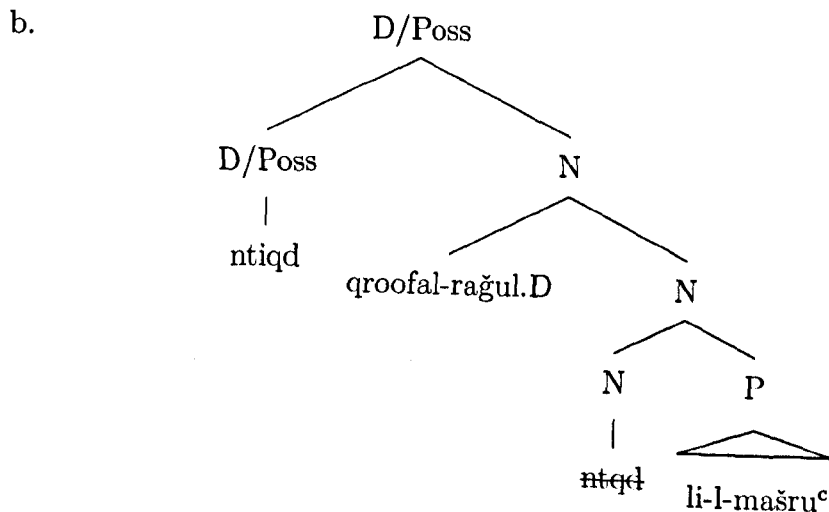


Kremers argues that his account explains accusative case assignment, as *v* assigns case to the object, which is the accusative case assigning head in sentences. He also claims that the derivation includes two instances of standard Head Movement: *V* moves to *v* and then to *D*. However, he does not explain how the morphological alteration of the verb takes place. Is *D* itself the nominalisation affix? If so, is this *D* the same *D* which is projected in other Arabic Construct States, or is it different? If it is the same, what is the source of its category and form changing ability? If it is different, what exactly are its properties? If it is not *D* which causes the categorial and morphological change, then what does? Kremers (2003) did not elaborate on any of these questions.

Kremers also considers two-argument Verbal Noun Construct States where the internal argument is a PP. He argues that in this case, *v* is not projected and thus no accusative case is assigned. He claims that in this case, the switch from verb to noun takes place in the lexicon, and that this structure is actually a straightforward CS structure, as shown in (51) (Kremers 2003: 138).

- (51) a. intaqadu ar-rajoli li-l-maşrooç'i
 criticising(m-s-nom) the man(m-s-gen) of the project(m-s-gen)
 (MSA)

“the man’s criticising of the project”



Kremers's analysis of the structure in (50) can accommodate PP adverbials as adjuncts to VPs. However, as pointed out in §6.3.1, the structure in (51) can also accept modification by PP adverbials, but Kremers's analysis of this structure does not involve a VP projection. Kremers claims that the structure in (51) can be modified by PP adverbs despite the fact that it does not have a verbal projection because modification by PP adverbs is licensed by the event and argument structure of the Verbal Noun. Moreover, he claims that the PP adverbials used with the Arabic Verbal Nouns require semantic licensing only and do not require syntactic licensing. This makes them different from adverbs, which he assumes require syntactic licensing, making them unavailable in the domain of Verbal Nouns. Kremers, however, does not explain the nature of this licensing, but he claims that it is similar to the difference between the licensing requirements for accusative objects and PP objects. Accusative objects, he assumes, require both semantic and syntactic licensing, but PP objects require only semantic licensing. However, this proposal still does not explain the fact that adverbs are not allowed with accusative objects even though a verbal structure is present and syntactic licensing would be expected to be possible in (50).

The two proposals I have reviewed in this section have a common feature with Hazout's (1991) account reviewed in §6.4.2; they all project a V at least in some types of Verbal Noun Construct States. The main motivation for the projection of V (and *v*) is to explain accusative case assignment in two-argument VNCSs. However,

the analyses differ in the way they treat the other types of VNCS and explain other patterns such as modification by PP adverbials. In the next section, I will propose a new minimalist account for Modern Standard Arabic Verbal Noun Construct State. My analysis shares the feature common in the bulk of the literature; I assume that a V is projected in VNCSs of the types discussed in §6.3.1 and that the formation of the Verbal Noun takes place in the syntax. However, I differ in the way I explain the details of the patterns, such as PP adverbials and the genitive case checked on the internal argument in one-argument VNCSs.

6.5 Proposed Analysis

Arabic Verbal Nouns can be used in various Construct States structures taking one or more arguments and accepting modification by PP adverbials and/or adjectives. The picture is quite complex. In some cases accusative case is checked on internal arguments, but in some other cases it is not. Some VNCSs allow modification by adjectives, while some others allow modification by PP adverbials either as the only acceptable modifiers or one of the acceptable modifiers. In the following sections, I will develop an approach to Verbal Noun Construct States explaining the various aspects of their behaviour. First, I will consider the issue of modification and propose that modification by PP adverbials is allowed in the cases where the Verbal Noun is syntactically formed and argue that the structures which allow modification by both adjectives and PP adverbials are ambiguous between having a syntactically formed head and a lexically formed one (§6.5.1). In §6.5.2 I will briefly consider and reject an analysis of complex event VNs as being formed by the word formation process proposed for some types of Adjective-Headed Constructs in chapter 5. In §6.5.3 I will propose an analysis which accommodates the different structures discussed in §6.3.1 and explains their special behaviour.

6.5.1 Ambiguities

In my discussion of the data in §6.3.1 I mentioned some disagreement between what I assume and what the literature reports about the use of adjectival and PP adverbial modifiers in the different structures Verbal Nouns can occur in. In this section I will explain this disagreement and claim that it suggests that the head of the structure which allows the two types of modifiers is ambiguous between being lexically and syntactically formed.

Table 6.1 summarised the patterns discussed in §6.3.1 and indicated the types of modification allowed in each pattern. Table 6.2 includes the same patterns, with the addition of non-construct Verbal Nouns, as in example (1) in §6.2. I will assume that modification by adjectives indicates that the VN in a given structure is purely nominal and has been formed in the lexicon, as proposed in §6.2. I will also assume that modification by PP adverbials is licensed when the formation of the VN takes place in the syntactic part of the derivation of the VNCS; the details of where the PP adverbial is adjoined will be discussed in §6.5.3. I will treat the patterns which allow two kinds of modifiers as ambiguous between being formed in the syntax or in the lexicon. I will discuss all of the patterns shown in table 6.2 and show that this ambiguity hypothesis is supported by the data.

Table 6.2: Modification of Verbal Nouns

	Adjective	PP adverbial
VN (non-construct)	✓	X
VN + external arg.	✓	✓
VN + internal arg.	✓	✓
VN + external arg. + internal arg. (acc)	X	✓
VN + external arg. + PP internal arg.	✓	✓
VN + external argument + IO (acc) + DO (acc)	X	✓
VN + external arg. + DO (acc) + PP IO	X	✓
VN + external arg. + PP complement	✓	✓

A PP adverbial modifier is possible in all the patterns shown in table 6.2 except for the non-construct VN, as in (52).

- (52) a. al-^codoanu al-ḡaašimu (MSA)
 the attack(m-s-nom) the ferocious(m-s-nom)
 “the ferocious attacks”
- b. * al-^codoanu bi-šaraasati-n (MSA)
 the attack(m-s-nom) with ferociousness(f-s-gen) ind
 “the ferocious attacks”

In this case the only possible modifier is the adjective. I take this to support the idea proposed in §6.2 that in such structures the VN is functioning like a regular noun and it can be modified by adjectives just like regular nouns. In this case the formation of the Verbal Noun takes place in the lexicon, resulting in a noun which can be modified by adjectives, pluralised and affixed to articles, as explained in §6.2.

There are three cases in table 6.2 where the only possible modifier is a PP adverbial. These are two-argument VNCS with an accusative internal argument (53), ditransitive VNCSs with two accusative objects (54) and ditransitive VNCSs with an accusative direct object and a PP indirect object (55).

- (53) ʔaklu al-waladi at-toffaahata
 eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc)
 bi-sor^cati-n (MSA)
 with speed(f-s-gen) ind
 “the boy’s fast eating of the apple”
- (54) ʔi^caṭaaʔu aṭ-ṭifi ʔomma-ho zahrata-n
 giving(m-s-nom) the child(m-s-gen) mother(f-s-acc) his flower(f-s-acc) ind
 bi-kolli ḥobbi-n (MSA)
 with all(gen) love(m-s-gen) ind
 “the child’s giving his mother a flower lovingly”
- (55) ʔi^caṭaaʔu aṭ-ṭifi zahrata-n
 giving(m-s-nom) the child(m-s-gen) flower(f-s-acc) ind
 li-ʔommi-hi bi-kolli ḥobbi-n (MSA)
 to mother(f-s-acc) his with all(gen) love(m-s-gen) ind
 “the child’s giving a flower to his mother lovingly”

These are all cases where accusative case is checked on an internal argument. So one conclusion which might be drawn here is that when accusative case is checked on either one or two internal arguments, the only possible modification is with a PP

adverbial and modification with adjectives is not allowed. This idea will be justified and developed in §6.5.3.

There are four cases where both adjectival and PP adverbial modifiers are acceptable, at least to some degree and to some speakers. I take this to suggest that these structures are ambiguous. I will discuss each of these cases below.

The first two ambiguous cases are the two types of one-argument VNCSs where either the external argument or the internal argument is used ((56a) and (56b), respectively).

- (56) a. qafzu aṭ-ṭifi (MSA)
 jumping(m-s-nom) the child(m-s-gen) ind
 “the child’s jumping”
- b. ramiu ar-rimaahi (MSA)
 throwing(m-s-acc) the spears(m-p-gen)
 “throwing spears.”

Some speakers report that the adjective is more acceptable in a VNCS with an external argument than in one with an internal argument only. However, the PP adverbial is equally possible in both cases. I claim that the fact that two types of modifiers can be used here suggests that these cases are ambiguous between two structures. The first one is a regular Construct State structure with no argument structure, and in this case adjectives can be used because the Verbal Noun is functioning like any other head of a nominal Construct State and the relationship between the head and the external argument or internal argument DP can be seen as a “loose” kind of possession. This loose possession is probably easier for speakers to process in the case of the external argument than that of the internal argument because the internal arguments usually suggest the presence of argument structure. This would explain why speakers accept adjectives with external arguments more than with internal arguments. Nevertheless, in both these cases, the head VN would be formed in the lexicon. The second structure is one with an argument structure which happens to realise only one argument, and this is the case where the PP adverbial is used. The literature does discuss cases where only an internal argument is used but not the cases where only an external argument is used. I consider both structures to be equally important and

will examine both in the course of my proposal in §6.5.3.

The third ambiguous case is the two-argument VNCS with a PP internal argument, as in (57).

- (57) ʔaklu al-waladi li-t-toffaaḥati (MSA)
 eating(m-s-nom) the boy(m-s-gen) of the apple(f-s-gen)
 “the boy’s eating of the apple”

The literature disagrees about allowable modifiers in this structure. While Fassi-Fehri (1993a) claims that an adjective which follows the subject and precedes the PP object is the only form of modification, Kremers (2003) assumes that a PP adverbial is possible in this case. My informants do accept a PP adverbial in this structure, so I will treat it as an ambiguous case. The use of adjectives in this structure suggests that the VN is lexically formed, while the use of the PP adverbial suggests that it is syntactically formed. It is possible to think of the ambiguity in this case in similar terms to the one-argument VNCSs, but the special element in this structure is the PP which includes the internal argument. The analysis of this structure should determine the status of this PP, taking into consideration the fact that it can be used when the VN is modified by both adjectives and PP adverbials. Thus, I claim that two-argument VNCSs with a PP internal argument is ambiguous between having two heads: a lexically formed one and a syntactically formed one taking an external argument. I will determine the status of the PP which includes the internal argument in §6.5.3.

The fourth ambiguous case is when the VN takes an external argument and a PP complement, as shown in (58).

- (58) hojoomu al-ʿadoi ʿala al-madeenati (MSA)
 attack(m-s-nom) the enemy(m-s-gen) on the city(f-s-gen)
 “The enemy’s attack on the city”

This case was not discussed in the literature, other than to say that the Verbal Noun takes the same range of arguments that the corresponding verb takes. The modifier which is expected to be allowed here if an argument structure is present is the PP adverbial. The problematic one is the possibility of modification by the adjective, but as noted in §6.3.1, this is only marginal. Therefore, I will assume that this structure

basically includes a syntactically formed VN, entailing that the status of the PP complement here is the same as its status in a sentence with the related verb. Since the use of adjectives in this structure is only marginal, I assume that speakers who accept it do not process the PP as a *complement*, but as a modifier.

In this section I claimed that the types of Verbal Noun Construct States allowing modification by both adjectives and PP adverbials are ambiguous between having lexically formed heads and syntactically formed ones. The VNCSs which do not allow modification by adjectives always involve accusative case marked on at least one argument. In the following section I will consider and reject a lexical analysis of the VNs which are modifiable by PP adverbials, and in §6.5.3 I will present a syntactic account for the various structures which include these VNs.

6.5.2 Against a Lexically Complex Head N/V

Arabic Verbal Nouns in the complex Construct State structures discussed in this chapter arguably share some characteristics of both nouns and verbs. On the one hand, the function of VNs is clearly nominal as they head Construct State structures which are used in DP positions. Nevertheless, in certain cases Verbal Nouns do not accept modification by adjectives, as explained in sections 6.3.1 and 6.5.1, and this is not expected of a nominal head. On the other hand, VNs also show some verb-like behaviour because they can check accusative case and take PP adverbial modifiers. However, unlike typical verbs, VNs cannot be modified by adverbs. Thus, functionally, VNs are nouns, but modification and case facts suggest that they may be verbal. The behaviour of VNs may seem similar to the heads of Nominalised Adjectival Constructs and Superlative Constructs discussed in chapter 5. The behaviour of the heads of these two structures also gives mixed indications about the category involved, and I proposed that these heads are special complex categories formed in the lexicon by combining a null nominal with an adjectival form. In this section I will show that the word formation process proposed to form N/A and N/SA cannot be extended to account for the special properties of Arabic VNs. In other words, Arabic Verbal Nouns cannot be proposed to be formed by combining a null nominal with a

V, forming a category V/N. I will show how Arabic VNs are different from N/A and N/SA, and I will claim that these differences do not support deriving VN in the same way N/A and N/SA are derived.

There are important differences between N/A and N/SA on the one hand and Arabic Verbal Nouns, on the other. First of all, the forms of N/A and N/SA are the same as the masculine forms of adjectives and superlative adjectives, respectively. In other words, the word formation process does not significantly alter the form of the adjectival input. However, Arabic VNs are significantly different in form from the related verbs. For example, the verb “to write” is *yaktob* but the related VN is *kitaaba* “writing”. Moreover, N/A and N/SA are always masculine in form, and I claimed in chapter 5 that this is because the nominal used in the word formation process has a default masculine feature. Interestingly, Arabic Verbal Nouns vary in their gender features. Some VNs, such as *?akl* “eating”, are masculine while others, such as *qiraa?a* “reading”, are feminine. This suggests that the (masculine) nominal involved in the formation of N/A and N/SA is not used to form VNs. Furthermore, N/A and N/SA cannot be modified by either adjectives or adverbs, and I argued that this is because the output of the word formation process is not compatible with any modifiers. VNs, however, can be modified by PP adverbials; if the same operation was used to form Verbal Nouns, one would expect that they would not accept modification.

Another reason to reject a lexical treatment of complex Verbal Nouns is that one of the “verbal” properties of VN, accusative case checking on the internal argument, does not take place in all VNCSs. If the ability of the Verbal Noun to check accusative case on its object is the by-product of a lexical operation which produces a word with some nominal and some verbal properties, that case checking ability is expected to be observed in all the structures the VN participates in. In other words, the VN would be expected to always be able to check accusative case as long as it was related to a transitive verb. If a complex head V/N had an accusative case feature to check, then the derivation would crash if that feature was not checked. However, as explained in sections 6.3.1 and 6.5.1, the internal argument of a VN is not always accusative.

Thus, the requirement to check accusative case cannot be an integral property of the Verbal Noun; it cannot be claimed that a transitive VN has an accusative case feature as a result of a lexical word formation process and that it enters the derivation with that feature.

In this section, I argued against a lexical treatment of Arabic Verbal Nouns along the lines proposed for Nominalised Adjectival Constructs and Superlative Constructs in chapter 5. I showed that VNs are fundamentally different from N/A and N/SA despite behaving in a way which like them reflects some of the properties of two categories. In the next section, I will present a syntactic account of complex VNs and analyse the various types of VNCSs discussed in this chapter.

6.5.3 Proposal

Verbal Noun Construct States may overtly realise all the arguments required by the verb related to the VN. In the case of transitive VNs, this involves an external argument and an internal one. The internal argument may be realised as either an accusative DP or a PP. However, sometimes only one of these arguments is realised, and genitive case is checked on that argument whether it is internal or external. The present discussion will focus on VNCSs which accept modification by PP adverbials either as the only possible modifier or as one of two options. As argued in §6.5.1 the latter case is ambiguous between two structures, and the analysis developed here relates to only one of these structures: the one compatible with PP adverbials. I will discuss two argument VNCS with an accusative internal argument (§6.5.4) and then one-argument VNCSs with only one genitive phrase (§6.5.5). Finally, I will discuss two-argument VNCSs with a genitive external argument and a PP internal argument (§6.5.6).

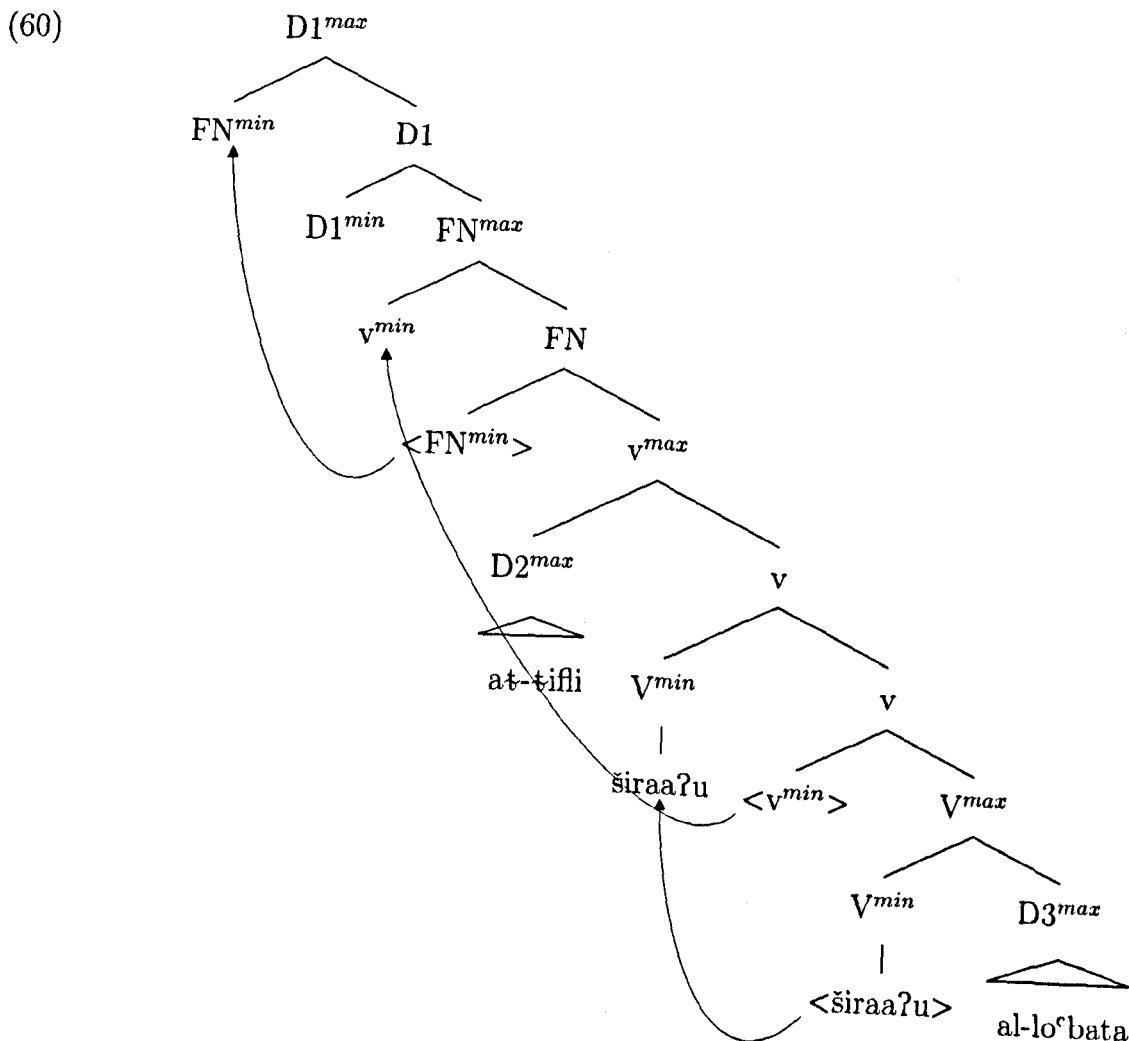
6.5.4 Two-Argument Verbal Noun Construct States: Accusative Case

The two-argument Verbal Noun Construct State where accusative case is checked on the internal argument, as shown in (59), is one of the most discussed structures in the generative literature on Semitic Verbal Nouns (Hazout, 1991; Fassi-Fehri, 1993a; Kremers, 2003, for example).

- (59) širaaʔu aṭ-ṭifi al-loʔbata (MSA)
 buying(m-s-nom) the child(m-s-gen) the toy(f-s-acc)
 “the child’s buying the toy”

The VN in this structure can only be modified by PP adverbials. The important features to explain in this structure are the accusative case on the internal argument and the modification by PP adverbials. The majority of the analyses in the literature propose that the derivation of this structure includes a verb, and that this verb is nominalised as a result of standard Head Movement. In my analysis of this structure, I will also propose that a verbal structure is used and that the verb is nominalised as a part of the derivation of the construct.

Assuming that accusative case on the internal argument is a structural case, like the one the verb checks on its object and, in line with current minimalist assumptions, that little *v* is the functional head responsible for accusative case on internal arguments, I propose that the syntactic part of the derivation of a VNCS like the one in (59) is (60).



Let us discuss the derivation bottom up. The verb is projected, and it selects for an internal argument ($D3^{max}$). As in sentential verbal projections, v is projected above the V projection and accusative case is checked on the internal argument. I also assume that once v^{min} is merged, it triggers the movement of V^{min} to spec/ v , in line with the approach to Head Movement proposed in chapter 4. The external argument of the verb ($D2^{max}$) is then merged in the outer spec/ v . This is also in line with the proposal laid out in §3.8 arguing that Head Movement always precedes External Merge. After that the v phase is spelled out, and the morphological merger of v^{min} and V^{min} takes place. So far the derivation is progressing as it would for a regular verbal projection.

After the v phase is spelled out, the structure starts to have nominal, rather than verbal, elements. Instead of I, a nominal functional projection which I call FN

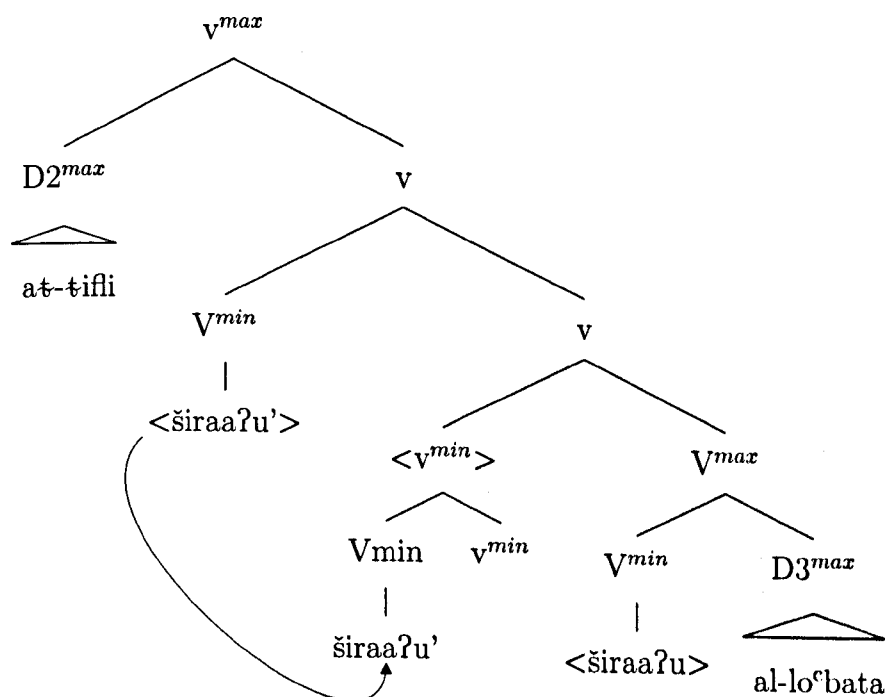
(Functional Nominal) is projected. I propose that FN is a nominaliser, and that it is affixal in nature. This FN has a feature which triggers the movement of the $v^{min}+V^{min}$ complex to its specifier. After that the Construct State D ($D1^{min}$) is projected and the derivation proceeds as for any other Construct State, i.e., $D1^{min}$ causes the movement of FN^{min} to spec/D1. $D1^{min}$ also checks genitive case on the external argument is spec/ v ($D2^{max}$), which is accessible according to the Phase Impenetrability Condition (Chomsky, 1999) (see chapter 1). I also assume as is usual in Construct States that $D1^{min}$ inherits the definiteness value of the DP that occupies its specifier, here the external argument. After the D1 phase is spelled out, FN^{min} combines with $v^{min}+V^{min}$ and $D1^{min}$ forming the Verbal Noun. So, in essence, Head Movement itself does not directly result in the formation of the VN, but the morphological merger operation proposed to take place at the level of morphological structure does.

Modification by adjectives is excluded from this structure because N, the head which accepts modification by adjectives, is not projected. Modification by PP adverbials, but not by adverbs, can be explained if one assumes that the PP modifiers are right-adjoined to FN, rather than V. I claim that FN can be modified by PP modifiers, but not by adjectives or adverbs. This can be explained as a matter of categorial selection; certain categories are compatible with some categories of modifiers but not others. One possible explanation for this modification c-selection could be that since FN can be used only in VNCSs, a structure which shows a mixture of verbal and nominal categories, FN accepts modification by the only category which can modify both verbs and nouns: prepositional phrases. One issue which remains to be explained is how one can prevent adverbials from being adjoined to V. One can claim that in a nominal structure, V cannot be modified. However, at the point when V is projected, there is no indication that FN will be projected rather than I, so what prevents adverbials from being adjoined to V? I propose that adjoining any adverbial to V will consequently eliminate the option of projecting a nominal, rather than a sentential, structure. If an adverbial is adjoined to V, only I can be projected,

not FN.⁷

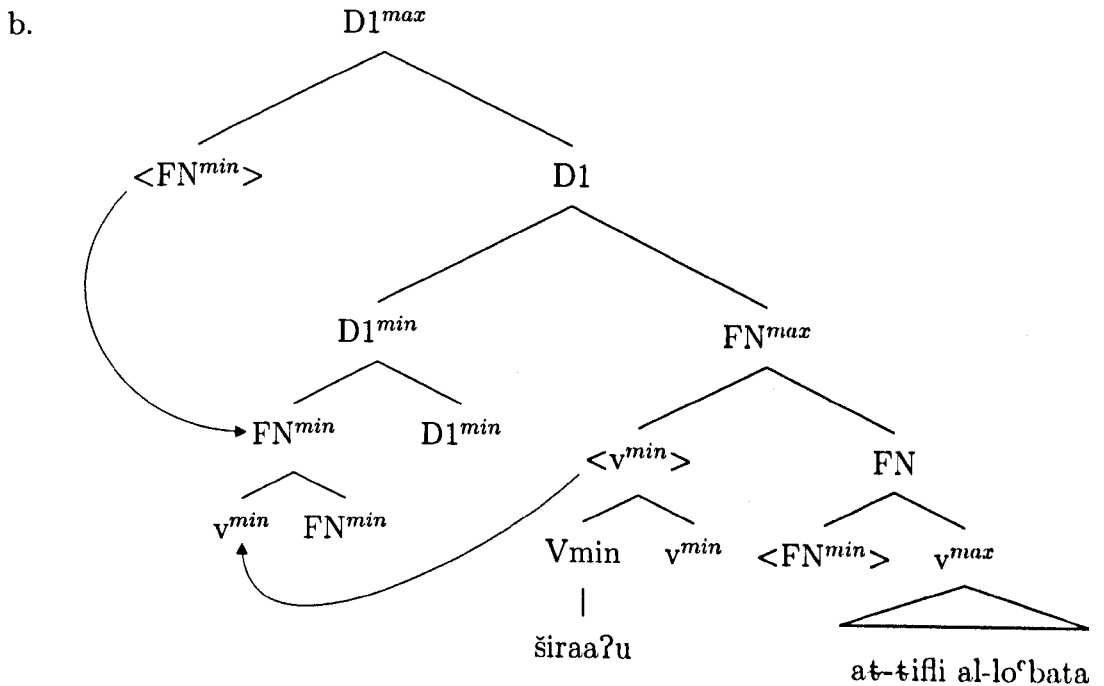
This case has offered an applied example of how to solve the Spell Out and morphological merger problem when there is more than one case of Head Movement, a problem mentioned in chapter 3. I previously suggested that when multiple cases of Head Movement take place, all the attracting and attracted heads are combined after spell out, but the Construct State data discussed earlier did not present an opportunity to apply that proposal. The trees in (61) show how morphological merger applies to the output of Head Movement in (60) for the *v* phase and then for the whole DP.

(61) a.



⁷A theoretical problem with this proposal is that when *v* is spelled out, the derivation cannot “see” *V* or any node adjoined to it. Therefore, any projection above *v* would not be affected by whether or not *V* is modified. A possible solution to this problem is that the modification of *V* affects the features of the whole phase and that in turn has an effect on whether that structure can develop into a nominal structure or not.

An alternative solution suggested by Bernadette Plunkett is that the FN structure was an extended *vP* projection, and that the earlier modification of *VP* can be ruled out by assuming that modification is only possible once a projection is maximal. However, if FN was an extended verbal projection, this would not explain how the structure is ultimately a nominal, since extended projections are usually of the same “type”.



In this section, I have presented an analysis for two-argument VNCSs where accusative case is checked on the internal argument. In line with the bulk of the literature, I assume that this structure is partly verbal and partly nominal. The nominal features of this structure are due to projecting a nominaliser head FN above *v*. I proposed that the head which checks accusative case on the internal argument is the same in verbal projections and in VNCSs - little *v*. Moreover, the genitive case on the external argument is attributed to the Construct State D, the same source of genitive case as in other types of Construct States (see chapters 4 and 5). The special nominaliser head FN is responsible for the formation of the Verbal Noun because it causes *v*+V to move, creating the input to the morphological operation which takes place after Spell Out. This analysis can also be extended to Verbal Noun Construct States which have a different argument structure, such as those associated with verbs which take prepositional complements. The derivation would progress in the same way as a VP would, but instead of I, FN is projected. One of the main differences between my proposal and the ones found in the majority of the literature relates to explaining modification the facts. While it is usually assumed that the PP adverbials are adjoined to the verbal part of the structure, I claim that V cannot be modified and that PP adverbials are the only category which can be adjoined to FN. In the

next sections, I will show how this analysis can be modified to account for other types of VNCSs.

6.5.5 One-Argument Verbal Noun Construct States

Verbal Noun Construct States may not include all the arguments associated with the verb the VN is related to. For example, a VN related to a transitive verb may form a Construct State with only an external argument or an internal one. In both these cases, genitive case is checked on the argument used. This section will propose an analysis for these two cases and derive this analysis from the one proposed for two-argument VNCSs with accusative internal arguments. I will first discuss the external argument only case and then the internal argument one.

6.5.5.1 External Argument Only

Sometimes Verbal Nouns may form Construct States with only a genitive external argument. I explained in §6.3.1 that it is possible to modify the VN in this case with either an adjective or a PP adverbial. In §6.5.1 I argued that the fact that there are two possible modifiers in this case suggests that this structure is ambiguous between two possible analyses: one where the head VN is formed in the lexicon and another where it is formed in the syntax. This section discusses the latter case, where PP adverbials are the modifiers.

Transitive VNs may form VNCS realising both their external and internal arguments (62). However, sometimes a VNCS may only include the external argument of the VN, as shown in (63).

(62) *ʔaklu* *ar-rajoli* *ˀaʃaaʔa-ho* (MSA)
 eating(m-s-nom) the man(m-s-gen) dinner(m-s-acc) his
 “the man’s eating of his dinner”

(63) *ʔaklu* *ar-rajoli* (MSA)
 eating(m-s-nom) the man(m-s-gen)
 “the man’s eating”

The structure in (63) is interesting because the VN used *ʔaklu* “eating” relates to a transitive verb *yaʔkol* “eat” but this VNCS includes only an external argument.

There are two possible explanations for how such a structure can be derived. One is that the verb used here is an intransitive version of the transitive verb, and the other is that there is a covert object. There are some data which suggest that the first option is the most appropriate approach, as I will explain below. These data show that the option to use an external argument only is not available for all VNs, but only for those VNs related to transitive verbs which can be used intransitively as well.

Some transitive verbs can be optionally used intransitively. For example, the verb *yaʔkol* “eat” can be used with or without an internal argument, as shown in (64). However, some other transitive verbs cannot be used without an object, as shown in (65) where the verb *ištaraitu* “bought” is obligatorily transitive.

(64) laqad ʔakalto (toffaahata-n). (MSA)
 have(perf) ate(1-s) apple(f-s-acc) ind
 “I have eaten (an apple).”

(65) laqad ištaraito *(toffaahata-n). (MSA)
 have(perf) bought(1-s) apple(f-s-acc) ind
 “I have bought *(an apple).”

The possibility of using some transitive verbs intransitively is not special to Arabic. For example, it is possible in English to say either “I already ate a sandwich” or “I already ate”, but it is not possible to say “I bought”.

Similarly, it is not always possible to form a VNCS from a transitive VN and an external argument only. Whether or not that is possible is influenced by whether the verb the VN is related to can be optionally used intransitively. While it is possible to form a one-argument VNCS with *ʔakl* “eating” and an external argument only as in (63) above, this option is not available for some other VNs, such as *širaaʔ* “buying” (66).

(66) širaaʔu at-tifli *(loʕbata-n) (MSA)
 buying(m-s-nom) the child(m-s-gen) toy(f-s-acc) ind
 “the child’s buying (of a toy)”

The possibility of using a transitive VN intransitively corresponds to possibility of using the related verb without an object (compare (64) and (63), on the one hand,

and (65) and (66), on the other).

Thus, I propose that the difference in the derivation between two-argument VNCS with an accusative internal argument and one-argument VNCSs with an external argument only is the result of the projected V being an intransitive one. The nominaliser head FN is projected above the verbal projection in both cases, Head Movement takes place and the Construct State D checks genitive case on the external argument. PP adverbials, when used, would be also adjoined to the maximal FN projection. This approach has the advantage of using already existing mechanisms to account for the properties of the structure. It explains the intransitive use in the same way that use would be explained for a verb and it explains the VNCS features in the same way they are explained in the two-argument structure discussed in §6.5.4.

6.5.5.2 Internal Argument Only

Transitive Verbal Nouns may form a Construct State with only an internal argument as the genitive component. I explained in §6.5.1 that this structure can be ambiguous between having a lexically formed head, modifiable by adjectives, or a syntactically formed one, modifiable by PP adverbials. The analysis developed in this section applies to the latter case only.

One reason this structure has sparked a lot of interest in the literature is that the internal argument is marked with genitive case, not accusative case, as shown in (67), where *al-lo^cbati* “the toy” is genitive rather than accusative.

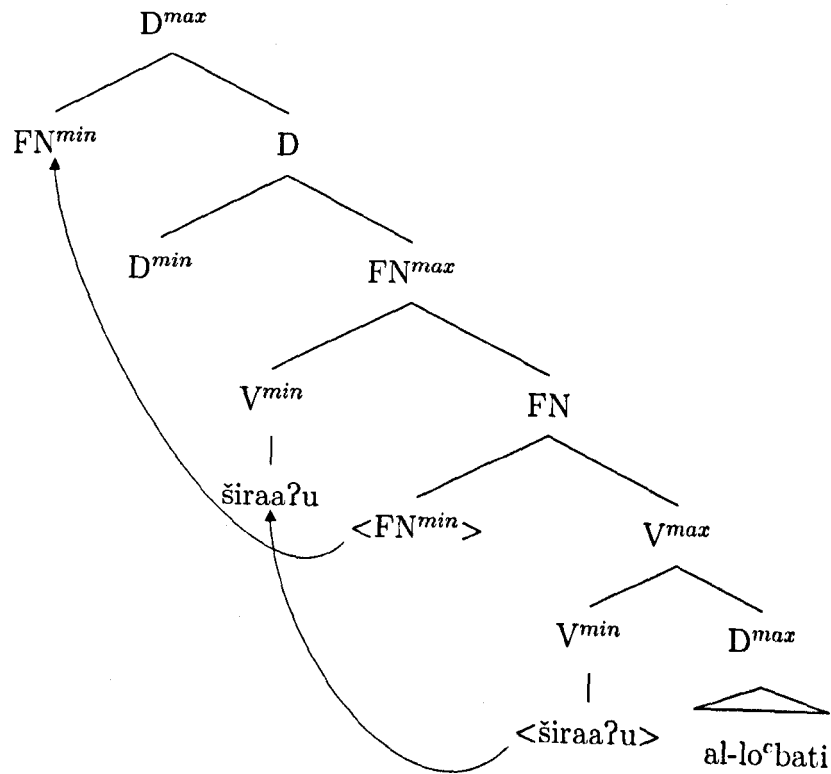
- (67) *širaaʔu* *al-lo^cbati* (MSA)
 buying(m-s-nom) the toy(f-s-gen)
 “the buying of the toy”

I explained earlier (sections 6.3.1 and 6.5.4) that when an internal argument is used in a two-argument VNCS this argument bears accusative case. The issue to explain here is how this genitive case checking takes place, even though the genitive phrase is still functioning as an internal argument. If the genitive DP in this case is merged as a complement to V, why can it not be marked accusative?

In the approach to VNCSs developed here, accusative case is checked on an internal argument when *v* is projected and the external argument is merged in the

specifier position of v (see §6.5.4). I propose that little v is not projected in one-argument VNCS with a genitive internal argument. As a consequence, there would be no functional head to check accusative case and there would be no position for an external argument to be merged in. Moreover, there would be no v phase, and therefore nothing to prevent the genitive case from being checked on the internal argument. Another consequence of having no little v is that there will be one less instance of Head Movement; V^{min} will move directly to spec/FN, as shown in (68), which shows the derivation of (67).

(68)



One question to answer in this context is why v is not projected in this structure. In a sentence using a transitive verb, v must be projected and a subject must be used. According to my proposal, when the VN related to a transitive verb is used to form a VNCS, there is an option for v and the external argument not to be used. I claim that leaving out v is allowed in VNCSs because FN selects for a verbal projection, and that verbal projection may be either v or V . Thus, on the one hand, if a transitive verb is used to form a sentence, v must be projected because I requires that complete set of verbal projections to be used. On the other hand, if a transitive verb is used

assumed that PRO occupies that position in (69). Firstly, projecting little *v* entails that accusative case would be checked on the internal argument DP, which is not what takes place in internal-argument only VNCSs. Moreover, having *v* would also mean that there is a phasal head, and therefore even if accusative case is not checked, the Construct State D would not be able to see deep enough to check genitive case on the internal argument. Thus, the resulting structure would have an accusative internal argument and/or a genitive case feature which could not be checked. Another more serious reason why PRO cannot be in spec/*v* is because null case, which is the case assumed to be checked on PRO, should be assigned/checked by specific functional projections, not by a projection which can check another (here accusative) case. In other words, PRO is in complementary distribution with other nominals and it cannot occupy a position which can be occupied by any other DP.

If PRO cannot be the external argument in these constructs, how can the observed meaning of control be accounted for? How can we account for the fact that the agent of the action expressed by the Verbal Noun *naqla* “transporting” in (69) is the same as the subject of the verb *yoreedu* “want”? I propose that the answer lies in the properties of control into nominals and not directly in the structure and properties of the VNCS itself.

Control is not well understood in Arabic. Hazout (1991) and Fassi-Fehri (1993a) assume that PRO is used in the external argument position of VNCSs such as (69), but there is no evidence from control in the verbal domain that Arabic uses PRO as a subject in the complement of control verbs. Consider the data below.

- (71) a. *ħaawalto ʔan ʔanaama.* (MSA)
 tried(1-s) that sleep(1-s)
 “I tried to sleep.”
- b. *ħaawala ʔan yanaama.* (MSA)
 tried(3-s) that sleep(3-m-s)
 “He tried to sleep.”
- c. *ħaawalto ʔan yanaama at-tiflu.* (MSA)
 tried(1-s) that sleep(3-m-s) the child(m-s-nom)
 “I tried to have the child go to sleep.”

- d. **ḥaawalto ʔan yanaama* (MSA)
 tried(1-s) that sleep(3-m-s)
 "I tried to have him go to sleep."

The verbs in the clausal complements of control verbs in Arabic show the same variation in form seen in verbs in matrix clauses. In both cases, the verbs inflect for person, number and gender. In (71a), for example, the verb *ʔanaama* "sleep" has first person, singular features, whereas in (71b) the form the verb takes is *yanaama*, which is third person, masculine and singular. In both these examples, the "controlled" verb has the same features as the "controller" verb. Such changes in verb forms in pro-drop languages are usually explained as the verb agreeing with a pro (null) subject with the same features overtly marked on the verb. The fact that the verb forms used in controlled clausal complements are the same as the ones used in matrix clauses suggests that clausal complements of control verbs also have pro as subjects. However, there seems to be a requirement for the pro subjects in these clausal complements to have the same features as those of, or rather be referential with, the subject of the control verb. This situation is different from languages such as English, where the main verbs in the complements of control verbs are non-tensed, non-agreeing infinitival forms. In such languages, a nonfinite functional projection is proposed to check null case on a PRO subject, and this PRO is assumed to be "controlled" by the subject of the control verb. The same approach cannot be carried over to Arabic because the controlled complements have finite verb forms which can be claimed to have pro subjects. Furthermore, the functional projection required to check (nominative) case on pro is not compatible with PRO because using the latter requires projecting a functional head which can only check null case. Thus, control into sentential complements in Arabic cannot be explained by using PRO.

Moreover, the complement of the control verb may have an overt subject which is not coreferential with the subject of the control verb, as shown in (71c). However, this option for the "controlled" subject to be not coreferential with the subject of the control verb is only possible with overt subjects. If the clausal complement does not have an overt subject, there is no option for the features on the controlled verb to be different from those on the matrix verb, as shown in (71d). Thus, one might conclude

that when the subject of verbal complements of control verbs in Arabic is *pro*, this subject must be co-indexed with the matrix subject. However, this co-referentiality is overridden if the subject of the complement is an overt DP, as in (71c).

Control into Arabic nominals is not as straightforward as it might initially seem. Control verbs can take one-argument VNCSs with a genitive internal argument as a complement (72a), but they may also take simple DPs as complements, as shown in (72b). Although simple DPs are not usually associated with having a position for an external argument, the control meaning is still derived. In (72b), the same person is understood to be the subject of both trying and sleeping.

- (72) a. *ħaawalto ziarata al-masjidi.* (MSA)
 tried(1-s) visiting(f-s-acc) the mosque(m-s-gen)
 "I tried to visit the mosque."
 b. *ħaawalto an-naoma.* (MSA)
 tried(1-s) the sleeping(m-s-acc)
 "I tried to sleep."

Unlike the situation of verbal complements of control verbs, there is no option for the external argument of the nominal complement to be overt, as shown in (73).

- (73) * *ħaawalto ziarata al-mo^ctamiti al-masjida.*
 tried(1-s) visiting(f-s-acc) the pilgrim(m-s-gen) the mosque(m-s-acc)
 (MSA)
 "I tried to have the pilgrim visit the mosque."

Thus, there are two main points which become clear when comparing control into verbal complements and nominal complements in Arabic. The nominal complement may be one with no structural position for an external argument (simple DPs) and the option for an overt external argument available for verbal complements is not available for control into nominals. I claim that these two properties of control into nominals suggest that the null nominal understood as the external argument of the verbal noun is not an integral part of the DP which appears to be the complement of the control verb, but rather an element external to the DP. This would explain why the control meaning is available with simple DPs, as in (72b). Moreover, if the status of that null nominal is different in verbal and nominal complements of control verbs,

this would explain why that nominal has the option to be overt in one case but not the other. In verbal complements of control, the “controlled” null nominal is clearly a part of the verbal projection because, as argued above, it is *pro* and its features are shared by the verb. Thus, I claim that in nominal complements, the null nominal is external to the DP which appears to be the complement of the control verb. This scenario is compatible with control into nominals being control into clauses rather than into DPs.

I propose that control verbs in Arabic always select for a clause. This is evident in control into verbal complements because the verbal complement always starts with a complementiser *ʔan*, as seen in (71). I propose that what appears to be control into nominals in Arabic is in fact control into small clauses with a null nominal as a subject and a DP as a predicate. This null nominal is required to be coreferential with the subject of the control verb, as is seen in control into verbal clauses. One question which arises here is whether this null nominal is *pro* or *PRO*. The limited data studied here suggests that this subject might be *PRO*; the number and gender features of this null pronominal are only detectible from the DP it is coreferential with, i.e., the subject of the control verb. Moreover, having *PRO* as the subject of the small clause correctly predicts that it is not possible to have an overt subject for nominal complements of control verbs. This is because, unlike *pro*, *PRO* occurs in positions where other DPs may not. If *PRO* is the subject of this clause, one will have to assume that there is a functional element in the structure of this small clause to check null case on *PRO*.⁸ As the present discussion is not a full account of control or small clauses in Arabic, I will leave this issue for future research.

The approach to control proposed here is very sketchy, but it shows that the meaning of (69) can be derived without assuming that *PRO* is the external argument in VNCSs with genitive internal arguments. Therefore, the analysis proposed for this structure does not need to propose an external argument position in order to explain

⁸Another option would be that the subject of the small clause is *pro* and that *pro* can be licensed only as a result of being co-indexed with the matrix subject. This would make control into nominal and verbal complements more similar, but it would require changing the theoretical assumptions about *pro*.

the control data.

In this section I proposed that one-argument VNCSs with a genitive internal argument are derived by projecting a V and an FN in the structure. Genitive case on the internal argument is due to the absence of *v* from the structure, and therefore the genitive case feature on Construct State D can check case on the internal argument. Moreover, I provided an alternative approach to control in Arabic which can derive the meaning of control into such VNCSs without assuming that a PRO is used as an external argument in the structure.

6.5.6 Two-Argument Verbal Noun Construct States: Prepositional Strategy

Transitive Verbal Nouns may form Construct States using two strategies. The first strategy involves having a genitive internal argument and an accusative external one; this strategy was analysed in §6.5.4, and I claimed that both a V and a *v* are projected in this structure. The other strategy involves having a genitive external argument and a PP which includes the internal argument, as shown in (74).

- (74) ʔaklu al-waladi li-t-toffaaḥati (MSA)
 eating(m-s-nom) the boy(m-s-gen) of the apple(f-s-gen)
 “the boy’s eating of the apple”

In §6.3.1 I explained that this structure accepts modification by both adjectives and PP adverbials, and in §6.5.1 I explained that these modification facts suggest that this structure is ambiguous between having a lexically formed head and a syntactically formed one. In other words, this structure is comparable to one-argument VNCSs with a genitive external argument. This status of the structure explains the modification facts, but what remains to be explained is the status of the PP which includes the internal argument. In this section, I will argue that this PP is an adjunct.

The PP containing the internal argument is used in this structure whether the VN is modified by an adjective or by a PP adverbial, as shown in (75).

- (75) a. ?aklu al-waladi as-saree^cu
 eating(m-s-nom) the boy(m-s-gen) the speedy(m-s-nom)
 li-t-toffaahati (MSA)
 of the apple(f-s-gen)
 “the boy’s speedy eating of the apple”
- b. ?aklu al-waladi li-t-toffaahati
 eating(m-s-nom) the boy(m-s-gen) of the apple(f-s-gen)
 bi-sor^cati-n (MSA)
 with speed(f-s-gen) ind
 “the boy’s eating of the apple speedily”

This suggests that the status of the PP internal argument is the same whether the VN is formed in the lexicon (75a) or in the syntax (75b). It is interesting here to note that the two PPs in (75b) may appear in the opposite order, as shown in (76).

- (76) ?aklu al-waladi bi-sor^cati-n
 eating(m-s-nom) the boy(m-s-gen) with speed(f-s-gen) ind
 li-t-toffaahati (MSA)
 of the apple(f-s-gen)
 “the boy’s fast of the apple speedily”

I propose that the internal argument PP in (75a), (75b) and (76) is an adjunct. In (75a), which contains a lexically formed VN, the PP is adjoined to N. The fact that the PP comes to the right of the adjective, if one is used, can be explained by the fact that Arabic prepositional phrases are always postposed (see §4.6.1). Thus, if both an adjective and a PP are adjoined to N, the PP has to come last because of this restriction on the placement of PPs. In (75b) and (76), with syntactically formed VNs, the internal argument PP is adjoined to FN, the same node to which PP adverbials can be adjoined. As noted above, when both PP adverbials and internal argument PPs are used, either one of them can precede the other. This relative freedom of ordering between the two prepositional phrases suggests that they are both adjuncts and that either of them maybe merged before the other.

I noted in §6.3.1 that the prepositional strategy is not available for ditransitive VNCSs and that the only possible modifiers in these constructs are PP adverbials. I take this to suggest two points about the behaviour of ditransitive VNs. The first one is that ditransitive VNs can only be formed in the syntax and not in the lexicon, and this explains why adjectives cannot be used to modify these VNs. The second point is

that there is a requirement to project the internal arguments when a ditransitive verb is used in the derivation. Since the prepositional strategy is limited to cases where only the external argument is used, this strategy cannot be used with ditransitive VNs because their internal arguments are always expressed overtly. One reason for this might be that there is no “intransitive” version of ditransitive verbs. While a transitive verb such as *yaʔkol* “eat” may be used intransitively, as seen in (64), a ditransitive verb cannot be used without its objects, as (77) shows.

- (77) ʔahdaa al-waladu *(kitaaba-n)
 gave-a-present(3-m-s) the boy(m-s-nom) book(m-s-acc) ind
 *(li-mo^callimi-hi). (MSA)
 to teacher(m-s-gen) his
 “The boy gave a book to his teacher (as a present).”

In this section, I proposed an analysis for two-argument VNCSs with a PP internal argument which treats them on par with external-argument only VNCSs. Under this approach, the internal agreement PPs are considered adjuncts to either N or FN.

The approach to Modern Standard Arabic Verbal Noun Construct States developed in this chapter proposes that a complete or a partial verbal structure is used in such structures and that the nominalisation of the verb takes place as an indirect result of moving V to the specifier of a functional head FN and then merging V and FN at the level of morphological structure. In my proposal, PP adverbials are adjoined to FN and adjunction to V is not allowed. In the next section, I will discuss Makkan Arabic Verbal Nouns and explain how they are different from Modern Standard Arabic ones and propose a way to derive these differences.

6.6 Makkan Arabic Verbal Nouns

This thesis studies the behaviour of Arabic DPs based on data from two varieties of Arabic: Modern Standard Arabic and Makkan Arabic. The aim of studying these two varieties is to get more insight into the Arabic DP and to understand the driving force behind the differences between these two varieties. Having discussed and analysed Modern Standard Arabic Verbal Nouns, I will now explain the special behaviour

of Makkan Arabic ones. In §6.6.1 I will show how Makkan Arabic Verbal Noun Construct States differ from the data discussed so far in this chapter, and in §6.6.2 I will propose an account for how these differences can be derived.

6.6.1 Special Patterns

Makkan Arabic Verbal Nouns mainly differ from Modern Standard Arabic in the type of modifiers they accept and the range of Construct State structures they may occur in. Generally, Makkan Arabic uses PP adverbials more freely than Modern Standard Arabic does, but modification by adjectives is usually preferred. Moreover, the range of VNCSs in this spoken variety is a subset of the range available in the standard variety. This section explains and illustrates these differences.

In simple DPs, Makkan Arabic VN Simple DPs accept modification by PP adverbial modifiers as well as adjectives, as shown in (78).

- (78) a. al-giraaya bi-sor^ca (MA)
 the reading(f-s) with speed(f-s)
 “the fast reading”
- b. al-giraaya as-saree^ca (MA)
 the reading(f-s) the fast(f-s)
 “the fast reading”

This is different from the modificational facts in VN simple DPs in Modern Standard Arabic. As noted in §6.2, VN simple DPs in the standard variety only accept modification by adjectives; modification by PP adverbials is not grammatical in this case, as shown in (79).

- (79) a. al-qiraaʔatu as-saree^catu (MSA)
 the reading(f-s-nom) the fast(f-s-nom)
 “the fast reading”
- b. * al-qiraaʔatu bi-sor^catin (MSA)
 the reading(f-s-nom) with speed(f-s-gen)
 “the fast reading”

Verbal Nouns in Makkan Arabic may also be heads of Construct States. However, not all the patterns seen in Modern Standard Arabic (§6.3.1) are allowed in Makkan

Arabic, and sometimes the modifiers preferred in a certain context are different in the two varieties.

In Makkan Arabic as in MSA, it is possible for VNs to form one-argument VNCSs with either an external argument (80a) or an internal argument (80b).

- (80) a. girayat at-~~t~~aalib (MA)
 reading(f-s) the student(m-s)
 “the student’s reading”
- b. rasm az-zohoor (MA)
 drawing(m-s) the flowers(f-p)
 “drawing the flowers”

Modification by both adjectives or PP adverbials is allowed in one-argument VNCSs, as shown in (81), but adjectives are preferred over PPs. In Modern Standard Arabic, both modifiers are equally acceptable, especially in external argument VNCSs (see §6.3.1).

- (81) giraiat at-~~t~~aalib as-saree^ca/ bi-sor^ca (MSA)
 reading(f-s) the student(m-s) the fast(f-s)/ with speed(f-s)
 “the student’s fast reading”

Verbal Nouns in Makkan Arabic may also overtly realise both their external and internal arguments. However, unlike the situation in Modern Standard Arabic, only the prepositional strategy, discussed in §6.5.6, can be used to represent the internal argument (82). The accusative case strategy, discussed in §6.5.4, cannot be used in Makkan Arabic (83).

- (82) ^card at-tilfizioon li-t-timsilia (MA)
 showing(m-s) the television(m-s) (Channel) of the series(f-s)
 “the channels’ showing of the series”
- (83) *^card at-tilfizioon at-timsilia (MA)
 showing(m-s) the television(m-s) (Channel) the series(f-s)
 “the channels’ showing of the series”

In these two-argument VNCSs, it is possible to modify the VN with a PP adverbial positioned either at the end of the CS (84a) or between the subject and the object PP (84b). It is also possible to modify the head with an adjective which follows the

subject and precedes the PP object (84c). All of these modification patterns are also possible for this structure in Modern Standard Arabic (§6.5.6).

- (84) a. ?akl al-walad li-t-tofaaḥa bi-sor^ca (MA)
 eating(m-s) the boy(m-s) of the apple(f-s) with speed(f-s)
 “the boy’s fast eating of the apple”
- b. ?akl al-walad bi-sor^ca li-t-tofaaḥa (MA)
 eating(m-s) the boy(m-s) with speed(f-s) of the apple(f-s)
 “the boy’s fast eating of the apple”
- c. ?akl al-walad as-saree^c li-t-tofaaḥa (MA)
 eating(m-s) the boy(m-s) the fast(m-s) of the apple(f-s)
 “the boy’s fast eating of the apple”

Ditransitive VNs can be used in Construct States in Makkan Arabic, but these VNCSs are very formal. It is more natural for speakers to use alternative, verbal structures, as in (85).

- (85) ?inno al-modarrisa ?a^cṭat aṭ-ṭaalibaat hadaaia (MA)
 that the teacher(f-s) gave(3-f-s) the students(s-p) presents(f-p)
 “that the teacher gave the students presents”

However, when ditransitive VNs are used in CSs, it is possible to have the two patterns used in Modern Standard Arabic in such structures (see §6.3.1 examples (15a) and (15b)). The VN may be followed by the external argument, direct object and a PP including the indirect object, as in (86a). The other option is for the indirect object to precede the direct object, as shown in (86b).

- (86) a. ?i^cṭaa? al-modarrisa hadaaia li-ṭ-ṭaalibaat (MA)
 giving(m-s) the teacher(f-s) presents(f-p) to the students(f-p)
 “the teacher’s giving of presents to the students”
- b. ?i^cṭaa? al-modarrisa aṭ-ṭaalibaat hadaaia (MA)
 giving(m-s) the teacher(f-s) the students(f-p) presents(f-p)
 “the teacher’s giving of presents to the students”

These two patterns of ditransitive VNs are unusual for Makkan Arabic VNCSs. As noted before, two-argument VNCSs can only use the prepositional strategy; internal arguments can only be used in PPs, as examples (82) and (83) show. Thus, the fact that one or two internal arguments in ditransitive VNCSs is a bare DP is unexpected.

Thus, the patterns used in Makkan Arabic Verbal Noun Construct States are basically a subset of the patterns used in Modern Standard Arabic. The restriction is mainly obvious in two-argument VNCSs, where only the prepositional strategy can be used. Moreover, modification by PP adverbials is possible in more structures in Makkan Arabic, but modification by adjectives is generally preferred. In the next section, I will propose that the special behaviour of VNs in Arabic is expected if Verbal Nouns can only be formed in the lexicon, not as a part of the syntactic derivation of VNCSs.

6.6.2 Proposed Analysis

In this section I will argue that the differences between Modern Standard Arabic and Makkan Arabic mentioned in §6.6.1 above can be explained if the latter does not have syntactically-formed Verbal Nouns. Under this proposal, all Makkan Arabic VNs are formed in the lexicon and they can form Construct States as such. In other words, the special Nominaliser FN found in Modern Standard Arabic is not a part of Makkan Arabic.

One major difference between VNs in these two varieties of Arabic relates to the use of accusative objects in two-argument Verbal Noun Construct States. While this option is available in Modern Standard Arabic, it is not possible in Makkan Arabic. I argued in §6.5.4 that the only possible derivation for this structure involves a syntactic formation of the VN via Head Movement. This pattern is actually the only Modern Standard Arabic VNCS where the only possible analysis involves syntactic VN formation, while all the other structures, with the exception of ditransitive VNCSs, are potentially ambiguous between having a lexically or syntactically formed head (see §6.5.1). Thus, the fact that this is the only structure which is not possible in Makkan Arabic supports the idea that this variety does not allow syntactic formation of Verbal Nouns. Consequently, the VNCSs which are ambiguous in Modern Standard Arabic can only be analysed as having lexically formed heads in Makkan Arabic.

Further support for the idea that Verbal Nouns in Makkan Arabic are only formed

in the lexicon comes from the patterns associated with ditransitive Verbal Nouns. I showed in §6.3.1 that in Modern Standard Arabic, these Verbal Nouns only occur in Construct States which use the direct and indirect objects in the orders used with the related verbs (examples (15a) and (15b)). Moreover, the only possible modification for these Verbal Nouns is with PP adverbials (examples (17a) and (17b)). In §6.5.6 I argued that ditransitive VNs can only be formed as a part of the derivation of VNCSs. As explained in §6.6.1, the use of ditransitive Verbal Nouns in Makkan Arabic is highly marked and considered very formal. Furthermore, when these VNs are used in this variety, the patterns used are the same as those found in Modern Standard Arabic, even though these patterns appear to be in contradiction with the other patterns of VNCSs in Makkan Arabic. I take this unique behaviour of ditransitive VNs to suggest that these VNs and the VNCSs they form are not a part of Makkan Arabic and that their use constitutes code switching, hence the markedness.⁹ This argument strengthens the proposal that Makkan Arabic does not form VNs syntactically; ditransitive VNs can only be formed syntactically, and therefore they are not a part of the grammar of Makkan Arabic. Their use in this variety is highly marked and constitutes using a structure from a more formal variety of Arabic.

Another piece of evidence for this proposal that VNs in Makkan Arabic can only be formed in the lexicon comes from modification data. In §6.6.1 I noted that the modification of the one-argument VNCSs is more natural with adjectives than with PP adverbials. This is expected if the VN heads of these structures are formed in the lexicon because lexically formed VNs enter the derivation as nouns, and these nouns accept adjectives as adjuncts.

However, one property of Makkan Arabic Verbal Nouns which is unexpected if this variety does not form VNs syntactically relates to modification by PP adverbials. I noted in §6.6.1 that modification by PP adverbials is relatively less restricted in Makkan Arabic than in Modern Standard Arabic, even though modification by ad-

⁹I argued for similar treatment for Adjectival Constructs in chapter 5. The use of both structures is considered very formal, suggesting that speakers are basically using a Modern Standard Arabic structure.

jectives is preferred. One pattern which I consider to be highly significant is the fact that VN simple DPs do accept modification by PP adverbials, which is not possible in Modern Standard Arabic. I take this to suggest that the function of PP adverbials is different in the two varieties studied here. These PPs can only be adjoined to FN in Modern Standard Arabic, but they can be adjoined to N in Makkan Arabic. Since all VNCSs in the latter variety contain lexically formed VNs, which enter the derivation as N, the fact that modification by PPs is possible in all the patterns is not surprising.

In this section, I argued that Makkan Arabic can form Verbal Nouns only lexically, and I provided some evidence supporting this argument. The patterns available in Makkan Arabic and the modifiers allowed suggest that FN, the head needed to form VNs syntactically, is not a part of the grammar of Makkan Arabic.

6.7 Conclusion

Verbal Nouns are a rich topic of inquiry in the syntax of Arabic. In Modern Standard Arabic, VNs can form a variety of structures, some of which have common nominal features such as accepting modification by adjectives, and some others show some verbal properties such as taking accusative internal arguments and accepting modification by PP adverbials. Makkan Arabic differs from Modern Standard Arabic in the range of possible structures and the modifiers allowed in some cases. The approach I take to Arabic Verbal Nouns in this thesis differentiates between lexically and syntactically formed VNs, with the latter underivable in Makkan Arabic. Lexically formed VNs are formed by a lexical word formation process and enter the derivation as N heads. However, syntactically formed VNs involve a partial verbal projection, nominalised as a result of the use of a nominaliser FN head. The range of Verbal Noun Construct States available can be derived by either projecting a full or a partial verbal structure.

In this chapter I discussed the last major type of Construct States analysed in this thesis. I have used in my analysis the same type of Head Movement proposed in

chapter 3, and the data used here presented a practical illustration for my approach to multiple Head Movement.

Chapter 7

Conclusion

The Arabic DP presents various intriguing issues for syntactic inquiry. The Construct State in particular involves a large number of patterns, and forming a unified approach to explain the shared behaviour of the different Construct States as well as the special patterns of each type can enrich our understanding of the syntax of the Arabic DP in general. This thesis has presented a detailed analysis of several Arabic DP types, including the Simple DP, the Free State and different types of Construct States. This study is unique because it has examined each structure in detail, and this has uncovered previously unreported patterns, especially in relation to Adjective-Headed Constructs. Another special feature of this study is the comparison between Modern Standard Arabic and a spoken variety - Makkan Arabic. The approach taken to the relationship between these two varieties is that they form different pieces of the same puzzle. The fact that one pattern is available in one variety but not the other is meaningful if this difference can be explained in terms of the proposed analysis. In other words, if the proposal can accommodate the patterns of the two varieties, then a uniform account of the Arabic DP is within reach and the discrepancies become less problematic. These two elements - the proposed structure and the differences between the varieties - all add support to each other and they form a whole context within which the Arabic DP in general can be understood. In this concluding chapter, I will summarise the main findings of this study, discuss some implications and suggest topics for future research.

7.1 Main Findings

This thesis deals with a range of issues, ranging from theoretical to data-driven and structure specific ones. The main theoretical problem this thesis tackles is the issue of the incompatibility between standard Head Movement and the principles of current minimalist syntactic theory. Standard Head Movement has been claimed to be countercyclic because it does not target the root (Chomsky, 1999). This thesis considers cyclicity to be an important notion of syntactic theory, and therefore the approach taken to this issue is that Head Movement should be reformulated in order to make it more compatible with current minimalist assumptions. This issue is important to resolve in the context of analysing the Arabic DP because standard Head Movement has been a major element in the majority of the generative literature on this part of Semitic syntax. In chapter 3, I propose, in line with some current approaches, that allowing heads to move in such a way that their movement targets the root resolves the (purported) theoretical conflict. I explain that current syntactic assumptions, mainly bare phrase structure principles, make this movement licit. I also propose that a morphological merger operation merges the attracting head and the moved one after the relevant part of the structure is spelled out. Throughout the rest of the thesis, I show that this approach to Head Movement can be successfully applied to analyse the Arabic DP, and that the morphological merger operation is supported by Arabic data.

One broad aim of this thesis is to specify the properties of the Arabic determiner system. In chapter 4 I propose that there are three kinds of D in Arabic: definite, indefinite and Construct State. Definite and Indefinite D are overt and they do not have a case feature to check. These two Ds are projected in simple DPs and Free Genitives. Construct State D, however, is covert and it has a genitive case feature to check. I propose that this Construct State D is projected in all Semitic Construct State structures, including Nominal Construct States, Quantifier Construct States (chapter 4), Nominalised Adjectival Constructs, Superlative Constructs (chapter 5) and Verbal Noun Constructs (chapter 6). The projection of this D can account for the basic properties shared by all types of constructs, such as including genitive

elements and the incompatibility of the head with overt determiners. This three-way classification of Arabic determiners is a novel idea. Previous studies of the Arabic DP simply project a D in the structure, but such a uniform treatment overlooks some obvious questions such as what makes genitive case checking available in some types of the Arabic DP but not others. Having three types of D makes certain patterns predictable and easy to account for.

Another important theme in this thesis relates to the properties of the Construct State in general and of each type of construct in particular. As pointed out above, the analysis advocated in this thesis attributes the common features of the different types of Construct State to the projection of the Construct State D. The special patterns, however, are claimed to be due to the properties of the heads projected below D in each structure. The heads studied in this thesis are N, Q, N/A, N/SA, N/Num and FN. The first two heads, N and Q, form Nominal and Quantifier Construct States (chapter 4). Nominal Construct States are the most basic constructs, having simple nouns as heads. Quantifier Construct States are also nominal in nature, and I show that this use of quantifiers in Arabic is derivationally independent of the postnominal use of quantifiers, which is best understood as modificational. In chapter 5 I propose that N/A (Noun/Adjective), N/SA (Noun/Superlative Adjective) and N/Num (Noun/Numeral) are complex heads formed in the lexicon by combining a null nominal with an adjective, and that they can be used to form Construct States which apparently have adjectival heads but function as nominals: Nominalised Adjectival Constructs, Superlative Constructs and Numeral Constructs, respectively. I argue that these constructs are different from the structure often referred to in the literature as the Adjectival Construct, which functions as a modifier, and I claim that this structure is not a construct but rather an adjectival compound formed in the lexicon. This approach to "Adjectival Constructs" is also a new approach to this structure, as these constructs are usually treated as syntactically formed Construct States. Moreover, my three-way classification of Adjective-Headed Constructs is also a novel idea, as previous studies either focus on one structure or fail to note the differences I point out in my discussion of the data. In chapter 6 I propose that

FN (Functional Nominal) is a nominaliser head projected in syntactically formed Verbal Noun Construct States, and that FN is projected above a (partial) verbal structure. I claim that the different patterns associated with these constructs depend on whether or not the complete argument structure of a given verb is projected. Moreover, I argue that some types of Verbal Noun Construct States include lexically formed Verbal Nouns, and that in this case FN is not projected. I claim that the main diagnostic features which distinguish lexically formed and syntactically formed Verbal Nouns relate to the type of modification allowed and the availability of accusative case checking on internal arguments. The unifying feature among all the Construct States studied in this thesis is the Construct State D, a nominal D with special definiteness and case features.

One recurrent idea in the discussion of the differences between Modern Standard Arabic and Makkan Arabic relates to the fact that the spoken variety seems to be more restrictive than the standard one, in the sense that less options are available in the spoken variety. Nevertheless, I pointed out that some structures which are productive only in Modern Standard Arabic may be used on a limited scale in Makkan Arabic and often in rather formal contexts. I claimed that in these cases, speakers of Makkan Arabic would be code switching or using a Modern Standard Arabic structure. If my claim is on the right track, this would suggest that these speakers are essentially bilingual and that they have two separate language systems for the two varieties.

This thesis makes claims relating to the Arabic DP in general as well as to specific structures. The main general claims are about the type of Head Movement which takes place in the course of the derivation of various Arabic DPs and about the details of the Arabic determiner system. The specific claims explain the special properties of the different types of Construct States by attributing these properties to the heads projected in each structure. In the next section, I will discuss the implications of the major findings of this thesis and make suggestions for how they can be used as bases for future research.

7.2 Implications and Further Studies

The findings of this thesis have several implications for various fields of linguistic inquiry. Below I will discuss how these findings relate to syntactic theory, Arabic linguistics and language acquisition and how these fields might take the outcomes of this study further.

The issue of Head Movement and Minimalism has been widely discussed in the context of verb movement, but not in the nominal domain. The arguments presented in this thesis and the use of head-to-root movement to analyse the Arabic DP add support to the recent proposals to redefine Head Movement and making it a cyclic operation. The advantages of this approach to Head Movement are mainly theoretical, but the analyses presented in this thesis at least show that this approach can be used to account for the Arabic DP data previously analysed using standard Head Movement. The Arabic DP in general, and the Construct State in particular, *can* be derived using head-to-spec movement. More work is needed in this area to investigate whether this approach to Head Movement can be supported by data from other structures and languages as well.

In the course of my investigation of the Arabic DP, I have shown that the Arabic lexical system is quite rich. For example, I propose that there are three types of D in Arabic and I show that there is evidence of a word formation process for changing adjectives and superlative adjectives to complex nominalised heads. Moreover, I argue that Adjectival Constructs are adjectival compounds formed in the lexicon. A question which future research might consider is whether other elements of the Arabic grammar can be explained as a result of this language having a complex lexical system. Can such an approach provide more minimalist accounts of some other data? What effects does having a rich lexical system have on other aspects of the grammar?

Studies on language acquisition might also investigate the relationship between Modern Standard Arabic and the spoken varieties in order to determine the validity of my suggestions regarding the use of predominantly Modern Standard Arabic structures by speakers of spoken Arabic. Would this use constitute code switching or

borrowing, or are speakers simply using a higher register of the same language? What does that say about the status of Modern Standard Arabic as a separate language system in relation to the spoken varieties?

There are some parts of this thesis which have simply touched the surface of certain interesting issues and topics, but the time limitations and scope of the study have prevented me from dealing with these topics fully. For example, the system of Arabic numerals is a poorly understood part of the grammar, and it is full of irregularities and specialised patterns, especially in relation to the different cases associated with different numerals. It would be interesting to study the Arabic numeral case system in the context of a more general study of case in Arabic. Another important topic is the issue of control briefly discussed in §6.5.5.2. Control in Arabic is an under-researched topic and it requires studying several aspects of the grammar, especially that control into verbal and nominal complements seem to employ different strategies. I am hoping to pursue these issues in my future work.

The syntax of the Arabic DP and Construct States is not a new topic of research, but the arguments and analyses presented in this thesis have added to that large body of research. This study has not been simply about putting the old in a new mould. It has proposed new accounts of a range of previously studied data, made new classifications and uncovered some previously unnoticed patterns. I hope, therefore, that it has significantly enhanced our understanding of the Arabic DP.

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