The syntax of the Arabic determiner phrase

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THE SYNTAX OF THE ARABIC DETERMINER PHRASE

by

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Thesis
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For Mom and Dad
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This is not to overlook my exceptional gratitude and appreciation towards my great teacher, Dr. Damir Cavar. I feel honored to have worked with him on this thesis. His comments and suggestions were extremely helpful. Working with Dr. Cavar is such a blessing because of his wisdom, down-to-earth attitude, and vast knowledge. Taking courses in computational linguistics with Dr. Cavar has had a great impact on the way I see linguistics. Before his courses, the idea that I chose the wrong major used to haunt me, but with him, my love for linguistics has grown and is still growing.
ABSTRACT

The goal of this thesis is to analyze the syntactic structure of the Arabic determiner phrase (DP) within the confines of Chomsky’s minimalist program. Attention is drawn to a number of the misconceptions many linguists have about this constituent. Some of the issues that linguists overlook include the existence of an indefinite article as well as a possessive determiner that heads the genitive phrase. A new analysis of agreement within DP is presented, as well as an argument against the construct state analysis and analyses of other related issues.
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Introduction

Background

Arabic is a member of the Semitic languages, a subgroup of the Afro-Asiatic language family (see Ruhlen, 1987). Arabic is the major language of the Semitic languages. It is spoken in over 20 countries that cover an area that spans from Oman in the Middle East to Mauritania on the eastern border of the Atlantic Ocean. The number of its speakers as of 2013 is estimated to be 223,010,130 (Paul, Simons, & Fennig, 2013).

Arabic, nevertheless, is composed of many dialects that have been developing and changing to the extent that some of them are not mutually intelligible anymore. The hub of this thesis is not going to be any of these spoken dialects. Rather, it is going to be Modern Standard Arabic (MSA), a variety that no one speaks at home as the regular medium of communication. Chentir, Guerti, and Hirst (2008) point out that MSA is the “Unified Modern Arabic or the Standard Arabic. It is the language which is taught in the schools, and written and spoken in the official contexts.”

Speakers of mutually unintelligible dialects of Arabic tend to use MSA as a lingua franca. MSA is also the main subject of inquiry for many linguists, though dialects have been investigated. MSA offers an abundance of unexplained phenomena and other, possibly misunderstood, ones.

Statement of the Problem

Analyses seem to be straightforward in English when it comes to the nominal expression. It is extensively studied, and the analyses provided for it are mostly satisfactory. In Arabic, however, the situation is different. This is not to say that the present work is the
first to address the determiner phrase in Arabic; rather, the available literature on the Arabic DP is limited.

First of all, it seems that no one of those who dealt with this issue realizes the existence of an indefinite article in Arabic. Gadalla and Abdel-Hamid (2000), as well as many other Arab linguists, refer to this article as “the phenomenon of nunation.” They provide a detailed description of its environment but they do not explain the role it is playing in the determiner phrase. In this work, the nunation phenomenon is reanalyzed, and the Arabic indefinite article is exposed.

Moreover, it seems that linguists have not been able to detect the possessive determiner in Arabic, and as a result they refer to the genitive construction of Arabic as a mysterious construction known as “the construct state.” Longobardi (2001) argues that this construction is determiner-less, which I will argue against in this work.

The Arabic genitive construction analysis known as the construct state is not well motivated. It is more like an emergency exit for linguists who did not understand the structure of the Arabic determiner phrase. In this work, I provide an alternative analysis that clearly explains the existence of a determiner that heads phrases of this kind. I provide an analysis for the structure of these phrases, and the movements that take place inside them as well as what motivates these movements. At the same time, I propose that the genitive construction in Arabic is similar to that found in English.

The aforementioned issues are the hub that this work will revolve around in conjunction with other issues that will be brought under the spotlight.
**Purpose of the Study**

The main purpose of this study is to carefully analyze the Arabic determiner phrase. This study also hopes to draw attention to many of the misconceptions related to the Arabic determiner phrase, as well as provide a scientific analysis supported with sound evidence for the relevant issues to advance the understanding of this syntactic constituent.

Specifically speaking, I aim at drawing the attention of the linguistic community to a number of issues that include the presence of two more determiners in Arabic that I have not found mention of anywhere in the available literature. These two determiners are the indefinite article and the possessive determiner that heads the genitive phrase, known as the construct state.

In light of discovering the possessive determiner, I will argue against the currently dominant approach of explaining the genitive construction in Arabic known as “the construct state.”

In Chapter 5, I discuss atypical cases of MSA DP. These cases are examples of DPs or aspects of certain DPs that seem to contradict the general line of argument that I will be following. I discuss these cases in a separate chapter to be able to allocate enough attention to them, and to avoid unnecessary complexity where possible.

**Justification and Significance**

The linguists who have been exploring the Arabic language have unearthed numerous phenomena in its syntax that are hard to explain. However, when this syntax is broken down to its elementary components, things will start to fall in place. Based on this approach, the focus of this thesis is on Arabic DPs only because understanding the Arabic DP is a cornerstone in pushing the understanding of Arabic syntax forward.
This work does not simply argue against the prevailing and poorly supported hypotheses that address aspects of Arabic DP, it also provides alternative ones that make more sense and are much simpler.

**Limitations**

This work faces a number of limitations, the most challenging of which is the fact that I am analyzing a component of Arabic syntax using the English language as medium of communication between me and the reader. Arabic and English are very different from one another in just about everything, including syntax. Because of this, it is going to be hard enough to drive some points home to readers who understand Arabic, let alone to those who do not due to the numerous operations in Arabic that are not found in English and vice versa.

Finding references in Arabic that deal with this topic has also proven to be a challenge. Most of the available and relevant literature in Arabic is either descriptive or prescriptive. It lacks theoretical analysis in the framework of generative syntax.

As for the available literature in English, few linguists have dealt with the Arabic DP, which makes relevant references hard to come by.

**The Scope of this Thesis: The Nominal Constituent**

The scope of this work extends to the structure of the determiner phrase (DP) in Arabic. The central goal is to provide a detailed analysis of this structure. But, before I delve into the details of Arabic DP, I begin with an introduction to the concept of DP.

A DP is a nominal constituent that was traditionally believed to be headed by the noun inside it and specified by a determiner (see Keenan, 1987). For those who adopted this analysis, a constituent like “the man” was regarded as a noun phrase (NP) where the noun “man” is the head of the constituent, and the determiner “the” is occupying the specifier
position of the constituent. However, this proposal has recently been challenged on a number of grounds, both conceptual and empirical (see Carnie, 2013).

First of all, X-bar theory dictates that specifier positions can be occupied by only phrasal elements, as Bernstein (2003) points out. Moreover, X-bar requires that all non-head materials be phrasal (Carnie, 2013). This, in turn, implies that all content categories as well as functional categories project. Therefore, if determiners are not phrases, they cannot be specifiers, and if they are not heads of phrases they must be phrases. This means that the D in the spec of NP hypothesis is not valid; it is not consistent with X-bar theory. An alternative and very motivated analysis was provided by Abney (1987). In his proposal, Abney argued that nominal constructions are headed by determiners, which means that the maximal projection would be DP (determiner phrase).

It is worth mentioning that determiners, unlike other parts of speech, are motivated purely on a syntactic basis. Unlike parts of speech with lexical content, determiners do not undergo word formation processes nor do they take inflectional morphemes. Moreover, determiners can head not only DPs that are nominal constituents, but also DPs that are sentential or gerundive.

Another piece of evidence for an articulated structure of DP is the fact that possessive determiners in English are in complementary distribution with other determiners such as “the” and “a/an,” as Carnie (2013) states. This complementary relationship is also found in Arabic, as I will point out in this work. Consider, for instance, the following phrases:

1) a. The professor’s approach
   b. * the professor’s the approach
Why does the phrase in 1a become ungrammatical when we add the determiner “the” between “’s” and the possessee, as in 1b? In fact, it’s ungrammatical with any second determiner, e.g., *the professor’s an/my/each approach. One thing that we can safely deduce from this is that “’s” is in complementary distribution with other determiners, and as Carnie (2013) adds, “When two items are in complementary distribution, they are instances of the same thing.” Abney (1987) concludes that the possessive “’s” is itself a determiner, and since there is only one determiner per phrase, structures like 1b are correctly excluded.

Now that it has been explained that “’s” is a determiner, let’s see how a nominal constituent such as example 1a can be represented in X-bar schema. First, this cannot be done following the assumption that determiners are in the spec of the noun phrases. Consider these possible representations from Carnie (2013).

2)

Consider the tree branches above; there is no way to bring these two constituents together without violating X-bar rules. If we assume that the two NPs are daughters of another NP, then it would be problematic to decide which NP projects to the maximal projection. Moreover, every NP will be functioning as a specifier that does not specify a head.
Abney (1987) points out that “a restrictive version of X-bar theory…requires all phrases to be headed.” Thus, having an NP that does not have a head will cause the derivation to crash. The conclusion that we can take from this is that something is wrong with the proposal. Clearly, it is the position of the determiner as a specifier. The assumption that determiners are specifiers of NPs is less plausible.

The alternative proposal of Abney (1987) is that determiners are DP heads that take NP as a complement as well as other types of syntactic constituents that have a nominal character. If we use the DP approach, things will be straightforward, as in the following structure.

3)

From the discussion above, we can deduce that determiners are not specifiers of NPs, but actually are heads of their own phrases. We see that the assumption that determiners are not specifiers of NPs provides more plausible explanations for the following observations:
mutually exclusive distribution, strict left-peripheral position in the constituent, and so on. It is also borne out that NPs are generated inside DPs as complements.

Here we are talking about basic DPs, but before I consider more complex ones, a question arises: Why is it that the NP is assumed to function as a complement of D and not an adjunct? In X-bar theoretic terms, the structural difference between an adjunct and a complement is that a complement is a sister to X and daughter of X', while an adjunct is a sister of X' and a daughter of X'.

Theoretically speaking, complements and adjuncts behave differently and have contrasting properties. One feature that these two constituents diverge with respect to is optionality; adjuncts are optional while complements are obligatory (Dowty, 2003). In light of this, we can safely assume that an NP functions as a complement of D since it is obligatory, as illustrated below.

4) a. the professor’s approach
   b. * the ’s approach
   c. You like Dave’s professor, while I like Mary’s.

The ungrammaticality of 4b is the result of omitting the NP professor. This is evidence that the NP is a complement of the determiner “the” and cannot be an adjunct. Note, however, that in ellipsis, we can omit the NP complement of D, as in 4c, but in this case the NP is eliminated only at PF (phonological form) while it is present structurally.

A DP, however, is not always composed of a determiner and a simple NP. A DP can be very complex, as in the following examples.

5) a. the smart professor
   b. the man in the picture
c. a small business owner (Notice the ambiguity.)

d. the woman I met yesterday while studying for my finals in the library

In 5a, we have the complement of the determiner modified by an adjective phrase. In 5b, the complement is modified by a prepositional phrase. In 5c, the complement is modified by an adjective phrase and a noun phrase. Notice that the adjective in this phrase can be modifying “business,” but it can also be modifying “owner,” which makes the phrase ambiguous. 5d is an example of a very complex DP where the complement has an adjunct in the form of complementizer phrase (CP).

There is little or no literature about the above complex Arabic DP structure, but in this thesis, I hope to bring them under the spotlight to produce analyses that account for their basic structure and the transformations that lead to their surface structure.

**Thesis Organization**

In this introductory chapter, I provided a general background about the topic, the statement of the problem, the purpose of the study, justification and significance, and limitations of the study. In addition, I laid the theoretical foundations that I will base my analyses on.

In Chapter 2, I argue for the presence of two Arabic determiners: the indefinite article and a possessive determiner that heads the genitive phrase traditionally known as the construct state. It seems that there is very limited literature, if any, about these two determiners, which makes them worth exploring.

In Chapter 3, I provide a number of detailed analyses that account for the structure of Arabic DP in all its manifestations. I start with simple DP phrases with no modificational elements and develop the chapter to include very complex DPs.
In Chapter 4, I provide a counter analysis for the currently prevailing construct state analysis. In this chapter, I argue that the possessive determiner introduced in Chapter 2 is the head of this kind of phrases, and this nullifies the main foundation of the construct state analysis, namely the absence of any determiner.

In Chapter 5, I go back to exceptional cases that I did not discuss in the previous chapters or just mentioned briefly to preserve the simplicity of the analyses I provide, and to generate a more general theory that accounts for more. In this chapter, I deeply analyze these cases and connect the dots in my theory.
Chapter 2: Two New Determiners

The available literature on an Arabic indefinite article and a possessive determiner that heads the genitive phrase is very limited to non-existent. In this chapter, I discuss various pieces of evidence that constitute strong indications that these two determiners do exist. In the first section, the Arabic indefinite article is analyzed, while the possessive determiner is discussed in the second part of the chapter.

The Arabic Indefinite Article

Nunation: The indefinite article.

In Arabic, there is a phenomenon known as nunation that linguists and Arabic grammarians have not fully investigated. It seems that those who wrote about this phenomenon have not been able to unveil its complete syntactic structure.

Nunation, as Jahawi (1905) defines it, is the affixation of an /-n/ to the end of nouns, as in the following example:

1) kitab-u-n

book-Nom-Nunation

“a book”

There are, however, many other syntactic categories that host this suffix. These hosts include but are not limited to adjectives.

The nunation phenomenon in Arabic is very productive. In addition to expressing indefiniteness, it is also used to express a variety of other semantic properties. In this work, a detailed analysis of nunation is provided, and it is argued that nunation, with respect to one important use of it, is an indefinite article. Dobrovie-Sorin (2002) regards nunation as the
indefinite article but does not provide evidence to support that. In this chapter, evidence is provided to justify this claim.

I argue that the suffix /-n/ is an indefinite article that attaches to nouns and adjectives after the case marker to mark indefiniteness. This argument is based on the fact that /-n/ is in complementary distribution with /el-/ , which is a definite article, as the following examples in 2 indicate.

2)

<table>
<thead>
<tr>
<th>a.</th>
<th>el-kita:b</th>
<th>d.</th>
<th>el-bejt</th>
<th>g.</th>
<th>el-qolom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the-book</td>
<td></td>
<td>the-house</td>
<td></td>
<td>the-pen</td>
</tr>
<tr>
<td></td>
<td>“the book”</td>
<td></td>
<td>“the house”</td>
<td></td>
<td>“the pen”</td>
</tr>
<tr>
<td>b.</td>
<td>kta:b-u-n</td>
<td>e.</td>
<td>bejt-u-n</td>
<td>h.</td>
<td>qolom-u-n</td>
</tr>
<tr>
<td></td>
<td>book-NOM-Indef</td>
<td></td>
<td>house-NOM-Indef</td>
<td></td>
<td>pen-NOM-Indef</td>
</tr>
<tr>
<td></td>
<td>“a book”</td>
<td></td>
<td>“a house”</td>
<td></td>
<td>“a pen”</td>
</tr>
<tr>
<td>c.</td>
<td>*el-kita:b-u-n</td>
<td>f.</td>
<td>*el-bejt-u-n</td>
<td>i.</td>
<td>*el-qolom-u-n</td>
</tr>
<tr>
<td></td>
<td>the-book-NOM-Indef</td>
<td></td>
<td>the-house-NOM-Indef</td>
<td></td>
<td>the-pen-NOM-Indef</td>
</tr>
<tr>
<td></td>
<td>*“the a book”</td>
<td></td>
<td>*“the a house”</td>
<td></td>
<td>*“the a pen”</td>
</tr>
</tbody>
</table>

As you can see in the three sets of examples above, a, d, and g are grammatical. They all host the definite article “el-”. Examples b, e, and h are also grammatical. All of them have the morpheme /-n/ as a suffix, and all of them have an indefinite interpretation. Examples c, f, and i, however, are ungrammatical. This ungrammaticality can be attributed to the co-attachment of both the definite article “el-” with the morpheme “-n”. Note that this
ungrammaticality cannot be attributed to the co-attachment of both /el-/ and the nominative marker, which is present in all three examples; this is because /el-/ and the nominative marker can perfectly attach to the same root, as in the following example.

3) el-bejt-u $a$:min
   the-house-Nom safe
   “the house is safe”

This leaves us with /el/ and /n/. It seems that it is ungrammatical to have the two affixes attached to the same noun. Only one of them can be attached. This means that these two affixes are in complementary distribution, and as Carnie (2013) states, “When two items are in complementary distribution, they are instances of the same thing.” Hence, we come to the conclusion that /-n/ and /el-/ are instances of the same thing. /el-/ marks definiteness while /-n/ marks indefiniteness.

Pragmatics provides us with further evidence that /-n/ is an indefinite article. In the following example, I provide a context in which I introduce a noun phrase with the suffix /-n/. Then, in a subsequent sentence, I use /-n/ with the same noun phrase to see if it remains compatible with it. If not, we can say that the test presents evidence that /-n/ marks indefinites.

4) a. raʃejtu raʒul-a-n
   saw(1stSgPast) man-Acc-n(indefinite)
   “I saw a man”

b. *raʒul-u-n badaː mari:dˁan
   man-Nom-n seemed sick
   *“a man seemed sick” (The speaker refers to the same man in 4a.)
As we can see in the example above, it is ungrammatical to use /-n/ with a noun when that noun is supposed to be definite. This is a strong evidence that /-n/ is the indefinite article in this case.

The two articles /-n/ and /el-/ are not only in complementary relationship in terms of definiteness, but also in terms of environment. /el-/ is a prefix, while /-n/ is a suffix. There is more to be said about the position of these articles in the determiner phrase in Chapter 3.

Nunation is also in complementary distribution with other determiners like the possessive pronouns. It is ungrammatical to put nunation on a word that carries a possessive pronoun or vice versa, as in the two examples in 5.

5) a. *sejarətu-n-ha
car-nunation-her
*“her a car”
b. *ktta:bu-n-kum
book-nunation-your (MascPl)
*“your (MascPl) a book”

The ungrammaticality of the two examples above lies in attaching both a possessive pronoun and nunation to the same word. This means that they are in complementary distribution and consequently two faces of one coin. In this case the coin is a determiner.

Presentative constructions provide us, in addition, with a piece of evidence that /-n/ is an indefinite article. Presentative constructions, as Breivik (1981) points out, are tools to present new information. These constructions are typically started with existential “there,” as in 6.

6) huna:kə raʒul-u-n
fi l-ḥadiːqət-i
there  man-NOM-nunation  in  the-garden-GEN

“there is a man in the garden”

One essential feature of this kind of constructions is the fact that the referent, which is regarded as the new information, always carries the indefinite article. Generally, in a discourse, nouns that are regarded as new information carry the indefinite article rather than the definite one. In example 6, we see that /raʒul-u-n/ “a man” carries /-n/, and it happened to be true that it is ungrammatical to remove /-n/ and attach the definite article, as in 7 below.

7)  * hunaːkə  er-raʒul-u  fi  l-hədiːqat-i
       there  the-man-NOM  in  the-garden-GEN

*“there is the man in the garden”

The same thing is true for English; witness the ungrammaticality of the English literal translation of example 7. The correct structure would be to remove the definite article and replace it with the indefinite article, as in 8.

8) There is a man in the garden.

This illustrates that where the definite article fails the compatibility test with this kind of construction, nunation does pass the test. This is a strong indication that nunation is used as the indefinite article.

Consider example 9. At first glance, it would seem that the definite NP can appear in the existential construction, contrary to what was just discussed above. However, we are dealing with a different construction that conveys an entirely different meaning. The word “there” in this example is not used to express the existence of some X. It is instead used to draw the attention to the location of X.

9)  hunaːkə  er-raʒul-u  l-mesʕuːl
there the-man-NOM the-responsible
“there is the man in charge”

**Nunation: Exceptional cases**

Before sealing this topic, it is crucial to mention that nunation is not always used as an article to mark indefiniteness, as most Arab grammarians assume. There is a variety of things, according to them, that can be achieved with nunation. This is probably the main reason linguists did not see “-n” as an indefinite article. But we should not forget that homophony is a natural phenomenon in natural languages. Take the English phoneme “-er,” for example. This phoneme is used to transform verbs to nouns, as in read → reader, write → writer. We also find “-er” used to derive the comparative form of adjectives as in tall → taller, fast → faster, as well as adverbs, as in hard → harder, loud → louder. On the surface, it seems that we are dealing with one phoneme, but as a matter of fact, we are dealing with two different phonemes that happen to be phonologically identical.

Nunation in Arabic can be regarded as the “er” in English. It has different usages, and in each case we are dealing with an entirely different morpheme. Below are some of the different cases that involve nunation, as many Arab grammarians and linguists including Jahawi (1905) pointed out.

**Nunation and ellipsis**

One thing that nunation is used for is substitution. In many cases, a word or phrase or a sentence is substituted for by nunation. Consider the following example.

10) kullu-n enʕəzə ŋəma-hu:
   every-nunation finished work-his
   “everyone finished his work”
In the sentence above, we have the word /waːḥdr-n/ “one” in “everyone” substituted for by /-n/. In this case, the nunation is not used to say that “every” is indefinite. It is actually ungrammatical to attribute definiteness or indefiniteness to a determiner. In other words, a determiner can be definite or indefinite by default, but you cannot attach another morpheme to it to make it so. For example, the English determiner “the” is definite by nature, and adding the indefinite article “a” to it does not make it indefinite. It is, in reality, ungrammatical to do so.

The above analysis of /-n/ substitution is the prevailing if not the only analysis for this case of nunation that Arab linguists including Jahawi provide. This analysis does not explain where /-n/ starts in the deep structure or why it is the only candidate that can replace the NP “one.” For those reasons, I provide the alternative analysis below.

If we look at the missing word in Arabic, /waːḥdr-n/ (one-Nunation) “one,” we see that it ends with a nunation. For that, we can put forth the idea of /-n/ substituting for “one” because /-n/ was already there. Saying that /-n/ substitutes for “one” implies that /-n/ is roleless in the other case where there is no substitution. Following the paradigm of Chomsky’s minimalist program (1997), I believe that language contains only items that are necessary to meet our phonological and conceptual needs. Therefore, if we have nunation on the missing word, it has to be playing a role.

It turns out that this is the case. “-n” is actually functioning as an indefinite article that heads DP containing the missing word, as illustrated in the tree below. Note that the suffix “-n” as the head of the lower DP appears to the right of its NP complement in the deep structure. That is the right position. I will return to explain that in the following chapter.
Now that we know that /-n/ is present in the deep structure doing its job as the head of the lower DP, we can cross out the substitution hypothesis because it should be clear by now that the process involved is ellipsis, which targets the NP complement of “-n.” The takeaway from this is that nunation is not substituting a phrase in this case. It is, rather, the indefinite article being left after the elision of its NP complement.

A question that arises is whether it is acceptable to elide a constituent without an antecedent. The answer is no, and for a sentence like the one in example 10 above to make sense, there has to be a mention of the elided NP in the discourse before the ellipsis takes place. Another thing to keep in mind is that the elided NP does not have to be “one,” as in example 10. It can be any NP as long as it is understood from the discourse, as in example 12.

12) ejna l-ʕəʕfa:1-u? Kullu-n əhəbə ila l-medrəsət-t
where the-kids-NOM every-Indef went (3rdSGPast) to the-school-Gen

“Where are the kids?” “every one of them went to school”

In example 123, we see that in the second clause /-n/ is attached to the determiner /kullu/ because the NP that it attaches to is elided since it is understood from the first clause.

To connect the dots, the elided NP in this case is /tˁifl/ “kid,” which confirms that any NP can be elided in this kind of structures under identity.

Now, we can move on to tackle a more complex case of ellipsis involving nunation.

In this case, we have a whole TP replaced with nunation, as in the following example.

13) sewfə ᵉunhi risaːl-t-i. jewm-ə-ʔə-ʔaħtəfiš

will finish (1stSg) thesis-my. day-NOM-when-nunation will-celebrate (1st Sg).

“I will finish my thesis.” “That day, I will celebrate.”

In this example, the TP inside the first clause seems to be substituted for by nunation in the second clause. This is hard or impossible to detect in the English translation, but the evidence of this substitution is as follows. When the nunation in the second clause is deleted, the clause becomes ungrammatical, as in 14.

14) * sewfə ᵉunhi risaːl-t-i. jewm-ə-ʔə sə-ʔaħtəfiš

will finish (1stSg) thesis-my. day-NOM-when will-celebrate (1st Sg).

“I will finish my thesis.” “That day, I will celebrate.”

The only way to make the second clause grammatical without the nunation is to insert the TP of the first clause, as in 15.

15) jewm-ə-ʔə-ʔuŋhi risaːl-t-i sə-ʔaħtəfiš.

day-NOM-when finish (1stSg) thesis-my will-celebrate

“The day I finish my thesis, I will celebrate.”
Looking at the examples above, it seems that nunation is not only used as the indefinite article but also used for other purposes, including TP replacement. This is clearly an analysis that merely scratches the surface of this issue. I believe that what is going on in the above example is an advanced case of ellipsis; I regard the nunation as an indefinite article related to the noun /jewm-ə/ “day” before it.

As we can see, the elided TP comes after the noun /jewm-ə/ “day” followed by /ɪð/ “when.” Based on that, I am going to argue that what we are dealing with here is a complex DP with an embedded CP functioning as a relative clause. See the tree in 16 for illustration.

16)

The tree represents the deep structure of the DP. That is why the word order does not yet match the surface order. To solve the ordering problem, I argue that the process of eliding the lower TP triggers lowering of D for semantic reasons. Semantically speaking, the
complementizer /ð/ “when” has to be followed by something or the result will be a fragment that does not convey a complete meaning. When D lowers to satisfy this condition, it probes the area for a host since it is an affix, and the closest element that it can attach to is the complementizer. It then attaches to it, as illustrated in [17].

17)

This analysis works perfectly until we consider the fact that the indefinite article does not exist in the structure if there is no TP ellipsis. If the whole sentence is constructed without ellipsis, it is grammatical only if there is no /-n/ in D. This implies that the /-n/ that shows up after the process of TP ellipsis is not the indefinite article. If it is not the indefinite article, then what is it? This takes us back to the proposition that nunation is not used only as the
indefinite article, it can also be used for an array of other things. In this case, it seems that it is used to simply mark the elision of a TP.

One thing that is worth mentioning is that this structure is not productive because the number of nouns that can head the NP inside it is very limited. Only words that refer to time can head this kind of NP. Moreover, not all nouns that refer to time can occupy that position.

It seems that what can occupy the head of this kind of NP is only mono-morphemic nouns that refer to short periods of time that are a day long or shorter, such as /jewma/ “day”, /lejlata/ “night”, /saʔata/ “hour”, /dəqiqtə/ “minute”, /hina/ “at the time”. See the following examples that are ungrammatical because of violating these conditions.

18) a) *sewfə ʕunhi risaːl-ti. ʕusbuːʔ-ə-tət-n sa-ʕahtəfil
   will finish(1stSg) thesis-my. week-NOM-when-nunation will-celebrate(1st Sg).
   “I will finish my thesis. That week, I will celebrate.”

b) *sewfə ʕunhi risaːl-ti. saʔət-ə wə nisf-ə-tət-n sa-ʕahtəfil
will finish(1stSg)thesis-my. hour-NOM and half-NOM-When-Nunation will-celebrate(1st Sg)
“I will finish my thesis. That hour and a half, I will celebrate.”

Example 18a is ungrammatical because the head of NP is /ʕusbuːʔ/ “week”. The word week is clearly longer than a day, which is the longest possible word time-wise that can occupy N. In example 18b, the sentence is ungrammatical because the mono-morphemicity of N is violated. We have two nouns conjoined with “and,” which makes N composed of three words.
Nunation on adverbs.

Another environment where nunation is used productively is adverbs. Many adverbs in Arabic, in addition to taking nominative case, host the nunation, as in the following examples.

19) a) َُلدَهَن "very"
   b) مَسْرَهَن "quickly" (3dSgMasc)
   c) كَثَرَهَن "a lot"
   d) دَفَهَن "always"

   It is not clear what role nunation is playing here. Unfortunately, there is little, if any, literature that deals with this issue. It seems that a satisfactory analysis for this case is beyond the scope of this work, but to maintain a general theory about nunation, I will assume for now that these adverbs are inherently indefinite because they always show nunation, though it would be unclear what indefiniteness means with an adverb. I will suppress details relevant to this issue pending further investigation. Another piece of evidence that might be used to bolster the claim that some adverbs are inherently indefinite is the fact that there are other adverbs that are always prefixed by the uncontroversial definite article like the ones in 20.

20) a) "now"
    b) "today"

   This can mean that in Arabic whilst some adverbs are inherently definite, others are inherently indefinite. Note that /n/ at the end of example 19a is part of the root and not the indefinite article.
**Nunation on Proper Nouns**

Nunation can also show up on proper nouns, which are typically definite. However, in some cases, proper nouns can be made indefinite by adding an indefinite article, as we see productively in English and other languages, as in sentences such as 21.

21) Hey, Tom! A Sarah called to ask if you're still looking for a job.

Sarah is a proper noun, and thus, it is definite inherently, but in the example above, Sarah is used as an indefinite noun because the speaker does not know who Sarah is. What the speaker knows for certain is that Sarah is a member of a set of females, each of whom is named Sarah. But because the speaker does not know which Sarah is referred to in this case, he or she resorts to using the indefinite form of the name. The same technique is used in Arabic.

In Arabic, if the proper noun is regarded as indefinite, nunation is attached to it, and this is another indication that nunation is the indefinite article in Arabic. Consider the following example.

22) qaːbeltu Zejd-ə-n ?mdə hafl t-texaruğ-t

met(1stSgPast) Zeid-Acc-Indef at ceremony graduation

“I met a Zeid at the graduation ceremony.”

The noun Zeid in this sentence, regardless of its being proper, is used as an indefinite noun by attaching the /-n/ to it. It is indefinite because the listener does know who Zeid refers to. For him or her, Zeid can refer to anyone called Zeid.

Nevertheless, nunation does not seem to always express indefiniteness when it attaches to proper nouns. There are cases where the proper noun is clearly definite and both
the speaker and listener know what it refers to, yet it still carries the nunation, as in example 23.

23) muhammed-u-n rasu:l-u llah

Mohammed-Nom-nunation messenger-Nom/Poss. Allah

“Mohammed, the Messenger of Allah”

A phrase like this spoken by a Muslim to another would leave no doubt about the referent of Mohammed. Yet we still see that it takes the nunation. It seems that nunation in this case is not used as the indefinite article. But it can be argued that nunation here is used as the indefinite pronoun for the following reasons.

First of all, it makes sense that any proper noun that is used to refer to different entities is indefinite until specified by extra information in the discourse. Mohammed, for example, is the most common first name in the world. It refers to a large set of males. Therefore, using it in a discourse for the first time cannot be definite because it can by any member of the set consisting of Mohammonds. Thus, the indefinite article is attached, as in the example above. The phrase that follows “Mohammed” in example 23 above disambiguates it, making the whole structure definite in principle. What is more interesting is that when the phrase that disambiguates the proper noun is introduced before the proper noun itself, the indefinite article is dropped, as in 24.

24) rasu:l-u llahi muhammed

messenger-Nom/Poss. Allah Mohammed

“the Messenger of Allah, Mohammed”

In this example, the noun Mohammed is not ambiguous because the phrase “the Messenger of Allah” that comes before it restricts what it refers to. In other terms, “the
Messenger of Allah” binds “Mohammed.” Carnie (2013) defines binding as follows: “A binds B if and only if A c-commands B, and A and B are coindexed.” If A in this case is “The Messenger of Allah” and B is “Mohammed,” then A c-commands B, and we know that both A and B in this case refer to the same thing; thus they are coindexed, and, consequently, A binds B. The bottom line here is that “Mohammed” gets its meaning from the phrase before it, which makes it definite, and this explains the ungrammaticality of affixing nunation to it, as in 25. This also means that nunation here is used as the indefinite article.

25) *rasuːl-u illahi muhammed-u-n

   messenger-Nom/Poss. Allah Mohammed-Nom-Indef.

   *“The Messenger of Allah, a Mohammed”

In short, nunation in Arabic refers to homonymous relationship between the Arabic indefinite article and other phonologically identical morphemes that are used for other purposes. The purpose of this discussion was to polish the indefinite article that has been invisible for linguists due to its homophonous nature with other cases of nunation.

The Possessive Determiner

In this section, I put forth an analysis that provides evidence for the existence of a possessive determiner at the heart of the Arabic genitive phrase. This proposition will overthrow the construct state analysis since it does not recognize this determiner. Longobardi (2001) argues that the Arabic genitive phrase is determinerless, which I will argue against in this work, but before breaking down the genitive construction as a whole, here is my argument for the existence of a possessive determiner heading genitive phrases in Arabic.

First of all, there are a number of phrases that do not have anything in common except that all of them express a possessee-possessor relationship between two nouns.
Looking at these phrases morphologically, we can decide if there is a morpheme that is common to all these phrases. If there is, we can assume that it has to do with genetiveness, but this is not enough to conclude that this morpheme is the possessive determiner because it possibly is marking the genitive case. To solve this problem, I will provide more data later to separate between the determiner and the case marker.

26) a. seyarət-u ahmed
                   car-X. Ahmed
                   “Ahmed’s car”
 b. mɪʔtˤəf-u l-устаð
                   coat-X the-professor
                   “the professor’s coat”
 c. haːtf-u zejd
                   phone-X Zeid
                   “Zeid’s mobile”
 d. ʕusluːb-u l-устаð
                   method-X the-professor
                   “the professor’s method”

We see that in each example, there is the morpheme /-u/, which I will refer to as X for now. This morpheme seems to occur productively between the possessee item and its possessor. Witness that when /-u/ is removed from this construction, the result would be a perfectly fine genitive phrase in colloquial Arabic but not in MSA. Example 26a without /-u/ repeated below as 27 is grammatical in Hassaniya Arabic.

27) seyarət ahmed
car Ahmed

“Ahmed’s car”

The fact that the morpheme /-u/ is always present between the possessee and the possessor in MSA genitive phrases can be used as a piece of evidence that this is the possessive determiner. But one can assume that this morpheme is the marker of the genitive case. However, the following data makes it clear that this morpheme is not the genitive case marker because it is in complementary distribution with determiners like /el-/ “the” and /-n/ “Indef”.

28) a. *es-seyarət-u ahmed

the-car-X. Ahmed

* “Ahmed’s the car”

b. miʔəf-u-n 1-ustað

coat-X-Indef the-professor

*“the professor’s a coat”

c. *el-haːtf-u zejd

the-phone-X Zeid

*“Zeid’s the mobile”

d. *ʕusluːb-u-n 1-ʕustað

method-X-Indef the-professor

*“the professor’s a method”

These examples are all ungrammatical because of the co-attachment of the article /el-/ “the” with /-u/ “X” to the same word, as in examples 28a and 28c, or co-attachment of /-n/ “Indef” with /-u/ “X” to same word. If the morpheme /-u/ was marking the genitive case,
then it should not be in complementary distribution with the articles /el-/ and /-n/ because case markers are not determiners. Therefore, they should not be in complementary distribution with determiners.

We have seen so far that /-u/ “X” is always present between the possessee and the possessor, as illustrated in 28. We also saw that it is in complementary distribution with the articles /el-/ and /-n/. The data below provides more details about the nature of this morpheme. This next set of data illustrates that /-u/ “X” is in complementary distribution not only with /el-/ and /-n/, but also with other determiners like the possessive pronouns, as illustrated in the examples below.

29)  a. *seyarət-u-hu ahmed
car-X-his. Ahmed
   * “Ahmed’s his the car”

   b. *kitaːb-u-ha aisha
   book-X-her Aisha
   *Aisha’s her book

The discussion above makes clear that the morpheme /-u/ “X” is in complementary distribution with determiners in general. This can only mean that it is a determiner itself, and the fact that it is always present in all the genitive constructions in Arabic is a strong piece of evidence that it is a possessive determiner.

Now that the Arabic possessive determiner has been unveiled, and we have established a valuable test, namely the complementary distribution test, to identify it, it is time to tackle a spikier issue that will blur the picture to some extent—but we can always resort to our test to produce the right judgment.
In Arabic, there is a fusional morpheme that is used to express both case and the possessive determiner. This means that the possessive determiner is not a fixed morpheme, but rather a morpheme that changes to resemble the case marker and fuses with it. This might sound vague, but consider this to see the whole picture.

In Arabic, there are three main cases: the nominative case marked with /-u/, the accusative case marked with /-ə/, and the genitive case marked with /-ɪ/. (See Gadalla & Abdel-Hamid, 2000.) What happens is that in genitive constructions, the same morpheme that marks case is also used as the possessive determiner, and hence the fusional nature of the morpheme. See the following data for illustration.

30) a. seyarət-u ahmed tettasiʔu lɪ sebəti rukkab
   car-NOM/Poss. Det. Ahmed accommodates for seven passengers
   “Ahmed’s car accommodates seven passengers”

b. istəʔar-tu seyarət-ə ahmed
   borrowed-1stSg car-ACC/Poss. ahmed
   “I borrowed Ahmed’s car”

c. el-haqibet-u fi seyarət-i ahmed
   the-suitcase-NOM in car-GEN/Poss. ahmed
   “The suitcase is in Ahmed’s car.”

In the data above, the genitive phrase “Ahmed’s car” assumes a different syntactic role in each example, which gives it a different case that conforms to the role it is assuming. It takes NOM in a, ACC in b, and GEN in c. In each of these examples, the same morpheme that marks case is the one used as the possessive marker. This may sound counterintuitive, using one morpheme to express two syntactic features. However, this is a known
phenomenon in many world languages. Take the English morpheme “their,” for example. This is a fusional morpheme that expresses simultaneously third-person possessive and plural (Spencer 1998). Plural, person, and possessive are obviously different features, yet they are expressed by this single morpheme. But even if you accept for the sake of argument that this is fusional morpheme, you still should ask for evidence.

The evidence in this case can be the result of the complementary distribution test I proposed above. If we assume that the case marker in the examples above is not used as the possessive determiner, then it should be grammatical to attach other determiners to the same word hosting the case marker because case is not in complementary distribution with determiners. That is not the case, however.

The possessee in the three sentences in 10 above, as well as in any genitive construction in Arabic, hosts a case marker but it never hosts other determiners like /el-/ and /-n/. As a matter of fact, it is ungrammatical to attach any determiner to the possessee in the genitive construction, as in the example below.

31) *es-seyarət-u ahmed tettasi?u l t sebətī rukkab
   the-car-NOM/Poss. Det. Ahmed accommodates for seven passengers
   *“Ahmed’s the car accommodates seven passengers”
   This example makes clear that /-u/ in this case in not simply used to mark case because it is perfectly grammatical to have both the case marker and another determiner attached to the same noun, as in the following example.

32) es-seyarət-u hamraʃ
   the-car-NOM red
   “the car is red”
In conclusion, in Arabic genitive constructions, the case marker is used as a possessive determiner, and that is the reason this fusional morpheme does not tolerate other determiners attached to the same noun it is attached to. For more details, refer to Chapter 4 where I provide a detailed analysis of the genitive construction in Arabic.

Summary

In this chapter, I presented arguments for the presence of two determiners in Arabic that have been in disguise until this work. In the first part of this chapter, I argued that the morpheme /-n/ known as nunation is used as the indefinite article for the fact that it is in complementary distribution with the definite article /el-/ as well as other determiners like the possessive pronoun. I also used the structure of presentative constructions as evidence to bolster my argument. After establishing the idea that nunation in Arabic is used as the indefinite article, I went on to add that nunation is more complex than just being an indefinite article that attaches to indefinite nouns. Surprisingly, nunation is found to replace elided NPs and elided TPs in some cases. More strangely, it turned out that it attaches to adverbs, and this suggests that we are dealing with a case of homophony where one homophone of /-n/ is used as the indefinite article while the other is used for other purposes.

In the second part of this chapter, I argued for the presence of a possessive determiner at the heart of genitive constructions that have been believed to be determinerless, as linguists who advocate the construct state analysis, including Longobardi (2001), claim. To accentuate this possessive determiner, I started with providing a set of data that is composed of genitive phrases that do not have much in common except expressing a possessee possessor relationship between two nouns. What stood out in this data is the presence of the morpheme /-u/ at the heart of each phrase between the possessee NP and the possessor NP.
This was enough to assume that it is the possessive determiner, but I went on to test this assumption by employing the complementary distribution method. The result showed that this morpheme is in complementary distribution not only with /el-/ and /-n/, but also with possessive pronouns. Therefore, it is borne out that it is a possessive determiner.
Chapter 3: The Structure of the Arabic DP

In this chapter, the different manifestations of Arabic DP are analyzed starting with the complementary distribution in the position of the definite article and indefinite article. Then evidence for N to D raising is presented. After that, a number of analyses that explain agreement between N and the adjectives that modify it are provided. I conclude by shedding light on the position of the prepositional phrase (PP) and the complementizer phrase (CP) inside NP. I also talk about two competing analyses—one that assumes that all modifiers are generated pre-nominally in the deep structure, and the other that assumes that they are generated post-nominally in the deep structure.

The Position of Articles and N to D Movement

Now that I have flattened some bumps on the road in Chapter 2, I proceed to investigate various grammatical structures of the Arabic determiner phrase while providing analyses that conform to the framework of the current syntactic theory.

One major factor that differentiates the Arabic DP from other languages is that the two determiners, the indefinite article and the definite article, are in complementary distribution in terms of their environment; the definite article attaches as a prefix to nouns while the indefinite article attaches as a suffix after the case marker. See example 1.

1) a. er-raʔul
   the-man
   “the man”

b. raʔul-u-n
   man-NOM-Indef
   “a man”
I argue, however, that both these articles start in the same position in the deep structure of the phrase. They both start in D to the left of the NP as the head of the determiner phrase. Then after transformations that lead to the surface structure, they end up in different positions in the determiner phrase. The question is, what is the nature of these transformations, and what evidence is there to support this claim? First, example 2 shows an abstract representation of the simple Arabic DP that has no modifying elements. I will use this illustration as a starting point to explain my proposed analysis.

2) 

![Diagram of DP structure]

Articles are determiners and thus they will start in D while nouns will start in N. But, unlike English, articles in Arabic are affixes. Since D is an affix that requires an N host, either D or N has to move to the other. For reasons that I will explain below, I argue that, on one hand, N moves to right-adjoin to D when D is occupied by the definite article or other determiner, as in 3a. On the other hand, N moves to left-adjoin if D is occupied by the indefinite article, as in 3b.

3) a. 

b.
There does not seem to be a syntactic motivation for the fact that N moves to the right of the definite article and to the left of the indefinite article. This alternation seems to be purely phonological. The reason that /-n/, the indefinite article, attaches after the case marker can be attributed to the syllable constraints of Arabic. In standard Arabic, syllables always start with a consonant, but consonant clusters are not allowed word initially in the onset except in CV and C dialects of Arabic, as Kiparsky (2003) notes. This explains why the indefinite article /-n/, which is a single consonant, cannot attach word initially, as does the definite article, because doing so would create a complex onset that is not allowed in MSA. This, however, remains an interesting speculation because the phonology does not normally intervene in morpheme ordering.

Moving beyond the phonotactics of the D position relevant to N, what evidence is there that supports the claim that N raises to D and vice versa? The position of adjectives inside the determiner phrase can be used as evidence to support N to D movement. As Bernstein (2003) points out, as do many other linguists such as Valois (2006) and Picallo (2012), underlingly adjectives start to the left of the noun they modify. The same argument
is put forth by Cinque (2010), Crisma (1993), and Zamparelli (1993). Assuming this, then given the word order in Arabic, I argue for N to D in Arabic DP, as illustrated in 4.

4)

The movement of N to D in this case achieves two things. It salvages the affix and it creates the correct surface word order, which is noun-adjective. It should be clear by now that D does not lower to N because that would create the ungrammatical phrase adjective-noun.

Another analysis that can be used to explain word order in the Arabic DP is that adjectives are positioned post-nominally in the deep structure, and the movement of N to D or D to N does not affect them, but this analysis fails to explain the direction of movement between D and N. Therefore, I will stick with the approach that adjectives are left adjuncts of N.
**Adjective Phrases Inside DP**

“[I]n a straightforward Arabic noun-adjective phrase, the adjective always comes after the noun and agrees with it in gender, number, definiteness, and case” (Alhawary, 2011). This is an interesting type of agreement that takes place in the nominal domain. For that, I will refer to it as “concord” to set it apart from agreement between the verb and its subject.

One thing that differentiates concord in Arabic from subject verb agreement is that in a DP both the noun and the adjective modifying it show the definiteness marker, something which lead Fehri (1999) to argue that since adjectives inside DP host the definite article they must be directly associated with their own DP. Fehri’s proposal is illustrated in 5.

5) This representation entails that the adjective is either definite or indefinite depending on the determiner. On one hand, Fehri, in this analysis, fails to account for the fact that the adjective has to agree with the noun it modifies in terms of definiteness. This means that if
the higher D is occupied by the definite article, the adjective has to be definite as well, but in the structure that Fehri proposes, there is nothing that restricts having disagreement in definiteness between the noun and the adjective because the adjective is considered a separate DP. Based on semantic considerations, on the other hand, adjectives are not definite or indefinite, and if the definite article shows up on the adjective “kind,” for example, it does not mean that the adjective “kind” in this case is a unique adjective that is different from another unspecified adjective “kind.” The point I want to make here is that the affix attached to the adjective is not the head of a sub-DP. Rather, it is a [-/+ Def.] feature that reflects agreement between the noun and the adjective that modifies it. This makes it clear that there is a need for a mechanism that allows for nouns and the adjectives that modify them to agree. This mechanism is known as feature checking.

Feature checking leads to agreement when an element that carries certain features checks those features against a target element (Koopman, 2006). This feature checking has to be local. As Carstens (2000) notes, it has to follow one of three configurations that allow for locality. These configurations are specifier and head, head X checking features against another head Y, or head X checking features against the spec of another head Y after X has adjoined Y. See illustration in 6. The dotted line does not indicate movement; it indicates feature checking.
Now that it is clear how features are checked, I propose the agreement phrase (AgrP) as a functional category to allow for local feature checking between nouns and adjectives. I also propose that the head of this functional category carries the uninterpreted features: case, gender, number, and definiteness. This AgrP is going to be the complement of D, and it will take the NP as its complement. See illustration in 7.
The above tree can consequently be regarded as the representation of the deep structure of any determiner phrase in Arabic. Starting from this, a number of transformations are required to derive the surface structure of any Arabic DP. Note that D has the feature [-/+ Def], which Fehri (1999) considers to be a strong feature that will eventually play a role in attracting N to D.

It is worth mentioning that all the features in the head of AgrP are checked DP internally except for case. The fact that any Arabic DP is always marked for case is a piece of evidence that it is regarded as part of a sentence even though the rest of the sentence is unrealized phonologically, or it is regarded as the complement of a prepositional phrase. Therefore, if case is in nominative, the DP is considered to have had started in the spec of vP where it gets the appropriate theta role. Then it moves to the spec of TP where it can check the nominative case locally with T, as illustrated in 8
If case is accusative, the DP is assumed to start as a complement of the main V. Then it moves up to the spec of AgrOP where it can get the accusative case passing through the spec of VP to satisfy the minimum link condition (MLC), as in 9.

9)
This gives us an idea about how case is checked externally. Now we are left with the rest of the features that are checked DP internally. But, before that, one can wonder if case has to be checked before the rest of the features are checked or if it does not matter what is checked first. It seems that the order of checking of case versus other features does not matter when N right-joins D, as is the case when D is occupied by the definite article /el-/.

However, this is not the case when D is occupied by the indefinite article /-n/. As was noted earlier, the case marker is closer to the root than the indefinite suffix, i.e., N+Case+Indef. If N moves up to left-join D before case is checked, case will have to attach after D, and that will create an ungrammatical phrase, as the one in 10.

10) *kitab-n-u

book-Indef-Nom
“a book”

It would appear that case is checked before any other features are. After checking case, N raises to the head of AgrP to give values for the rest of the features in Agr. Thus, if case is nominative and N is both singular and masculine, for example, all the features in Agr will be checked accordingly when N moves to Agr, as in 11.

11)

The next transformation is the raising of the adjective to the spec of NP where it can check case, gender, and number locally with N. This movement explains why adjectives in Arabic agree with the noun they modify in these features, as illustrated in 12.

12)
At this level, N is still in the head of Agr, but the strength of the Def feature on D and the fact that D is an affix moves N to D to get the Def feature and salvage the affix at the same time. Then the adjective phrase moves to the spec of Agr where it can locally check the Def with N. If D, for instance is the /el-/, then both N and the adjective phrase will have this prefix. However, the /el-/ on N is the definite article that heads the whole DP while /el-/ on the adjective is the [+Def] feature, as argued before. Example 14 is the full-blown illustration of example 13.

13) el-kitab-u l-sahmar-u

    the-book(Sg Masc)-Nom the-red(Sg Masc)-Nom

    “the red book”
An alternative analysis that perfectly accounts for concord between N and the adjective that modifies it is presented below.

In this analysis, I propose the presence of multiple functional categories that conspire together to derive the surface structure of DP. These functional categories are number phrase (NumP), the head of which can take one of these values: singular (Sg), dual (Dl), or plural (Pl), depending on N, and gender phrase (GenP), the head of which can be occupied by one of these features: masculine (Masc) or feminine (Fem), which is checked against N. This analysis works perfectly without AgrP as a functional projection. 15 illustrates the basic deep structure of any Arabic DP according to this analysis.
The analysis goes like this, case is received from an external source, and since I argued that it is checked before other features, I am going to assume that N gets case in its original position in the deep structure. After N gets case, it moves to the head of GenP to give value to the gender feature in Gen. Now that both case and gen features are available in the head of GenP, the adjective phrase raises to the closest position where it can locally check these features, and the best position for that is the spec of NP. The adjective then moves there after N has moved to Gen. After that N raises again to the head of NumP to value the Num feature on the head of NumP, and the adjective follows it landing in the spec of GenP to check the Num feature. See illustration in 16.

16)
The final transformation that leads to the surface structure is the movement of N to D, where N gets the Def feature that it will share locally with the AdjP after it has moved to the spec of NumP. Below is a full representation of example 13 repeated here as 17.

17) el-kitab-u  l-ʕahmar-u

the-book(Sg Masc)-Nom  the-red(Sg Masc)-Nom

“the red book”
Both of the analyses illustrated in 16 and 18 lead to the same grammatical structure with no obstacles, but that is the case only when there is only one AdjP modifying N. The iterative nature of language, however, allows for an unlimited number of AdjPs modifying N. This very fact and concord between all AdjPs and the noun they modify constitute a challenge for the analyses above.

This issue can be solved by using multiple specs to which the AdjPs raise (Carstens, 2000). The use of multiple specs, however, does not conform to the principles of the most recent and elegant version of X-bar, as presented in Carnie (2013). Carnie defines a specifier as the daughter of a maximal projection and the sister of X' level. He also adds that
constituents are built around heads. Taking these two principles in consideration, it becomes impossible to have more than one single specifier per constituent. 19 illustrates multiple specifiers and how they violate the above two principles.

19)

If the assumption is that both YP and ZP are specifiers of X, then the YP is violating the specifier’s principle of being daughter of XP and sister of X’ because in this case, YP is both daughter of XP and its sister at the same time, which is counterintuitive. On the other hand, if the lower XP is headed by X, then what would be the head of the upper XP? XP level in X-bar is the maximal projection of any constituent. Therefore, if X in 19 projects to the lower XP level, then anything beyond that has to be part of a different constituent that has to have its own head. For those reasons, and following Carnie (2013), I will allow only one specifier per constituent. This takes us back to the problem of representing multiple adjectives that concord with N.

To tackle this issue, I will revert to Agr-based derivation; but if we take this derivation as it is and throw a DP with three sub-AdjPs modifying N in it, the derivation will crash because the first AdjP that moves to check the features on N will block any further movement that the rest of the AdjPs may attempt, as illustrated in 20.
As illustrated in 20, AdjPs1 has the chance to move to the spec of AgrP where it can check the features on N, but the derivation does not provide extra slots for AdjPs 2 and 3 where they can check features against N. To solve this problem, I propose the following tweaks on this derivation.

The idea is to have as many AgrPs stacked on top of each other as their AdjPs modifying N. The AdjPs will be Adjunts of N, and the AgrPs will project between D and NP.
Assuming that N received case in situ from outside and that it is inherently specified for gender and number, it moves to the head of AgrP3 to set the values of the features in that head. It then moves to the head of AgrP2 and, subsequently, the head of AgrP1 doing the same. Finally it lands in D where it checks the Def feature and salvage the affix D.

The next thing is raising the adjectives to check the features on Agr heads that have been valued by N raising. The first AdjP to move is AdjP3. It stops in the spec of NP to satisfy the minimal link condition. Then, it moves to the spec of AgrP3 where it checks the features on the head of AgrP3.

After that AdjP2 raises to the spec of AgrP2, checking the features on the head, and so does the AdjP1 by raising to the spec of AgrP1. At this position, AgrP1 is able to locally check the Def feature as well against N, and this checking trickles down to the other AdjPs as follows: the Def feature in the head of AgrP1 is checked against AdjP1. Then AdjP2 checks Def feature locally against the head of AgrP1. AdjP3 checks Def feature against the head of AgrP2, which in turn had checked Def against AdjP2. See 21 for an illustration.

21)
Prepositional Phrases and Complementizer Phrases Inside Arabic DP

Noun phrases in Arabic can be modified by prepositional phrases and complementizer phrases that are typically post-nominal in the surface structure, as is the case for adjectives, but Laenzlinger (2005) argues that all post-nominal modifiers, except for complements, left-adjoin the head they modify in the deep structure. Their linear order, however, is achieved through head movement to a position higher than the modifiers.

Before going into detail, it is crucial to address the issue of the grammatical sequencing of the different types of modifiers that adjunct to N. There are basically three types of modifiers in the NP: adjective phrases, prepositional phrases, and complementizer phrases. It seems that these modifiers are not placed randomly inside the NP. They seem to follow a sequencing rule which goes like this:

Noun+AdjectivePhrase+PrepositionalPhrase+ComplementizerPhrase. Any ordering different from this sequence renders the phrase ungrammatical, as illustrated in 22.

22) a. el-kitab-u es-saqir-u ðu l-ʁɪlɑːf-ɪl-aḥmar-ɪ l-leði fterejitɔu ɣɛms
   the-book-Nom the-small-Nom with the-cover-Gen the-red-Gen that bought(2SMPast) yesterday
   “The small book with a red cover that you bought yesterday”

b.  *el-kitab-u es-saqir-u l-leδi fterejitɔu ɣɛms ðu l-ʁɪlɑːf-ɪl-aḥmar-ɪ
   the-book-Nom the-small-Nom that bought(2SMPast) yesterday with the-cover-Gen the-red-Gen
   *“The small book that you bought yesterday with the red cover”

c.  *el-kitab-u l-leδi fterejitɔu ɣɛms ðu l-ʁɪlɑːf-ɪl-aḥmar-ɪ es-saqir-u
   the-book-Nom that bought(2SMPast) yesterday with the-cover-Gen the-red-Gen the-small-Nom
   *“The book that you bought yesterday with the red cover small”

d.  *el-kitab-u ðu l-ʁɪlɑːf-ɪl-aḥmar-ɪ l-leδi fterejitɔu ɣɛms es-saqir-u
the-book-Nom with the-cover-Gen the-red-Gen that bought(2SMPast) yesterday the-small-Nom

*“The book with a red cover that you bought yesterday small”

In this data, all the phrases are ungrammatical except 22a, which conforms to the sequencing rule above. In 22b, the modifiers are sequenced as follows: AdjP+CP+PP. In 22c, we have CP+PP+AdjP, and in 22d, we have PP+CP+AdjP. The fact that none of these orders is acceptable is an indication that the order of modifiers I proposed is the only acceptable order.

Returning to the representation of these modifiers, the idea that all post-modifiers are left adjuncts does not compromise the correct surface structure because N will eventually raise to D, which is higher than all the modifiers, as the illustration of 22a, repeated below as 23, shows.

23) el-kitab-u es-saqir-u ðu l-kīla:ʃ-ι l-ahmar-ι l-leði jṭerejṭəhu ŋems

the-book-Nom the-small-Nom with the-cover-Gen the-red-Gen that bought(2SMPast) yesterday

“The small book with a red cover that you bought yesterday”
The idea that modifiers are generated to the left of the head does not compromise the correct surface structure, but I have not discovered any evidence or come across it in the literature I have surveyed that tilts the balance in favor of the derivation above against the
derivation below, in which all modifiers are generated post-head in the deep structure, as in 25 below.

25)  

Obviously, the two derivations lead to the correct surface structures with identical transformation. The problem, however, with both of these derivations is that neither provides an explanation of why the modifiers of N should follow a certain sequencing. To solve this problem, I propose a structural constraint that applies to the deep structure before any
transformation. I will call this constraint the “modifiers original sequence” (MOS). MOS requires that AdjP be closer to N than both PPs and CPs and that PPs are closer to N than CPs. If we apply this constraint on the deep structure, it will not matter which of the competing derivations above we take. Eventually, they will lead to the same desired surface structure.

Summary

In this chapter, I provided a general account of the structure of the Arabic DP. I started by arguing that even though the two articles /el-/ and /-n/ end up in different positions in the deep structure, they both start in D. Then by regarding AdjPs as left adjuncts, I argued that N raises to the left of /-n/ and to the right of /el-/

The position of AdjPs won the most attention in this chapter for the complexity that rises from the full agreement between the adjectives and the nouns they modify. To tackle that issue, I incorporated the functional projection AgrP that is specified for the same features found on N. But the features on the head of AgrP are unvalued until N raises to Agr. After that, the adjective would raise to the spec of Agr to check these features under spec-head configuration. I later tweaked this derivation by allowing multiple AgrPs, the number of which is identical to the number of AdjPs inside the NP. This would allow for all the AdjPs to check the features on N without causing the derivation to crash.

In the last section, I discussed the positions of PPs and CPs, and I argued that there is no tangible evidence that modifiers are either on the left of the head noun or on its right, which meant that those two analyses are both acceptable. The problem with those two analyses was their failure to account for the order of modifiers. That is when I proposed the structural constraints that orders modifiers in the deep structure as follows: AdjPs are closer to N than PPs and CPs, and PPs are closer to N than CPs.
Chapter 4: The Modern Standard Arabic Construct State Reanalyzed

In this chapter, I shift my focus to the genitive construction in Arabic traditionally known as the “construct state.” The genitive construction in Arabic, as well as in many other Semitic languages, has received a considerable amount of attention. Many researchers assume that it is a nominal constituent that is determinerless or headed by a null D (see, for example, Benmamoun, 2003; Fehri, 1999; Kremers, 2003; and Shlonsky, 2003). In this chapter, I provide a novel analysis that argues against the standard treatment of the construct state in Arabic. However, before I get to my analysis, it is worth clarifying that I am not in any way attempting to argue against the construct state in general. My argument is going to be limited to Modern Standard Arabic (MSA). I will argue that MSA genitive construction is actually headed by a determiner that is realized phonologically as /-u/.

In Chapter 2, I established with solid evidence that the morpheme /-u/, which is present at the heart of all genitive constructions in MSA, is a possessive determiner, and as I explained in Chapter 2, this determiner fuses with the case marker and is probably the reason it has been “invisible” for linguists.

Overview of the Construct State

The term “construct state” is used to refer to what is believed to be a special syntactic structure that expresses a possessor-possessee relationship between two nouns. See 1 and 2.

1) dˁifet-u en-nehr-i
   bank-Poss. the-river-Genitive
   “the river’s bank”

2) rəʕs-u es-senet-i l-jadidat-i
   beginning-Poss. the-year-Genitive the-new-Genitive
“New Year’s Eve”

What makes this structure stand out is the intolerance of the head noun to any determiners, even though this noun is interpreted as being definite (Shlonsky, 2003). Shlonsky attributes this definiteness to the assumption that the determiner on the possessor is scoping over the whole phrase. Another landmark of the construct state is the obligatory adjacency of the head noun and its complement. In other words, modifiers of the head noun are not allowed to appear immediately after it. They appear after the entire possessor NP, as in 3.

3) kitab-u ahmed ðu l-ɣilaf-i l-ʕahmar-i
   book-Poss./Nom Ahmed with the-cover-Gen the-red-Gen
   “Ahmed’s book with the red cover”

   The prepositional phrase “with the red cover” at the end of the phrase is modifying the noun “book,” which comes at the onset of the phrase. It is ungrammatical for the PP to follow the head it modifies, as the example in 4 illustrates.

4) *kitab-u ðu l-ɣilaf-i l-ʕahmar-i ahmed
   book-Poss./Nom with the-cover-Gen the-red-Gen Ahmed
   “Ahmed’s book with the red cover”

   Explaining this strict adjacency has been problematic to the advocates of the construct state analysis. On one hand, Shlonsky (2003) regards this issue as a “phonological manifestation of the assignment of genitive case.” In the analysis I provide in the next section, I argue that this strict adjacency is the result of a syntactic operation. On the other hand, Fehri (1999) provides an analysis that accounts for this strict adjacency issue in the following way. See the illustration in 6 adopted from Fehri (1999) for the phrase in 5.
5) daar-u      r-rajul-i      l-waasi’a
   house-Nom   the-man-Gen    the-big

   “the man’s big house”

6)

In this underlying representation of the phrase, Fehri places the possessor phrase in a position higher than the modifiers of the head noun. Then after the head noun raises to D, the correct surface order is achieved, but Fehri does not stop there. He raises a number of legitimate questions, such as “what is the motivation for N raising?” “How is Def inheritance…derived?” and so on. To answer all those questions, he develops the derivation in a more complex way. I will argue that such further complexities are not needed under the assumption that the possessive determiner is at the heart of each genitive construction.

Shlonsky (2003), on the other hand, presents a completely different analysis. In this analysis, he argues that there is no N to D raising. He regards the possessor DP is the complement of the head noun of the genitive construction. He also argues that this complement is frozen next to its head, forming an NP that is lower than the AdjP that
modifies the head noun. In other words, neither the head nor the complement raises independently of the other. Alternatively, the whole NP raises to the spec of D in order for the categorical features of the head noun to become available for D and as a result achieve agreement inside the whole DP. Based on Shlonsky’s discussion, the derivation of the genitive phrase is as follows:

7)

As for the assignment of genitive case to the possessor DP, he argues that the head noun is the genitive case assigner. More precisely, he claims that the head noun has the feature [+N], and that this feature is what actually assigns the genitive case to the complement.

One problem with Shlonsky’s analysis is that it assumes that D is empty, but he does not explain what prohibits filling it with an overt determiner. Based on this analysis, a phrase like the one in 8 would be syntactically well-formed even though it is ungrammatical.
8) *sejarat-u er-rajul-i-n el-ʔajuːz-u

car-Nom the-man-Gen-Indef. the-old-Nom

“the old man’s car”

In this phrase, we have the indefinite article, which makes the phrase ungrammatical, exactly where it should be given Shlonsky’s analysis. It is in D, the head of the whole DP, and the movement of the whole NP to the spec of DP does not restrict having D realized phonologically as an article or another determiner. Thus, it is unclear what would rule 8 out for Shlonsky.

There are many other approaches to analyzing the Arabic genitive construction. The main problem with these analyses, as I will argue, is that none of them recognizes the possessive determiner at the heart of this construction. In the following section, I present a new analysis that is based on the presence of a possessive determiner that functions as the head of this construction.

**Arabic Genitive Phrase**

As I argued extensively in the second part of Chapter 2, the morpheme /-u/ that comes attached to the head noun of the genitive construction in MSA is a possessive determiner that I regard as the head of the genitive phrase. Before I go into detail, here is a number of characteristics that set the genitive construction apart from other DPs, as many linguists, such as Fehri (1999) and Shlonsky (2003), agree on. These characteristics are:

a. The head noun (possessee) comes linearly before the possessor DP

b. The head noun does not take any determiners according to previous analysis; however,

   I argue that it takes /-u/ (the possessive determiner) that comes as a suffix.

   c. The case of the whole DP appears on the head noun
d. The possessor DP is assigned genitive case

e. The value of the Def feature on the head noun corresponds to that on the possessor DP.
   Adjectives modifying the head noun illustrate that.

f. All phrases modifying the head noun appear after the whole possessor DP

g. Ambiguity arises when the head noun agrees with NP inside the possessor DP in case
   and phi features. In this case, the adjective phrases can be modifying either the
   possessee or the possessor.

   These are characteristics that I will take into consideration since any acceptable
   analysis of the genitive construction has to account for them, as Fehri (1999) points out. In
   my analysis, I start the derivation with an underlying representation of the phrase that is
   similar to that of English, as Carnie (2013) argues for. See 9.

9)
This derivation works perfectly for English without the need for any transformations to get to the surface structure. But for Arabic this does not conform to the point raised in a, which states that the possessee precedes the possessor. However, there is evidence that 9 is the right underlying structure, as I will explain in this section. I will use the phrase in 10 to illustrate the transformations required to reach the surface structure.

10) ʕ slu:b-u l-ʕustaːð-t-i

   method-Poss./Nom the-professor-Fem.-Gen.

   “the (Feminine)professor’s method”

The underlying representation of this phrase would be as follows, where the possessive determiner /-u/ is the head of the whole phrase, and it takes the head noun as a complement and the possessor DP as a specifier. See 11.

11)
One thing that I argue for is that /-u/ “Poss” has the unspecified feature [-/+Def]. This feature is checked against the Def feature on the head of the possessor DP. The Def feature spreads to the whole possessor DP, which makes it available for D. In other words, if the head of the possessor DP has the feature [+Def], /-u/ would have [+Def] and it would get [-Def] if the D of the possessor DP had [-Def]. This Def feature checking operation is accomplished under spec-head configuration. As we can see, the possessor DP is in the spec of the possessive determiner.

I stated that /-u/ “Poss.” is a suffix that cliticizes to the head noun, but in the structure above, the determiner is to the left of the head noun. This is not an issue because the head of NP raises to D as argued throughout this paper. For that, it should be clear that in this case, the head noun raises to left-adjoin to the possessive determiner. The same transformation occurs inside the possessor DP, where N raises to right-adjoin to the article, as illustrated in 12. As for predicting when it is left vs. right adjunction, syntax does not seem to have an answer for that. It seems that this is the job of the phonological component.

12)
As we can see, I did not include the genitive case on the possessive DP at this level because it has not been assigned yet. The question now is how is this case assigned?

Following Shlonsky (2003), I regard the head noun of the genitive phrase as a genitive case assigner. The problem so far is that in its current position, the head noun cannot assign the genitive case to the possessor DP. Shlonsky adopts the idea that case is assigned in a government configuration, and heads cannot assign case to their specifiers. To tackle this issue, I propose a functional projection that is positioned higher than the whole DP. The introduction of this projection solves two main problems: word order and genitive case assignment. Before I go further into details, here is what government is according to Carnie (2013).

“Node A governs node B if A c-commands B, and there is no node G, such that G is c-commanded by A and G asymmetrically c-commands B” (p.130).
As illustrated in 13, after the head noun merges with the possessive determiner, they become one head, and, therefore, are able to raise to the head of the hypothesized higher functional projection X. Pending further research, I will call this functional projection XP. After the union of N-D raises to the head of XP, it is in a government configuration with the possessor DP, and that allows it to assign genitive case to the possessor DP. See 13 for illustration.

13)

The motivation for the last transformation is the search for a position that governs the possessor DP to enable the genitive case assigning noun to assign this case to the possessor DP. This transformation, in addition to achieving the right surface order, explains the strict adjacency between the head of the possessee NP and the possessor DP. Obviously, any modifiers of the possessee noun would remain in the shell of the possessee NP, which is to
the left of the possessor DP. This explains the fact that regardless of the number of modifiers that modify the possessee, they will always come after the whole possessor DP, as illustrated in 14 and 15 below.

14) ʕsluːb-u l-ʕustaːδ-t-i l-iŋliːzijet-i l-muteqatris-u l-ba qiːd-u

   method-Poss./Nom the-professor-Fem.-Gen. the-English the-arrogant-Nom the-despicable-Nom

   “the English professor’s (Feminine) arrogant and despicable method”
This is a derivation that generates the desired surface structure through transformations that are strongly motivated and without exception.

As for the possessor-possessee order in the deep structure, I said earlier that this is the correct structure. Let us return to the question of why this structure is proposed.

Assume, for example, that the underlying order is the opposite of that of English illustrated in 9, where we have the possessee NP to the right of the possessor DP. The new order would be linearly as follows: Possessee NP → D → Possessor DP. In this case, the surface structure would be unattainable because that would mean one of two things. First, raising the whole possessor DP to a position that is lower than D of the possessor DP and higher than its modifiers. The problem here is that there is no position available for such movement because all the positions are subject to the internal movements of the DP itself, and if we assume that there is functional projection above AgrP to which the possessor DP raises, we will need to provide a motivation for raising the possessor DP to it.

The second option would be to lower all the modifiers of the possessee DP to a position that is lower than the possessor NP, say a right spec, for example. However, that would be impossible structurally because, as I argued earlier following Carnie (2013), a constituent can have only one specifier. This means that if we have more than one phrase modifying the possessee NP, only one of them would be able to lower to the spec of the possessor NP, and the rest of the modifiers will stay stranded. Moreover, there would be no motivation for doing a transformation of this kind. To discard this option, it suffices to consider the fact that “UG prohibits specifiers on the right of heads” (Shlonsky, 2003).

This means that the only available underlying constituent order is to position the possessor DP in the spec of the main DP, and to position the possessee NP as a complement.
of D. This will create a strong derivation that leads to the surface word order with motivated transformations as discussed above.

**Summary**

In brief, the genitive construction in MSA has been regarded as nominal constituent that did not allow determiners as its head. In the discussion above, I challenged this predominant assumption by arguing the morpheme /-u/, which cliticizes to all possessee NP in MSA, is a possessive determiner that functions as the head of genitive construction. I also argued that the deep constituent order is possessor-possessee, and that the surface structure is accomplished after N of the possessee NP merges with D and then raises to the head functional projection higher than the whole DP in search for an appropriate government configuration that allows to assign the genitive case it has to the possessor DP.
Chapter 5: Extended Analysis

The rich morphology of MSA DP makes it difficult to come up with a general theory that covers all the aspect of this constituent. The analyses I presented are relatively general and they overlook some cases that need special attention. In this chapter, I discuss those cases and try to provide explanations for their atypicality.

Pre-nominal Adjectives, Quantifiers, and Numerals in DP

Adjectives with DP complement.

Arabic phrase structure rules allow adjectives to have DPs as complements, but there are a number of constraints. As the data below shows, the adjectives agree in case and definiteness with the head noun of the matrix NP while they agree with their complements in gender and number. One more interesting fact about these constructions is that the case of the NP complement of the adjective is always nominative regardless of the case of the adjective and the head of the matrix NP. Note that agreement with inanimate nouns is exceptional. In this case, adjectives do not agree with the noun in gender and number; they have the fixed features singular and feminine. Consider the set of data below.

1) a. buhajrat-u-n  ?aðb-u-n  maʃ-u-hu
   river-Nom-Indef(SgFem.) fresh-Nom-Indef(SgMasc) water-Nom-its(SgMasc)
   “a lake with fresh water” More literally, “a lake, fresh its water”

b. jitaʃ-u-n  kaθirat-u-n  ?awasifu-hu
   Winter-Nom-Indef(SgMasc) numerous-Nom-Indef(Fem.Pl) storms-Nom-its(Fem.Pl)
   “a winter with numerous storms”

c. ʃaskunu  bi-mediːnet-i-n  ɛʃiddaʃ-i-n  rıʃal-u-ha
   live(1Sg) in-city-Gentive-Indef(SgFem.) tough-Genitive-Indef(PlMasc) men-Nom-its(PlMasc)
“I live in a city with tough men” or more literally “I live in city tough its men”

As we see in this data, agreement features on the adjectives are split between its complement and head noun. To create a derivation that can account for this split agreement phenomenon where the adjective agrees in case and Def with the noun it modifies while it agrees in gender and number with its complement, I assume that the adjective phrase starts, as expected, as a left adjunct of the main NP. Then the head noun raises to D after it has received case externally. Now the adjective can somehow raise to a position lower than D where it can check case and definiteness locally, but that is going to be challenging because the adjective is a head, and the only position local to D is the spec of its complement, and heads do not move into specs. On the other hand, D cannot lower to its spec because that would be head to spec, which is a disallowed transformation. Pending further research, I will move on to discuss how this adjective could agree with its complement in only phi features.

As illustrated below, I assume that there is an Agr projection that takes the adjective phrase as its complement, and this Agr projection is specified for phi features only. What happens is the DP complement of the adjective raises to the spec of Agr transmitting its phi feature values to the head of Agr to which the adjective raises and inherits these features. See illustration in 2.
**Pre-nominal adjectives.**

Attributive Adjectives in MSA are typically post nominal, and they agree with the noun they modify in definiteness, case, and phi features, as in the following examples.

3) a. el-qalam-u  l-ṣahmar-u  
the-pen-Nom (Sg/Masc) the-red-Nom (Sg/Masc)  
“the red pen”

b. el-miṣṭaʔarat-u  l-hamraːʕ-u  
the-ruler-Nom (Sg/Fem) the-red-Nom (Sg/Fem)  
“the red ruler”
A detailed analysis of these adjectives was provided in three. Adjectives in MSA can occur pre-nominally, but when they do, the structure of the DP changes drastically. The following data in 4 illustrates the contrast between adjectives placed post-nominally and the same adjectives placed pre-nominally. Note that adjectives do not agree with inanimate nouns in gender and number. In this case, the adjective is always singular and feminine.

4)  
   a.  i.  l-kutub-u     l-ʒadidiːdat-u
     the-books-Nom(Pl/Fem)  the-new-Nom(Sg/Fem)
   "the new books"
   ii.  jadidd-u        l-kutub-i
     new-Nom(Sg/Masc)       the-books-Gen(Pl/Fem)
   "the new (set) of books"

   b.  i.  el-fakihet-u   el-leðidiːdat-u
     the-fruit-Nom (Sg/Fem)   the-delicious-Nom (Sg/Fem)
   "the delicious fruit"
   ii.  leðidiːð-u    l-fakihet-i
     delicious-Nom(Sg/Masc)   the-fruit-Gen (Sg/Fem)
   "the delicious (part) of the food"

   c.  i.  el-ʃejam-u    l-qaːdimet-u
     the-days-Nom(Pl/Masc)  the-coming-Nom (Sg/Fem)
   "the coming days"
   ii.  qaːdim-u    l-ʃejam-i
     coming-Nom(Sg/Masc)    the-days-Gen(Pl/Masc)
   "the coming days"
This data embodies striking evidence that when adjectives come pre-nominally, they bare no agreement whatsoever with the noun they are modifying. In 2aii, the adjective is masculine while the noun is feminine. In 2cii, the adjective is singular while the noun is plural, and in all the examples, the adjective never takes the definite article even though the noun does. This salient contrast is enough temptation to entertain the idea that these adjectives are generated by a derivation that is different from that which generates post-nominal adjectives. One fact that bolsters this view is that nouns always take the genitive case when the adjective comes pre-nominally. The adjective takes the case of the whole DP. If it is in object position, for example, it takes the accusative case. If it is in subject position, it takes the nominative case, while it takes the genitive case when it is a complement of a preposition.

Looking at the pre-nominal adjectives in 4 above, we can see that they bear strong resemblance to the possessee noun in the genitive phrase. Consider again example 8 from Chapter 4, repeated here as example 5. This is an example of a genitive phrase.

5) ʕsluːb-u  l-ʕustaːð-ə-t-i

method-Poss./Nom the-professor-Fem.-Gen.

“the (Feminine) professor’s method”

Both the pre-nominal adjectives and the possessee nouns in genitive phrases are followed by /-u/ or one of its variant. They both precede a DP. We saw that the possessee NP does not allow any determiners other than /-u/, “the possessive determiner.” The same thing is true for pre-nominal adjectives, hence the ungrammaticality of the following examples.

6)  a. *el-jadiːd-u  l-kutub-i

the-new-Nom(Sg/Masc) the-books-Gen(Pl/Fem)
“the new (set) of the books”

b. *el-leðiːð-u l-fakihet-i

   the-delicious-Nom(Sg/Masc) the-fruit-Gen (Sg/Fem)

   “the delicious (part) of the food”

c. *el-qaːdim-u l-ʕejam-i

   the-coming-Nom(Sg/Masc) the-days-Gen(Pl/Masc)

   “the coming days”

Based on these facts, it is reasonable to argue that when adjectives are positioned pre-nominally, the whole DP is derived as a genitive phrase. The only difference is that the role of the possessee NP is now assumed by the AdjP, and that entails that it becomes a genitive case assigner, as does the possessee NP. As I pointed out in Chapter 4, Shlonsky argues that the possessee noun is a genitive case assigner. Following his footsteps and based on the data above, I argue that pre-nominal adjectives assign genitive case as well. What happens next is that the head adjective raises to the head of XP to assign the genitive case to the DP that contains the noun that the adjective modifies. The movement here is required by the fact that the adjective is probing for a goal to assign the genitive case to under a government configuration, as I discuss in Chapter 4 in regards to possessee raising. See illustration 7.

7)
The same behavior that pinpoints the position of the possessee NP in the deep structure is exhibited by pre-nominal adjectives. Pre-nominal adjectives can be modified by adverbs, and these adverbs appear, as expected, after the whole DP that contains the modified noun, which means that they get stranded after the adjective raises to D and then to X. See examples below for illustration.

8)  tˁawil-u  l-qamat-i  Ḷidden
    tall-Nom  the-height-Gen  very
    “very tall” (with very tall height)

9)
Quantifiers and numerals

Quantifiers and numerals behave like adjectives to some extent. When numerals come post-nominally, they agree with the noun they modify in definiteness and case. Post-nominal quantifiers like /kul/ “all” and /baʔdʔ/ “some” agree with the noun they modify at least in case, and they take an anaphoric pronoun that co-indexes with the noun. The following are examples of post-nominal numerals and quantifiers that, like post-nominal adjectives, start in the deep structure as a left adjunct of N.

10) a. el-kutub-u eθo-θelaʔat-u
    the-books-Nom the-three-Nom
    “the three books”
b. en-naːs-u kull-u-hum

the-people-Nom all-Nom-them

“all people”

Pre-nominal numerals and quantifiers, like pre-nominal adjectives, do not allow a
determiner, nor do they agree in case and phi features with the noun they modify. They also
take the morpheme /-u/ “the possessive determiner,” as I argue. These modifiers also seem to
assign genitive case to the noun. See example 11.

11) a. θelaːθat-u kutub-i-n

three-Nom/Poss. books-Gen-Indef

“three books”

b. kull-u en-naːs-i

all-Nom/Poss. the-people-Gen

“all people”

Obviously, the structure of these phrases is similar to the structure of the genitive
phrase. As the examples above illustrate, the pre-nominal numeral or quantifier does not take
any determiner except the possessive determiner /u/. The same thing is true for the possessee
noun in the genitive phrase, and since the modified DP always takes the genitive case, I will
broaden my theory of genitive case assigners to include pre-nominal numerals and quantifiers.
For that, I suggest that the same derivation that generates the genitive phrase is the same one
that generates DPs with pre-nominal numerals and quantifiers as well as pre-nominal
adjectives. This approach explains elegantly the genitive case on the noun. Another approach
that attempts to explain this type of constructions sees these pre-nominal modifiers as
determiners that govern specific case on the NP complement. This may work for some
languages, but it does not work for Arabic. These pre-nominal modifiers take case markers, which is atypical for determiners.

**Duals and Irregular Masculine Plurals in the Genitive Phrase**

The dual form of nouns and the irregular masculine plural do not exhibit the case markers that show up on other nouns. Other nouns take the suffix /-u/ as the nominative case, /-a/ as the accusative case, and /-i/ as the genitive case. As for duals, they always end with the suffix /-aːni/ when they check the nominative case, but they take the suffix /-ejni/ when they check either the accusative case or the genitive case, as exemplified in 12.

12)

<table>
<thead>
<tr>
<th>Nominative</th>
<th>Accusative/Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a qalam-aːni “two pens”</td>
<td>b qalam-ejni “two pens”</td>
</tr>
<tr>
<td>c kitab-aːni “two books”</td>
<td>d kitab-ejni “two books”</td>
</tr>
<tr>
<td>e raʃul- aːni “two men”</td>
<td>f raʃul-ejni “two men”</td>
</tr>
</tbody>
</table>

Note that in both cases, the syllable /-ni/ is always present regardless of the case type. This can mean that the actual dual marker is only this syllable, and the syllable before it that changes depending on case is an allomorph of the case marker. Thus, we can say that /-aː/ is the nominative case marker for dual, while /-ej/ is the dual case marker for both accusative and genitive case.

Irregular masculine plurals exhibit a similar behavior. Regardless of case, the morpheme /-na/ is always present, which means that it can be regarded as the marker of plural in this case. This means that the morphemes /-u:/ and /-i:/, which precede the morpheme /na/, are the case markers specified for irregular plural masculine. Looking at the
examples in 13, we can see that /-u:/ marks the nominative case, while /-i:/ marks both the accusative and the genitive case.

13)  

<table>
<thead>
<tr>
<th>Nominative</th>
<th>Accusative/Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a  muʔallim-u:-na “teachers”</td>
<td>b  muʔallim-i:-na</td>
</tr>
<tr>
<td>c  qarawij-u:-na “villagers”</td>
<td>d  qarawij-i:-na</td>
</tr>
<tr>
<td>e  Ʒumhuːri--u:-na “republicans”</td>
<td>f  Ʒumhuːri-i:-na</td>
</tr>
</tbody>
</table>

These two groups of nouns, duals and irregular plurals, have more in common than just not taking regular case markers. They also drop the last syllable (number marker) when they are the head of the possessee NP in a genitive phrase. Syntactically, there seems to be no explanation for this, but I believe that the phonology deletes this syllable as a result of the strict adjacency principle I discussed earlier. This remains, however, a mere speculation pending further research. The following examples in 14 show the deletion of this syllable in the genitive construction.

14)  

<table>
<thead>
<tr>
<th>Nominative</th>
<th>Accusative/Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a  qalam-a: l-waladi pen-Dual the-boy “the boy’s two pens”</td>
<td>b  qalam-ej l-waladi pen-Dual the-boy “the boy’s two pens”</td>
</tr>
<tr>
<td>c  muʔallim-u: r-rijadˁijat teacher-Pl the-mathematics “mathematics teachers”</td>
<td>d  muʔallim-i: r-rijadˁijat teacher-Pl the-mathematics “mathematics teachers”</td>
</tr>
</tbody>
</table>
As I suggested in Chapter 2, the possessive determiner that heads the genitive phrase is expressed by the same fusional morpheme that expresses case. In the two groups of nouns above, case, as we know it, is not visible, but I believe that its allomorphs discussed above are part of a fusional morpheme that also expresses the possessive determiner.

**Relative Pronouns Agreement with the Head of the Matrix NP**

Unlike English, relative pronouns in Arabic agree in gender and number with the head noun of the main NP. The following data illustrates this agreement. Note that relative pronouns in Arabic always take the definite article /el-/ For that, I will regard the pronoun with /el-/ as a single unit.

15)  
   a. er-raʒul-u  l-leði(SgMasc) qaːbaltu  
       the-man-Nom(SgMasc) whom(SgMasc) met(1Sg)  
       “the man whom I met”
   b. er-raʒul-aːni  l-leða:ni qaːbaltu  
       the-men-Nom-Dual whom(DualMasc) met(1Sg)  
       “the two men whom I met”
   c. er-riʒaː:l-u  l-leði:na qaːbaltu  
       the-men-Nom(PlMasc) whom(PlMasc) met(1Sg)  
       “the men whom I met”
   d. el-bint-u  l-leti qaːbaltu  
       the-girl-Nom(SgFem) whom(SgFem) met(1Sg)  
       “the girl whom I met”
   e. el-bintaː:-ni  el-taːni qaːbaltu
the-girls-Nom-Dual whom(DulaFem) met(1Sg)

“the two girls whom I met”

f. el-banaː:t-u l-lati qaːbaltu

the-girls-Nom whom(PlFem)

“the girls whom I met”

As we can see in this data, the relative pronoun changes every time a feature of the head noun changes. This indicates a clear agreement between these two heads. The question is how is this agreement derived? Since relative pronouns start as heads of CPs that complement the main NP, it would be challenging to create a derivation that conforms to X-bar rules and at the same time accounts for this agreement. The first problem is that X-bar does not allow head to spec movement. If that was not the case, we can assume that the relative pronoun raises to the spec of CP to check the features of N locally, but since that transformation is not allowed, different solutions need to be considered. One can argue that N lowers to the spec of CP. However, that would be another case of illegal head to spec movement. Empirically, however, N raises to the head of the matrix D, as in 16.

16) er-raƷul-u el-letˁif-u l-leði(SgMAsc) qaːbaltu

the-man-Nom(SgMasc) the-kind-Nom whom(SgMasc) met(1Sg)

“the kind man whom I met”

In this example, the adjective phrase intervenes between the relative pronoun and the noun, and this can only mean that N raises from its deep structure position to join D, which is higher than the adjective phrase. This leaves agreement between these two heads begging for explanation. One tempting explanation is that the complementizer raises to right adjoin to N,
forming a head to head configuration that permits agreement (Carstens, 2000). Then N raises to D, as illustrated in 17).

17)

This derivation seems to account for this issue of agreement, but the following piece of information raises a number of questions. In Arabic, when a relative pronoun is used in a DP, the head of this DP has to be [+Def], hence the ungrammaticality of the following examples.

18) a.*bint-u-n l-leti qa:balru

girl-Nom-Indef (SgFem) who(SgFem) met(1Sg)

“a girl whom I met”
b. * raʒul-u-n let'i-f-u-n l-leði(SgMAsc) qaː-bal-tu
   man-Nom-Indef (SgMasc) kind-Nom-Indef who(SgMasc) met(1Sg)
   “a kind man whom I met”

It seems that the ever-present /el-/ on the relative pronoun has the ability to activate
the [+Def] for the head of the main DP, which is way high in the structure. If that is the case,
how does it do that? If not, what prevents the activation of [-Def] on D? These questions and
others remain unanswered pending further research, but for now, I will assume that when the
relative pronoun raises to N, it transmits its Def feature to the noun, and this feature gets
realized as the definite pronoun when N raises to D.
Chapter 6: Conclusion

The content of this thesis is a reanalysis of the Modern Standard Arabic (MSA) determiner phrase. Many of the novel analyses that I presented contend some of the pre-existing analyses that attempted to elucidate the morphosyntactic operations involved in generating the different aspects of the MSA determiner phrase. Other analyses that I put forth shed light on aspects of that MSA DP that received little, if any, attention from linguists.

In Chapter 1, following prominent linguists like Abney (1987) and Carnie (2013), I provided a literature review of the nominal constituent in general and its graduation from being regarded as noun phrase headed by a noun to the currently established argument that it is headed by a determiner, which earns it the name “determiner phrase.”

In Chapter 2, I present two analyses that argue for the existence of two MSA determiners that have been invisible to many if not all linguists. These two determiners are the indefinite article and a possessive determiner that heads the genitive phrase in MSA.

On one hand, the indefinite article has been camouflaged by the multi-purpose nunation phenomenon. Nunation in MSA is the suffixation of /n/ to nouns, adjectives, and some adverbs to express a number of semantic and syntactic clues that include but are not limited to indefiniteness, agreement, and ellipsis, as exemplified in 1–3, respectively.

1) kitab-u-n

book-Nom-Nunation

“a book”

2) kitab-u-n mufid-u-n

book-Nom-Nunation useful-Nom-Nunation

“a useful book”
Apart from the versatility of nunation, one thing that I came to establish is that it is used productively as an indefinite article. Coming to this conclusion was the result of a comprehensive analysis of a big body of data. In this analysis, I came to realize that nunation is in complementary distribution with the definite article /el-/ and with possessive determiners. Following Carnie (2013), I concluded that this complementary distribution means that nunation has something in common with determiners, and that would be being a determiner, and since it is always associated with indefiniteness, it was borne out that it is an indefinite determiner. More evidence that support this comes from presentitive constructions in which the referent that is regarded as new information always carries the indefinite article, and as it turns out, the referent in MSA presentative construction always carries nunation but not the definite article.

On the other hand, the possessive determiner that heads the genitive phrase in MSA has been elusive because it is represented by a fusional morpheme that at the same time represents case. However, I was able to accentuate it after employing the complementary distribution technique. This proved that the morpheme /-u/ that always attaches to the possessee noun in a genitive phrase is in complementary distribution with /el-/, /-n/, and other possessive determiners, as is illustrated respectively in examples (4–6) below.

4) *el-kitab-u
   el-bint-i
   the-book-Nom/Poss.   the-girl-Gen
   “the girl’s book”
This complementary distribution coupled with the fact that /-u/ is always attached to the possessee noun in MSA genitive phrases leads to the conclusion that this morpheme is a possessive determiner that functions as the head of the genitive phrase.

In Chapter 3, the syntactic structure of the determiner phrase in Arabic is discussed from different angles. I start with a proposition that accounts for the positioning of the definite article which attaches as a prefix and the indefinite article which attaches as a suffix. However, I argue that both start in the same position as heads of DP. What happens then is that N raises from its position in the deep structure to the left of the indefinite article, and raises to the right of the definite article. I use the universal position of adjectives as left adjuncts of N to determine that N raises to D, and not the other way around because if D was the one that lowers to N, the surface structure would produce an adjective-phrase sequence that is not the appropriate surface word order.

I also bring under focus the phenomenon of agreement between post-nominal adjectives and the nouns they modify. This agreement that targets phi features, case and Def. has lead Fehri (1999) to consider the adjective phrase as a DP on its own. That cannot be the case, however, because of semantic and syntactic considerations that are discussed in the chapter. The alternative analysis that presented involved introducing the Agr projection that
resides between D and NP. This projection carries phi features that remain unspecified until N raises to Agr. Assuming that case is checked externally, it becomes available for the adjective phrase along with phi features after the adjective phrase raises to the spec of Agr. In this position, the AdjP is able to check Def. feature on D.

My second favorite derivation replaces Agr with GenP (gender phrase) and NumP (number phrase) as functional projections. GenP has the unspecified feature Gen, while NumP has the unspecified feature Num. These features are valued when N raises to the heads that carry them. Then the AdjP raises to the specs of these functional projections to check relevant feature in each projection. The reason this derivation is my second favorite is that it is not the optimal candidate when there is more than one adjective phrase modifying N. In this case, the Agr-based derivation stands out in tackling all the adjective phrases. In this derivation, there are as many AgrPs as there are adjective phrases, and agreement features are checked, as discussed above.

Moreover, I address other nominal modifiers like prepositional phrases and complementizer phrases. The positioning of these modifiers is rather straightforward. They can be regarded as either right-adjunct modifiers of N or left-adjunct modifiers. Their positioning to the left or right of N does not compromise word order since N is always going to raise to a higher position (D). What is more interesting is that the types of nominal modifiers inside DP have a strict order that cannot be accounted for using only X-bar rules. The order of these modifiers is as follows:

Adjective phrases > prepositional phrase > complementizer phrase
Since X-bar rules cannot generate such strict word order, I proposed the constraint “modifier original sequence” (MOS), which applies on the deep structure before any transformation. This constraint organizes the modifiers as illustrated above.

In Chapter 4, I present a detailed analysis of the genitive phrase in MSA starting with an overview of the standard analyses of this constituent. What all these analyses have in common is that this constituent is determinerless, as many linguists like Benmamoun (2003), Fehri (1999), Kremers (2003), and Shlonsky (2003) claim. This is one of the reasons it is referred to as the “construct state.”

In the alternative analysis I presented, I argue that the possessive determiner /-u/, which I discussed in detail in Chapter 2, is the head of this constituent, and that meant a drastic change in the way the structure of this phrase was viewed. In the derivation I propose, I consider the possessive determiner /-u/ the head of the genitive phase with the possessee NP as its complement and the possessor DP in its specifier position. This constituent order is different from that of the surface structure. But the fact that all modifiers of the possessee NP has to come linearly after the whole possessor DP is a strong indication that this is the underlying word order. To get to the surface structure, other factors come into play. One thing I proposed following Shlonsky (2003) is that the possessee noun is a genitive case assigner. However, for this noun to assign the genitive case to the possessor DP, it has to raise to a position that governs this phrase. That is why I proposed the functional projection XP, which takes the whole genitive phrase as a complement. The possessee then raises to the head of this projection after it merges with the possessive determiner. In this position, the possessee can assign the genitive case to the possessor NP. This transformation explains a number of things that characterize the MSA genitive phrase. These characteristics are:
a. The possessee comes before the possessor.

b. The possessee receives an external case.

c. The possessor receives a genitive case.

d. Modifiers of the possessee appear of the possessor DP.

In Chapter 5, I expanded my analysis to include cases that were excluded in the previous chapters or discussed briefly. These cases include adjectives with DP complements. Unlike simple adjective phrases, these adjectives agree in part with the noun they modify and agree in part with their DP complement. They agree with the noun they modify in case and definiteness, but they agree with their complement in person, gender, and number. Another aspect that would make this kind of adjectives a good research topic is that the complement DP always selects for the nominative case regardless of the case of the adjective and the matrix noun. My proposition for accounting for this peculiarity is as follows. The whole AdjP starts as a complement of an AgrP, which is left-adjunct to the head noun. The head of AgrP carries unspecified phi features, but after the complement DP raises to the spec of AgrP, it transmits its phi features to the head of Agr, where the adjective raises and inherits these features. The adjective then raises to a position lower than D to check case and Def. against the head noun, but since any position that can be local to D has to be in a specifier position, it becomes a challenge to raise the adjective which is a head that cannot raise to a specifier position, considering X-bar rules.

Apart from the type of adjectives above, pre-nominal quantifier, numeral, and adjective exhibit a behavior that resembles that of the genitive phrase. When these modifiers occur pre-nominally they have to be strictly adjacent to the noun they modify. They also host the possessive determiner /-u/ and do not allow any other determiners. They also assign
genitive case to the noun they modify. Moreover, when these modifiers have modifiers of their own, the modifiers of pre-nominal modifiers have to come after the whole DP being modified. All these characteristics are typical to the genitive phrase, and that is what led me to conclude that DPs with pre-nominal adjectives, quantifier, or numerals are derived the same way the genitive phrase is.

Nouns in the dual form and in the irregular masculine plural exhibit an atypical behavior. The interaction between case and these nouns produces case markers that are different from case markers of other nouns. When nouns are in the dual form, their nominative case marker, as I argued, is /aː/, while their genitive and accusative cases are both expressed with the morpheme /ej/. Irregular masculine plural, on the other hand, takes the morpheme /uː/ as nominative case marker while they take /iː/ as marker for both accusative case and genitive case. As for the marker of number, dual is marked with /ni/ while irregular masculine plural is marked with /na/. One major aspect that these two types of nouns have in common is that when they are the possessee in a genitive phrase, they lose the number marker, but since they have unique case markers, the number feature remains deducible even after deleting the number marker.

In the last section, I shed light on agreement in gender and number between relative pronouns and head noun of the matrix NP. I propose a number of analyses to explain this phenomenon, but these analyses are no more than pavement for future research.
References


