Functional Categories in the Arabic DP

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Abstract: In this paper, I discuss the basic structure of the determiner phrase in Standard Arabic. I show that this phrase houses three different categories that can project distinct functional heads beside the noun. These categories include: DP, GenP, and NumP. I argue that the noun undergoes cyclic movement to the left of GenP and NumP in order to check its unvalued features. The long-distance probe-goal relation cannot be established in this context due to intervention effects raised by the functional heads. However, the definiteness feature on the DP is valued in-situ, without resorting to movement, hence the appearance of this marker is a prefix on the noun. Thus, a new analysis of the determiner phrase in SA is proposed in terms of cyclic movement and probe-goal relation, where both operations are triggered by unvalued features on the noun. The new analysis can successfully account for the different features on the noun as well as the split of morphological markers on the noun as prefixes and suffixes.

I claim that structural nominative/accusative Case on the head noun in the Arabic DP is licensed by higher functional heads, i.e. v and T. However, I argue that the genitive construction in Standard Arabic is mediated by a Poss head that has unvalued features and can license Case. The genitive Case on the complement noun is assigned by the Poss head as a reflex of establishing a probe-goal relation. The proposed position for the Poss head accounts for the inexplicable absence of the definiteness marker on the head noun, as well as the Case morphology mismatch between the head noun and the genitive complement.

Keywords: definiteness, genitive Case, determiner phrase, number features, gender features

1. Introduction

In Standard Arabic (henceforth, SA), nouns are generally divided into three main categories: eventive, deverbal, and non-eventive. Eventive nouns are derived nouns which refer to an event and can have argument/event structure (Grimshaw, 1990). Deverbal nouns are argued to start out as a verbal projection and get transformed into a noun (Abney, 1987).
Non-eventive nouns refer to the basic nouns that do not have argument/eventive structure (Grimshaw, 1990). This paper examines the structure and functional projections in non-eventive determiner phrases.

This paper is divided into six sections. In the second section, I discuss the different morpho-syntactic markers that can appear on the noun in SA. These markers include the number features, the gender features, the definiteness features, the possessiveness feature, and Case markers. In the third section, I examine Case morphology in SA and discuss the different markers for each of its three values: the nominative, the accusative, and the genitive. I end this section with the assumption that Case cannot project a functional head in this language and has to be uniformly assigned by the Probe-Goal mechanism. In the fourth section, I discuss the structure of the genitive construction in SA and propose a new analysis that can account for the empirical facts in this construction, by means of proposing a new position for the possessive head that mediates between the head noun and the genitive complement. The analysis also accounts for the assignment of the genitive Case on the possessor noun in terms of establishing agreement with the Poss head. In the fifth section, I provide a new analysis of the determiner phrase in SA that can account for the different features on the noun in terms of cyclic movement and probe-goal relation. Both operations are triggered by unvalued features on the noun. The cyclic movement is instantiated in order to avoid intervention effects by the functional categories. In the last section, I summarize the main findings and conclusions.

2. The morpho-syntactic markers on nouns in SA

In this section, I examine the different morpho-syntactic features that can be marked on the noun in SA. These features include: number, gender, definiteness, possessiveness, and Case. The aim of this discussion is to find out which feature can actually project a functional head in the structure of determiner phrases in SA and the hierarchy of these functional heads.

2.1 Number

The number feature on nouns in SA have three values: singular, dual, and plural. While the singular is generally unmarked, the dual is marked by a specific suffix (-ni) that is attached to the end of the noun:\footnote{The following abbreviations and symbols are used in the gloss throughout the paper: nom= nominative Case, acc= accusative Case, gen= genitive Case, sg= singular number, pl= plural number, fem= feminine marker, mas= masculine marker, def= definiteness marker, indef= indefiniteness marker, aa= vowel /æ/, ii = vowel /i:/, uu= vowel /u:/, a'= pharyngeal consonant /ʕ/, ?= the glottal stop, double consonants= gemination.}

(1) a. al-mua’allema-u    b. al-mua’allema-aa-ni
The plural in SA has two main types: regular and irregular. The regular plural has two markers, the masculine plural and the feminine plural.

The irregular type of plurals in SA is known as the broken plural. It literally means that the three/four consonants in the root are split apart by means of changing the in-between vowels. The broken plural has no specific number marker; and instead, the language changes the vowel pattern of the singular to generate the plural:
In (9), the vowel pattern (-i-aa-) indicates singular, whereas the pattern (-u-u) indicates plural. The patterns are different in (11-14), but the principle is the same.

On the basis of the data above, one can assume that number features in SA reside in a functional head which projects above the head noun; consequently, it can be assumed that for the noun to surface with a number feature, it needs to move to the left of the number head.

2.2 Gender

It has been argued that gender in SA is grammatical (Kremers, 2003), and that’s why all nouns in this language must be either feminine or masculine.

While most nouns in SA appear with a gender marker, masculine singular nouns, i.e. nouns that refer to a male person/animal or a supposedly masculine object, always surface without gender inflection:

(15) a. al-walad  b. al-kitaab  
def-boy(mas)  def-book(mas)  
‘the boy’  ‘the book’

The nouns in (15) are both masculine since there is no feminine marker on them. This can be clear when these masculine nouns appear with other categories like adjectives or determiners. In this case, the modifying category must agree with the noun in gender:

(16) a. al-walad  ①  at-taweel  
def-boy(mas)  def-tall(mas)  
‘the tall boy’

b. * al-walad  at-taweel-ah  
def-boy(mas)  def-tall-fem  
‘the tall boy’

① The sound /l/ in the definiteness marker (al-) gets assimilated to the following sound when followed by alveolar consonants.
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(17) a. al-kitaab  al-qadeem
    def-book(mas)  def-old(mas)
    ‘the old book’
b. * al-kitaab  al-qadeem-ah
    def-book(mas)  def-old-fem
    ‘the old book’

(18) a. haath-a  al-walad
    this-mas  def-boy(mas)
    ‘this boy’
b. * haath-ih  al-walad
    this-fem  def-boy(mas)
    ‘this boy’

(19) a. haath-a  al-kitaab
    this-mas  def-book(mas)
    ‘this book’
b. * haath-ih  al-kitaab
    this-fem  the-book(mas)
    ‘this book’

The (b) sentences above are ungrammatical because the adjective/determiner surfaces with a feminine marker that does not agree with the masculine noun.

Feminine singular nouns surface with the suffixal marker (-at)\(^1\):

(20) a. al-fata-ah  b. ash-shajar-ah
    def-girl-fem  def-tree-fem
    ‘the girl’  ‘the tree’

When the feminine noun appears with other categories, it agrees in gender with these words:

(21) a. al-fata-at  al-jameel-ah
    def-girl-fem  def-beautiful-fem
    ‘the beautiful girl’
b. ash-shajar-at  at-taweel-ah
    def-tree-fem  def-tall-fem
    ‘the tall tree’

However, there are feminine singular nouns that do not show any gender inflection:

(22) a. as-samaa  b. ar-reeh

\(^1\) The /t/ sound in the feminine marker (-at) is expressed morphologically only if it is followed by another sound/word, otherwise it surfaces as a /h/ sound.
But when other categories are present with these nouns, feminine agreement must be established between the noun and the modifying word:

(23) a. as-samaa as-saafi-ah
def-sky(fem) def-clear-fem
‘the clear sky’
b. * as-samaa as-saafi
def-sky(fem) def-clear(mas)
‘the clear sky’

(24) a. ar-reeh al-a’ati-ah
def-wind(fem) def-strong-fem
‘the strong wind’
b. * ar-reeh al-a’ati
def-wind(fem) def-strong(mas)
‘the strong wind’

While the dual noun, just like the singular, is marked for feminine gender by the suffixal marker (-at), the plural noun is marked by the slightly different suffix (-aat), i.e. the vowel in the suffix here is longer than the vowel with singular nouns. In addition, this suffix shows an instance of syncretism in SA since the same marker stands for feminine gender and plural number:

(25) a. al-kaatib-aat b. as-sayyar-aat
def-writer-fem/pl def-car-fem/pl
‘the (female) writers’ ‘the cars’

The last type of nouns that needs to be addressed is the noun that refers to non-human objects/creatures. While the non-human singular noun can be masculine or feminine, the plural always triggers feminine singular agreement when it appears with other categories, despite that fact that it carries a plural marker:

(26) a1. al-walad a2. al-qalam
def-boy def-pen
‘the boy’ ‘the pen’
b1. al-awlaad b2. al-aqlaam
def-boys def-pens
‘the boys’ ‘the pens’

(27) a. * hath-a al-awlaad
this-mas.sg def-boys
‘these boys’
It can be seen in the examples above that the non-human plural noun is treated in SA as a feminine singular; hence the agreement patterns with the determiners. The data on non-human nouns clearly show that gender in this language is grammatical and the non-human plural nouns could be argued to carry a syntactic feminine gender feature.

The discussion in this sub-section on gender features lead us to assume that these features need to reside on some functional head inside the determiner phrase in SA and the head noun will need to move past that functional head in order to value its gender feature.

### 2.3 Definiteness

In SA, definiteness is expressed on a noun by means of attaching the morpheme (al-) to the beginning of the noun:

(30) a. kitaab          b. al-kitaab
    book             def-book
    ‘a book’        ‘the book’

(31) a. rajul          b. al-rajul
    man             def-man
    ‘a man’         ‘the man’
It is to be noted that the definiteness marker (al-) is the only morpho-syntactic marker that appears as a prefix on the noun in SA. Other markers usually surface as suffixes that are attached to the end of the noun.

I have been tacitly assuming that similar features can be housed on a functional head above the head noun; and in order for the head noun to value its features; it needs to move up the tree past these functional categories.

However, the definiteness feature poses a problem for this assumption since it surfaces on the noun as a prefix, suggesting that the noun can get its definiteness feature checked/valued in-situ. To complicate this further, it is to be noted that SA has another morpheme to mark indefiniteness. When the noun in this language is indefinite, this is indicated by adding the suffix (-n) to the noun:

(32) a. kitaab-u-n  b. rajul-u-n
    book-nom-indef  man-nom-indef
    ‘a book’       ‘a man’

The indefiniteness marker (-n) is usually unexpressed morphologically on the noun unless it is followed by another word, that’s why it is not glossed in previous examples. However, as a general rule in the grammar of SA, most indefinite singular nouns take the suffix (-n) to mark indefiniteness and this suffix is always in complementary distribution with the definiteness marker (al-):

(33) a1. kitaab-u-n  a2. rajul-u-n
    book-nom-indef  man-nom-indef
    ‘a book’       ‘a man’

b1. al-kitaab-u  b1. al-rajul-u
    def-book-nom   def-man-nom
    ‘the book’    ‘the man’

c1. * al-kitaab-u-n  c2. al-rajul-u-n
    def-book-nom-indef  def-man-nom-indef
    ‘the book’    ‘the man’

It has been argued that the marker (-n) may stand for the singular number ‘one’ (Fassi Fehri, 1999). However, this claim fails to explain the appearance of the marker (-n) on some plural nouns (Kremers, 2003):

(34) a. kutub-u-n  b. rijaal-u-n
    books-nom-indef  man-nom-indef
    ‘books’    ‘men’

An interesting assumption has been put forth by Kremers (2003) to account for checking the definiteness/indefiniteness features on the head noun. He claims that while both markers can be argued to reside in the D(efiniteness) head, the noun moves to the left of the D head.
only when the latter carries a [-def] feature, and that is why indefinite nouns show up with the marker (-n) as a suffix. On the other hand, when the head D carries a [+def] feature, the noun checks its definiteness feature in-situ, hence the prefixing of the definiteness marker (al-) to the noun.

2.4 Possessiveness

The possessive marker in SA appears on a noun when that noun is a complement of another noun. In this position, the complement noun is Case-marked genitive by adding the marker (-i) to the noun as a suffix:

(35) kitaab-u   al-walad-i
   book-nom   def-boy-gen
   ‘the boy’s book’

(36) qalam-u   al-fata-at-i
   pen-nom    def-girl-fem-gen
   ‘the girl’s pen’

The possessive construction in SA is commonly referred to as the ‘Construct State’, which denotes a specific construction where a noun takes another noun as its complement, with certain conditions imposed on definiteness, and Case. As a rule, the complement noun, i.e. the noun with the genitive Case must follow the head noun. However, unlike other categories that might occur with the head noun and agree with it in all features like adjectives or demonstratives, the complement noun shows up with a definiteness marker while the head noun is not marked for definiteness. The other property is that while the Case on the head noun is licensed by a higher probe, T or v, and accordingly can be nominative or accusative, the Case of the complement noun is always genitive. I will briefly discuss each of these properties below.

The first interesting property of the possessive construction is the fact that the head noun cannot be marked for definiteness or indefiniteness (Kremers, 2003:38):

(37) sayyar-at-u   al-rajul-i
    car-fem-nom   def-man-gen
    ‘the man’s car’

(38) * sayyar-at-u-n   al-rajul-i
    car-fem-nom-indef   def-man-gen
    ‘the man’s car’

(39) * al-sayyar-at-u   al-rajul-i
    car-fem-nom-nom   def-man-gen
    ‘the man’s car’

It can be seen in the examples above that the head noun in the possessive construction must remain unmarked for definiteness/indefiniteness. This obligatory condition doesn’t
The definiteness of the head noun can be seen when other categories occur with the head noun such as adjectives or quantifiers. In this context, the adjective appears with the definiteness marker (al-) in agreement with the head noun (Kremers, 2003:39):

(40) bayt-u   al-rajul-i  al-hajari-u
    house-nom def-man-gen def-stone-nom
    'the man’s stone house’

(41) bayt-u   rajul-i-n  hajari-u-n
    house-nom man-gen-indef stone-nom-indef
    ‘a man’s stone house’

It is to be noted that even though the adjective in the sentences above modifies the head noun ِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِِィ
fixed if the other feature has a specific value. Therefore, when Poss has the value [+Poss], [+Def] is forced to remain unvalued. Kremers proposes the following structure for the possessive construction in SA (2003:41):

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D/Poss
D/Poss
[+Def]  N1
[+Poss]  sayyarat
        car
D2
D2  N2
   al-
   the
   rajul-i
   man-gen
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To explain the definiteness inheritance assumption, i.e. to understand how the genitive noun appears with a definiteness marker while the head noun is not marked for the same feature, Kremers argues that when Poss has the value [+Poss], it forces [+Def] to remain unvalued. Thus, definiteness inheritance is linked to genitive Case assignment. In other words, Kremers argues that “the process that assigns genitive Case has a side effect that the head noun inherits the definiteness of its complement” (2003:41).

Kremers’ account seems to be neat, but it does not answer some basic questions. First, if his assumption that Poss assigns genitive Case to the complement noun is on the right track, it is not clear what blocks the assignment of this Case on the head noun in the first place, given the proximity of the head noun to the Poss head? Second, would not be there problems of intervention effects for the Poss probe while targeting the complement noun down the tree, since the head noun has an active unchecked Case feature? Third, Kremers has not mentioned the source of the nominative Case on the head noun. If he assumes it be assigned by a higher probe from outside the determiner phrase, would not the head Poss block that probe from targeting the head noun?

3. Case

It has been argued in the literature, notably by Abney (1987), that Case projects an independent functional category KP. This claim is supported by some empirical evidence that shows Case markers in some languages to appear as independent morphemes. For example, Bittner & Hale (1996) cites examples from Khasi to this effect:

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(42) ka la yo’i ya ‘uu khaa
she past see acc the tiger
‘She saw the tiger.’
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Bittner & Hale claim that the morpheme ya in the example above is a Case marker.
heading a Case projection. Abney reiterates the same idea and argues that the Case projection KP does exist right above DP.

In the following subsections, I review the different markers for the three main values of Case in SA: nominative, accusative, and genitive. The aim of this discussion is to find out if Case in this language can actually project a separate functional head in the determiner phrase.

3.1 Nominative

It has been argued in the literature that nominative is the default Case in SA (Fassi Fehri, 1993). Nominative Case in this language is assigned to subjects, topics, and predicates in copular/verbless constructions. Generally, the nominative Case in SA is expressed morphologically on the noun by three different markers, depending on the number and gender of the noun.

When the noun is singular, regardless of its gender feature, nominative Case on that noun is marked by the suffix (-u):

(43) a. al-mua’alle-u  b. al-mua’alle-at-u  
def-teacher-nom         def-teacher-fem-nom
’the (male) teacher’     ‘the (female) teacher’

Also, when the noun carries an irregular broken plural marker, nominative Case is indicated by the suffix (-u):

(44) a. al-kutub-u  b. al-awlaad-u
  def-books-nom         def-boys-nom
‘the books’             ‘the boys’

Similarly, when the noun has a regular plural feminine marker, nominative Case is indicated by the morpheme (-u):

(45) a. al-mua’alle-aat-u  b. al-kaatib-aat-u
  def-teacher-(fem/pl)-nom         def-writer-(fem/pl)-nom
‘the (female) teachers’     ‘the (female) writers’

However, when the noun has a dual number, whether it has a masculine or feminine feature, nominative Case is expressed by the morpheme (-aa):

(46) a. al-mua’alle-aal-ni  b. al-mua’alle-at-aa-ni
  def-teacher-nom-dual         def-teacher-fem-nom-dual
‘the two (male) teachers’     ‘the two (female) teachers’

In addition, when the noun has a regular plural masculine marker, it is Case-marked nominative by means of attaching the suffix (-uu):

(47) a. al-mua’alle-uu-na  b. al-kaatib-uu-na
  def-teacher-nom-pl         def-writer-nom-pl
‘the (male) teachers’     ‘the (male) writers’
3.2 Accusative

The accusative Case in SA can be expressed morphologically on the noun by three different markers. When the noun is singular, regardless of its gender feature, accusative Case is indicated by the suffix (-a):

(48) a. al-kaatib-a b. al-kaatib-at-a  
def-writer-acc def-writer-fem-acc  
‘the (male) writer’ ‘the (female) writer’

Also, when the noun has an irregular broken plural feature, it is Case-marked accusative by the suffix (-a):

(49) a. al-kutub-a b. al-awlaad-a  
def-books-acc def-boys-acc  
‘the books’ ‘the boys’

Likewise, when the noun carries a regular feminine plural marker, accusative Case is expressed by the suffix (-a):

(50) a. al-kaatiib-aat-a, b. al-mu‘a’allem-aat-a  
def-writer-(fem/pl)-acc def-teacher-(fem/pl)-acc  
‘the (female) writers’ ‘the (female) teachers’

However, when the noun has a dual number, irrespective of its gender feature, it is Case-marked accusative by the morpheme (-ai):

(51) a. al-kaatib-ai-ni b. al-kaatib-at-ai-ni  
def-writer-acc-dual def-writer-fem-acc-dual  
‘the two (male) writers’ ‘the two (female) writers’

When the noun carries the masculine plural marker, accusative Case surfaces as the suffix (-ii):

(52) a. al-kaatib-ii-na b. al-mu‘a’allem-ii-na  
def-writer-acc-pl def-teacher-acc-pl  
‘the (male) writers’ ‘the (male) teachers’

3.3 Genitive

Genitive Case in SA is expressed morphologically on the noun by three different suffixes. When the singular noun, irrespective of its gender feature, surfaces as the complement of another noun, i.e. in a possessive/construct state construction, it is Case-marked genitive by the suffix (-i):

(53) sayyar-at-u al-rajul-i  
car-fem-nom def-man-gen  
‘the man’s car’

(54) manzil-u al-fata-at-i  
house-nom def-girl-fem-gen
‘the girl’s house’

In the same way, when the singular noun, irrespective of its gender feature, surfaces after a preposition, it is Case-marked genitive by the morpheme (-i):

(55) min as-sooq-i
     from def-market-gen
     ‘from the market’
(56) ila al-madras-at-i
     to def-school-fem-gen
     ‘to the school’

However, when the possessor in a construct state carries a dual number, irrespective of its gender feature, the genitive Case is expressed morphologically by the suffix (-ai):

(57) manzil-u  al-kaatib-ai-ni
     house-nom  def-writer-gen-dual
     ‘the house of the two (male) writers’
(58) manzil-u  al-kaatib-at-ai-ni
     house-nom  def-writer-fem-gen-dual
     ‘the house of the two (female) writers’

It is to be noted that the suffix (-ai) represents an instance of syncretism in SA since the same morpheme expresses the accusative and the genitive Case values.

Likewise, when the possessor in a construct state carries a regular masculine number, the genitive Case is expressed by the syncretic morpheme (-ii) which also expresses the accusative Case value:

(59) manzil-u  al-mua'alleem-ii-na
     house-nom  def-teacher-gen-pl
     ‘the house of the two (male) teachers’
(60) sayyar-at-u  al-mushrif-ii-na
     car-fem-nom  def-supervisor-gen-pl
     ‘the car of the two (male) supervisors’

3.4 Number Case assignment

Kremers (2003) rejects the assumption that Case in SA projects a separate functional head. He argues that Case is present as a ‘roaming feature’ on the noun, and when a functional head takes the noun as its complement, it inherits all features of the noun, including the Case features.

I differ with Kremers in his assumption that all the features on the head noun are inherited from outside the determiner phrase. I assume that Φ-features on nouns are intrinsic or at least local to its phrase, not inherited from outside the phrase, and these features get valued on the noun phrase locally. Although Kremers rightly captures the notion
of inter-phrasal agreement between the noun and other modifying categories, we don’t actually need to appeal to a weakly motivated notion like feature inheritance in this context if we can use the existing minimalist probe-goal mechanism to value morpho-syntactic features. Chomsky (2001) argues that Case is valued on functional heads but unvalued on nouns, and Φ-features are valued on nouns but unvalued on functional heads.

Although I have listed Case morphology along with the other different morpho-syntactic features in the determiner phrase in SA in the preceding discussion, I don’t consider Case to be a distinct category projecting a functional head in the Arabic determiner phrase. Instead, I claim that the head noun in a determiner phrase is consistently Case-marked by a probe that originates in a higher head, the functional head T for nominative and the functional head v for accusative (Chomsky, 2001):

Under minimalist assumptions, uninterpretable features on a designated head are matched and valued via sending a probe to the nearest DP goal in a c-command local domain (Chomsky, 2001). For example, the uninterpretable Φ-features on the head T can be valued against those of the subject DP and then get deleted to enable the derivation to converge; and as a reflex of the operation Agree, the Case of the DP gets assigned as nominative. In the same vein, the Φ-features on the head v can be valued against those of the object DP and then get deleted to enable the derivation to converge; and as a by-product of the agreement operation the Case of the DP gets assigned as accusative. Under this discussion, Φ-features on functional heads and Case on the DPs can actually be valued in-situ without appealing to movement.

A major assumption in minimalist syntax is that movement is dissociated from formal feature valuation “Note that Case assignment is divorced from movement and reflects standard properties of the probes, indicating that it is a reflex of Agree holding of (probe, goal).” (Chomsky, 2001:17).

4. The structure of the genitive construction
In this subsection, I provide an alternative structure for the genitive construction in SA where I assume that there exists a Poss functional head mediating between the head noun and the genitive complement:

\[ \text{NP} \rightarrow \text{N} \quad \text{sayyarat-u} \quad \text{car-nom} \]
\[ \text{DP} \rightarrow \text{D} \quad \text{al-th} \quad \text{PossP} \rightarrow \text{Poss} \quad [+\text{Poss}] \quad \text{NP} \rightarrow \text{N} \quad \text{rajul-i} \quad \text{man-gen} \]

In the configuration above, the head Poss probes the possessor noun in order to value its unvalued features. As a by-product of the probe-goal relation, the noun’s Case is assigned genitive in-situ.

The proposed structure shows that the Poss head is positioned below the head noun. This obviously explains why the head noun is never marked genitive, since the head Poss will probe downward towards the possessor. Also, placing the head Poss in this position will now allow a higher probe by v/T to target the head noun and assigns its nominative Case.

It is to be noted that the absence of the definiteness marker on the head noun is accounted for since the D head is below the noun and cannot probe upward. Also, there is no agreement in Case or gender between the head noun and the possessor and this can be explained in terms of intervention effects that arise because of the intervening Poss head. Thus, the structure above can successfully account for the Case agreement mismatch between the head noun and its genitive complement as well as the absence of the definiteness marker on the head noun.

5. The structure of the determiner phrase
I start the discussion in this section by taking Baker’s (1988) ‘Mirror Principle’ as the basis for my proposed structure of the determiner phrase in SA. The relatively consistent order of morphemes on the noun in this language helps us predict the hierarchy of functional categories in the Arabic determiner phrase. The four morpho-syntactic features that can appear on the noun in this language at the same time are number features, gender features, definiteness features, and Case features. In the previous subsection, I argued that Case cannot be a distinct functional category in this language. This claim is based, in part, on the fact that SA does not have discrete Case morphemes. Also, structural Case in this language can be explained by the well-established minimalist probe-goal mechanism that
can assign Case on DPs as a reflex of establishing agreement. I reproduce all the values of all the morpho-syntactic features that can appear on the noun in the sentences below:

(61) al-mua’allem-u  
    def-teacher-nom  
    ‘the teacher’

(62) al-mua’allem-a  
    def-teacher-acc  
    ‘the teacher’

(63) al-mua’allem-at-u  
    def-teacher-fem-nom  
    ‘the (female) teacher’

(64) al-mua’allem-at-a  
    def-teacher-fem-acc  
    ‘the (female) teacher’

(65) al-mua’allem-aa-ni  
    def-teacher-nom-dual  
    ‘the two teachers’

(66) al-mua’allem-ai-ni  
    def-teacher-acc-dual  
    ‘the two teachers’

(67) al-mua’allem-at-aa-ni  
    def-teacher-fem-nom-dual  
    ‘the two (female) teachers’

(68) al-mua’allem-at-ai-ni  
    def-teacher-fem-acc-dual  
    ‘the two (female) teachers’

(69) al-mua’allem-uu-na  
    def-teacher-nom-pl  
    ‘the teachers’

(70) al-mua’allem-ii-na  
    def-teacher-acc-pl  
    ‘the teachers’

(71) al-mua’allem-aat-u  
    def-teacher-(fem/pl)-nom  
    ‘the (female) teachers’

(72) al-mua’allem-aat-a  
    def-teacher-(fem/pl)-acc
‘the (female) teachers’

The uniformly similar patterns of the different morpho-syntactic markers on the nouns in the examples above clearly show that the relatively consistent order of features on the noun in SA is as follows:

[D-(Noun)-Gen-Num]

In the tree below, I provide a new structure for the different functional categories in the Arabic determiner phrase:

In the configuration above, the head noun has unvalued features that need to be valued against matching features in the functional categories above the noun. It also has a Case feature that needs to be assigned. The probe-goal mechanism between the noun and the higher functional categories is immediately blocked by the intervening head immediately positioned above the noun, therefore the noun undergoes multiple cyclic movement to by-pass this constraint. It is to be noted that the noun does not need to move past the D head, because agreement here can be established in-situ through a probe, without resorting to movement. Thus, the definiteness marker (al-) surfaces as a prefix, while other markers surface as suffixes on the noun.

6. Conclusion

In this paper, I have presented an analysis of the determiner phrase in SA. I have argued that there exist several functional categories in the determiner phrase along with the noun, namely DP, GenP, and NumP. Each of these functional heads houses a feature that needs to be valued on the noun. Besides, Case markers are argued to be licensed by a higher probe originating in a functional category above the determiner phrase such as v or T.

In the genitive construction, the head Poss probes the possessor to check its unvalued features, and as a reflex assigns genitive Case to the complement noun. The head Poss which mediates between the head noun and the complement noun blocks any agreement between the head noun and the possessor. A new analysis is proposed to account for the empirical facts on Case, agreement, and word order in the genitive construction in SA.

The discussion of the data shows that in SA the noun undergoes cyclic movements searching for values for its unvalued features. It moves to the left of the functional categories that house the valued features. The noun does not move past the D head since
the definiteness feature can be valued in-situ, hence the appearance of the definiteness marker as a prefix. A new structure for the determiner phrase in SA is proposed to account for the data discussed in previous sections.

References
Abney, S. 1987. *The English Noun Phrase in its sentential aspect* [D]. PhD dissertation, MIT.
Baker, M. 1988. *Incorporation* [M]. Chicago: University of Chicago Press.
Belletti, A. & Rizzi, L. (eds). 1996. *Parameters and functional heads: essays in comparative syntax* [C]. New York, N.Y.: Oxford University Press.
Bittner, M. & Hale, K. 1996. The structural determination of case and agreement [J]. *Linguistic Inquiry*, 27(1): 1-68.
Carstens, V. 2000. Concord in minimalist theory [J]. *Linguistic Inquiry*, 31(2): 319-355.
Carstens, V. 2001. Multiple agreement and case deletion: against phi-(in)completeness [J]. *Syntax*, 4(3): 147-163.
Chomsky, N. 2001. Derivation by phase [A]. In M. Kenstowicz (ed.), *Ken Hale: A life in language* [C]. Cambridge, Mass.: MIT Press, 1-52.
Fassi Fehri, A. 1993. *Issues in the structure of Arabic clauses and words* [M]. Dordrecht: Kluwer.
Fassi Fehri, A. 1999. Arabic modifying adjectives and DP structures [J]. *Studia Linguistica*, 53(2): 105-154.
Grimshaw, J. 1990. *Argument structure* [M]. Cambridge, Mass: The MIT Press.
Grimshaw, J. 1991. Extended projection [A]. In P. Coopmans, M. Everaert & J. Grimshaw (eds), *Lexical specification and insertion* [C]. The Hague: Holland Academic Graphics, 115-134.
Grimshaw, J. 1998. *Locality and extended projection* [M]. Manuscript, Rutgers University.
Halle, M. & Marantz, A. 1993. Distributed morphology [A]. In K. Hale & S. J. Keyser (eds), *The view from building 20: essays in linguistics in honor of Sylvain Bromberger* [C]. Cambridge, Mass: The MIT Press, 111-176.
Jelinek, E. 1984. Case and congraduralionality [J]. *Natural Language & Linguistic Theory*, 2: 39-76.
Kremers, J. 2003. *The Arabic noun phrase: a minimalist approach* [D]. PhD dissertation, University of Nijmegen.
Longobardi, G. 1994. Reference and proper names: a theory of N-movement in syntax and Logical Form [J]. *Linguistic Inquiry*, 25(4): 609-665.
Longobardi, G. 1995. A case of construct state in Romance [A]. In R. Ajello & S. Sani (eds). 1995. *Scritti linguistici in onore di Tristano Boelli* [C]. Pisa: Pacini, 293-329.
Reuland, E. 1990. Head movement and the relation between syntax and morphology [A]. In G. Booij & J. van Marie, (eds.), *Yearbook of morphology 3* [C]. Dordrecht: Foris, 129-161.
Ritter, E. 1991. Two functional categories in noun phrases: evidence from Modern Hebrew [A]. In S. D. Rothstein (ed.), *Perspectives on phrase structure: heads and licensing* [C]. San Diego: Academic Press, 37-62.
Ritter, E. 1993. Where's gender? [J]. *Linguistic Inquiry*, 24: 795-803.
Siloni, T. 1997. *Noun Phrases and nominalizations: the syntax of DP*, Dordrecht: Kluwer Academic Publishers.
Szabolcsi, A. 1983. The possessor that ran away from home [J]. *The Linguistic Review*, 1: 89-102.
Szabolcsi, A. 1987. Functional categories in the noun phrase [A]. In Kenesi, István (ed.), *Approaches to Hungarian* [C]. Szeged: Jate, 167-189.
Szabolcsi, A. 1994. The noun phrase [A]. In F. Kieler & K. Kiss (eds), *The syntactic structure of Hungarian* [C]. San Diego: Academic Press, 197-174.
Szabolcsi, A. 1997. Strategies for scope taking [A]. In A. Szabolcsi (ed.), *Ways of scope taking* [C]. Dordrecht: Kluwer Academic Publishers, 109-155.
Wright, W. 1981. *A Grammar of the Arabic Language* [M]. Beirut: Librairie du Liban.

*Macrolinguistics (2018)*