A MINIMALIST APPROACH TO THE SEMITIC CONSTRUCT STATE

SUZANNE BARDEAS

Abstract

In this paper I present a minimalist analysis of Semitic Construct State DPs, using mainly data from Makkan Arabic, a spoken variety used in some parts of the western region of Saudi Arabia. I first review the major properties of Construct States and some of the main accounts found in the literature about this structure. I then turn to the analysis I am proposing, which basically consists of two derivational steps: the movement of N to the root of the DP in syntax and a morphological merger operation at the level of Morphological structure. This proposal adds support to recent attempts in the literature to defend head-to-spec movement (Matushansky 2006, and others). I also discuss the differences between Construct State DPs and other Semitic DPs, mainly DPs with overt articles on the noun, and I argue that these differences are due to the fact that the D projected in the each type of DP has some unique features.

1. Introduction

The Semitic Construct State has been widely studied in the generative literature. It is one of the structures Standard Head Movement of N-to-D has been largely used to account for (Mohammad 1990; Ritter 1986, 1988, 1991, and others). However, Standard Head-to-head Movement has recently been considered to be incompatible with minimalist approaches to syntax, mainly because this kind of movement does not target the root, but is rather adjoined to a higher head constituting a violation of the Extension Condition (Boeckx and Stjepanovic 2001; Chomsky 1999; Harley 2004, and others). There has been some considerable debate in the literature to find the right approach to solve this theoretical problem, while still accounting for the data Standard Head Movement previously accounted for. There is a need to solve the theory-internal problem which requires challenging some established accounts of some data in a variety of languages.

This issue has been widely discussed in the literature in relation to the verbal domain, but very little, if any, has been done to try to find out whether the nominal domain can contribute something to the debate and whether the cases of Head Movement in the nominal domain are compatible with the novel approaches to this type of movement proposed for the verbal domain. As the Semitic Construct State is a structure where an analysis involving N-t-D movement has been the "standard" approach, this structure presents the opportunity to examine how Standard Head-to-Head Movement can be modified to fit more into recent theoretical developments. Therefore, in this article I present a novel analysis of Construct State DPs, one which explains all the properties of this construction in a way that is more compatible with minimalist assumptions. The bulk of the data used here are taken from Makkan Arabic, a spoken variety used in some cities in the western region of Saudi Arabia. When necessary, I use data from other varieties of Arabic and Hebrew.[1] Section 2 introduces the most important properties of Construct State DPs and the major analyses found in the literature. Section 3 presents the proposed analysis and some related arguments. Section 4 concludes the article.

2. Background

The Construct State (CS) is a genitive construction common in Semitic languages such as Arabic and Hebrew. This structure has been widely studied in the generative literature (Borer 1999; Fassi-Fehri 1993a; Mohammad 1999; Ritter 1986, 1991; Siloni 1991, 2001, and others). This section first explains the major properties of the Construct State DP (2.1), and then reviews the major proposed analyses of this construction (2.2).

2.1. Properties of Construct State DPs

Basically, a Construct State DP consists of two elements: a head noun followed by a genitive DP. The relationship between these two constituents can be that of possessed-possessor, action-agent, or action-theme, as illustrated in (1), (2) and (3), respectively.[2]

(1) kitaab   aŧ-ŧaalib
     book(m-s) the student(m-s)
     "the student's book"

(2) jari   aŧ-ŧifl
     running(m-s) the child(m-s)
     "the child's running"

(3) ḍarb   al-aŧfal
     beating(m-s) the child(m-p)
     "beating the children"

For example, in (1), *kitaab* is the head of the CS and *aŧ-ŧaalib* is the genitive DP complement. However, *aŧ-ŧaalib* is not overtly marked as genitive in MA because case is not overtly marked in this variety. However, it is a standard assumption in the literature that the second constituent of the CS bears genitive case in Hebrew and spoken Arabic, where case is not overtly marked (Mohammad 1999; Ritter 1986, and others). This is because in Modern Standard Arabic (MSA), a Semitic language which marks case overtly, the genitive case morpheme *-i* is affixed onto the end of complement in CSs, as shown in (4).

(4) moᶜalimatu   al-faṣli.   (MSA)
     teacher(f-s-nom) the class(m-s-gen)
     "the teacher of the class"

The definite article, *ʔal-* (and its variants) in Arabic, cannot be attached to the head noun.[3] The genitive phrase, on the other hand, can bear the definite article.

(5) (*al)-ʔom   (aŧ)-ŧaalib
     the mother(f-s) the student(m-s)
     "a mother of a student"/ "the mother of the student"

The same pattern applies to the use of the indefinite article, which is used only in MSA. The indefinite article is a suffix *-n* often called "nunation" (Shlonsky 2004; Wright 1896, among

others). The head of the Construct State cannot be nunated, but in an indefinite CS nunation must be used on the genitive noun. Example (6) below illustrates that nunation is obligatory on the genitive complement of an indefinite CS, but not possible on the head of the CS.

(6) ʔom-(*on)   ɫaalib-*(in)   (MSA)
     mother(f-s-nom) student(m-s-gen)
     "a mother of a student"

In other words, in MSA an overt article is always used on the genitive phrase. In Makkan Arabic, however, there is no overt indefinite article, and the absence of the definite article on the genitive complement signifies indefiniteness, as example (7) shows.

(7) ʔom   ɫaalib
     mother(f-s) student(m-s)
     "a mother of a student"

The definiteness value of the genitive phrase spreads to the whole of the Construct State DP, as can be seen in (8) and (9) below.[4] In spoken Arabic, where no indefinite article is used, the absence of the definite article on the genitive phrase *bait* in (8) signals the indefiniteness of both the genitive phrase as well as the whole Construct State DP. On the other hand, if the definite article is attached to the head of the genitive phrase *al-bait* in (9), the whole Construct State DP is interpreted as definite.[5]

(8) bab   bait
     door(m-s) house(m-s)
     "a door of a house"

(9) bab   al-bait
     door(m-s) the house(m-s)
     "the door of the house"

The claim that the head of the CS, and consequently the CS as a whole, inherits the definiteness value of the genitive complement is supported by the fact that adjectives modifying the head of the CS agree in definiteness with the genitive complement.[6]

(10) fostaan   al-madrasa   al-jadeed
      dress(m-s) the school(f-s) the new(m-s)
      "the new school dress (uniform for girls)"

In example (10) it is clear from the agreement facts that *al-jadeed* "the new" modifies *fostaan* "dress" because they both have masculine and singular features. The definite article is attached to the adjective, although the noun the adjective modifies is not marked as definite by a definite article. However, the CS in (10) is grammatical, which leads to the conclusion that the head of the CS, and consequently the whole CS, inherited the definiteness of the genitive complement. This is especially clear when (10) is contrasted with (11), where the definite article on the adjective is not possible because the genitive complement is not definite, making the *fostaan* and the whole CS indefinite.

(11) fostaan   madrasa   (*al-)jadeed
       dress(m-s) school(f-s) the new(m-s)
       "the new school dress (uniform for girls)"

Adjectives modifying either of the main constituents of the Construct State DPs come at the end of the Construct State, to the right of the genitive phrase. This sometimes leads to ambiguity in the sense that a given adjective may be interpreted as modifying either the head of the Construct State or the head of the genitive phrase. In (12), the adjective *kabeer* can be taken to be a modifier for either the head noun *bab* or the head of the genitive phrase *bait*.

(12) bab   bait   kabeer
       door(m-s) house(m-s) big(m-s)
       "a big door of a house" or "a door of a big house"

When both the head of the CS and the head of the genitive phrase are modified, adjectives are nested, with the adjective modifying the head of the CS to the right of the adjective modifying the head of the genitive phrase, as shown in (13). *Al-ḥilwa* modifies *al-bint* as they are both feminine singular. *Al-jadeed* with masculine singular features modifies *fostaan*, which has the same features.

(13) fostaan   al-bint   al-ḥilwa   al-jadeed
       dress(m-s) the girl(f-s) the beautiful(f-s) the new(m-s)
       "the beautiful girl's new dress"

The head of the Construct State DP shares some of the phonological properties of bound forms.[7] In both MSA and MA, this is clear in the obligatory use of the *t*-form of feminine nouns when they are the heads of Construct States. Some Arabic feminine nouns end with *t* only if they are bound (attached to suffixes), but not when they are free. This contrast is illustrated in (14) and (15). As (16) shows the *t*-form is used when the same feminine noun is the head of a Construct State.

(14) madrasa*(t)-ha
       school(f-s)   her
       "her school"

(15) madrasa(*t) ḥilwah
       school(f-s) nice(f-s)
       "a nice school"

(16) madrasa*(t) salwa
       school(f-s) Salwa
       "Salwa's school"

Construct States can be embedded inside one another, giving a nested structure where the definite article is allowed only on the very last noun.

(17) bait   oxt   ṣaḥbat   om   al-modira
       house(m-s) sister(f-s) friend(f-s) mother(f-s) the headmistress(f-s)
       "the headmistress's mother's friend's sister's house"

In Modern Standard Arabic genitive case is marked on all nouns in the embedded CS, while the head of the matrix CS is assigned case externally.

(18) laono   baabi   ad-dari   (MSA)
      colour(m-s-nom) door(m-s-gen) the house(m-s-gen)
      "The colour of the door of the house"

   Adjectives are also nested, with adjectives modifying a noun in the most embedded CS to the left of adjectives modifying a higher one.

(19) bait   oxt   al-modira   al-jadeed-a al-ġali
      house(m-s) sister(f-s) the headmistress(f-s) the new(f-s) the expensive(m-s)
      "the expensive house of the sister of the new headmistress"

2.2. Previous Accounts of the Construct State

Following Ritter (1986), the majority of the analyses put forth for the Construct State employ standard head-to-head movement as formally defined by Travis (1984), where a head moves and adjoins to the immediately higher head. The bulk of these proposals (for example Borer 1999; Fassi-Fehri 1989, 1993a; Mohammad 1990; Ritter 1986; Siloni 1991) argue that the derivation of the Construct State DP involves at least one instance of head movement, i.e. N-to-D as in (21).
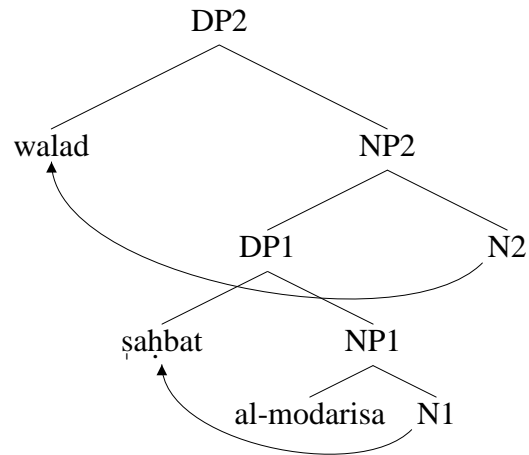
(20) bait   al-walad
      house(m-s) the boy(m-s)
      "the boy's house"

(21)

N-to-D movement gives the right word order described in examples (1), (2) and (3) in section 2.1. It is also compatible with embedded Construct State DPs like (22), as seen in (23).

(22) walad   ṣaḥbat   al-modarisa
      son(m-s) friend(f-s) the teacher(f-s)
      "the teacher's friend's son"

(23)

DP2
  walad   NP2
           DP1   N2
       ṣaḥbat   NP1
              al-modarisa   N1

Moreover, this derivation explains the position of adjectives in Construct State DPs. If APs are taken to be right-adjoined to NPs, the only position for adjectives would be at the end of the DP; adjectives modifying the head of the CS, *kabeer* modifying N2 in (25), remain in their merge position even though N moves to D. An adjective modifying the head of the genitive phrase, *bint* in (25), would also be right adjoined to an NP, NP1 in (25), giving the impression that adjectives modifying either the head or the genitive phrase are in the same position and giving the nesting effect discussed in example (19) section 2.1.

(24) bait   bint   ḥilwa   kabeer
      house(m-s) girl(f-s) beautiful(f-s) big(m-s)

      "a big house of a beautiful girl"

(25)

DP2
  bait   NP2
           NP2   kabeer
       DP1   N2
     D   NP1
        NP1   ḥilwah
         |
        bint
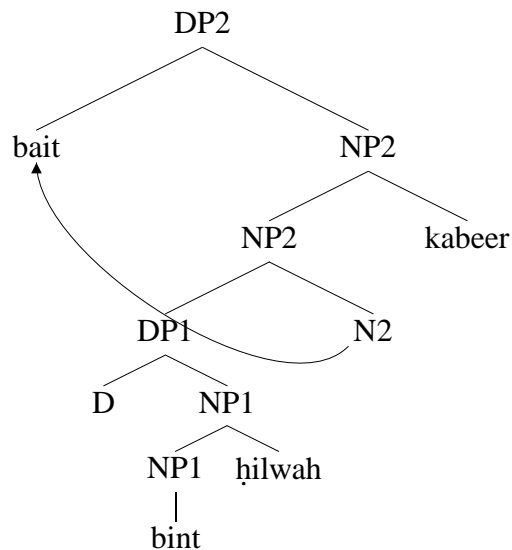
The various analyses found in the literature, however, differ in the way they motivate N-to-D movement, explain definiteness spread, and account for genitive case assignment. For Borer (1999) and Ritter (1991), the movement takes place in order to assign a +/-def value to D, which they take to be underspecified for definiteness in such constructions. Ritter argues that N inherits the definiteness value of the possessor, and by moving to D, assigns the same value

to D and consequently to the whole DP. Borer argues along similar lines, but she assumes that definiteness is base generated on N.

The non-overt D is commonly considered to be the assigner of genitive case; D assigns genitive case to the genitive phrase, which is the DP in the specifier of NP, D's complement. In Siloni (1991), it is Agr in D which assigns case, and in Ritter (1986), Poss, a morpheme in D, is the case assigner.

Nevertheless, these analyses do not directly explain the phonological properties of the head of the Construct State DP. Siloni (2001), however, attempts to offer an explanation for these phonological properties. She takes the fact that heads of Construct State DPs are bound forms to suggest that the Construct State is a prosodic word, i.e. one word at the level of prosody. She argues that the head of the CS is a function word at PF and that is why it is reduced, assuming that functional words (such as prepositions, etc.) are phonologically reduced forms since they are not assigned primary stress. She also argues that genitive case checking takes place at PF, not syntax. This account, however, does not explain the fact that the head noun is a *bound* form, and not simply a reduced functional word.

All the accounts discussed above have one feature in common: they use Standard Head Movement to account for the properties of the Semitic Construct State. However, Standard Head Movement has recently been criticised as being incompatible with Minimalist principles. Chomsky (1999) argues that this kind of movement is counter-cyclic because it does not target the root. Moreover, he argues that having two kinds of syntactic movement (Head Movement and Phrasal Movement) which are governed by different principles is not theoretically favourable, especially when one of the types of movement (Head Movement) seems to be a part of another domain - PF or Morphology in the case of Head Movement. There have been different approaches to this issue in the literature. While some defend the position of Standard Head Movement as a valid syntactic operation (Roberts 2005, and others), some others try to reformulate Head Movement by either redefining it as a morphological operation (Harley 2004; Parrott 2001, for example) or by arguing for a change in the way heads move and keeping the operation in the realm of syntax (Bobaljik and Brown 1997; Contreras 2003; Matushansky 2006, and others). In this article, I take the last position. I will attempt to redefine Head Movement in the Construct State DP to make it more compatible with Minimalist syntax.

In the next section, I will provide a novel analysis of Construct States DPs. The account I outline here explains all the properties of Construct States, including the bound-status of the head noun. This proposal has the added advantage of obeying the Extension Condition, thus avoiding the major issue some have recently raised against Standard Head Movement (Boeckx and Stjepanovic 2001; Chomsky 1999, and others).


3. The Construct State: A Minimalist Approach

As noted in section 2 above, the majority of the proposed accounts of Construct State DPs employ Standard Head Movement of N-to-D. However, head-to-head movement, as discussed above, has been recently criticised as being counter-cyclic because it does not conform to the Extension Condition, in the sense that it does not target the root (see Boeckx and Stjepanovic 2001; Chomsky 1999, 2000; Fanselow 2004). This section develops a detailed analysis of CSs which avoids the main theoretical problem of Standard Head Movement because it allows the head to be merged at the root.

3.1. Proposal

In line with recent proposals to allow heads to target the root (Contreras 2003; Fanselow 2004; Matushansky 2006; Toyoshima 2001; Vicente 2007), I propose here that in Construct State DPs N moves and targets the root, instead of being adjoined to D.[8] According to this analysis, the derivation of the Construct State in (9), repeated here as (26) would be (27).

(26) bab   al-bait
      door(m-s) the house(m-s)
      "the door of the house"

(27)
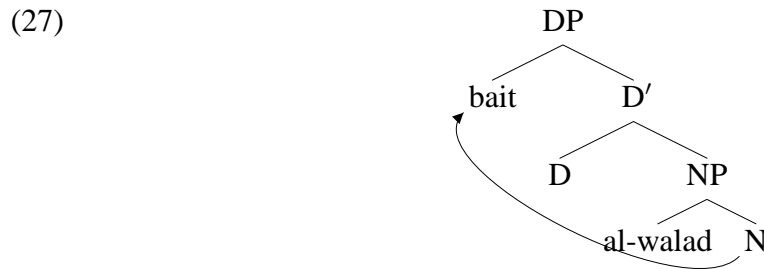
Assuming in line with previous analyses in the literature that D drives the movement of N, the movement in (27) is the result of the following derivational steps. When D is first merged and projects, it causes N to move. Unlike what Standard Head Movement would predict, N is not adjoined to D. N rather is merged at the root the root, landing on the edge of the structure (specifier of D) and causing D to project once more.

Fanselow (2004), however, argues that it is not theoretically sound for to heads to target the root. He claims that such a movement changes the status of the moved head from a head in its original position to a phrase, or a maximal projection, in its landing site. This is because before moving, the relevant head is dominated by at least one more instance of itself, whereas in its landing site it is not. Thus, Fanselow claims that this is not a legitimate configuration according to the Structure Preservation Constraint of Emonds (1976).

(28) **Structure Preserving Constraint (SPC)**:
      Major grammatical transformational operations are either root or structure-preserving operations.

                                                                                          (Emonds 1976: 5)

(29) **Structure Preserving Transformation**:
      A transformation ... that introduces or substitutes a constituent C into a position in a phrase marker held by a node C is called "structure preserving."

                                                                                          (Emonds 1976: 3)

Nevertheless, in a system which does not recognise head positions vs. phrasal positions per se, while still maintaining the distinction between heads and phrases, such an argument is not valid. Take heads and phrases to be defined as (30) and (31) respectively (Chomsky 1995: 396).
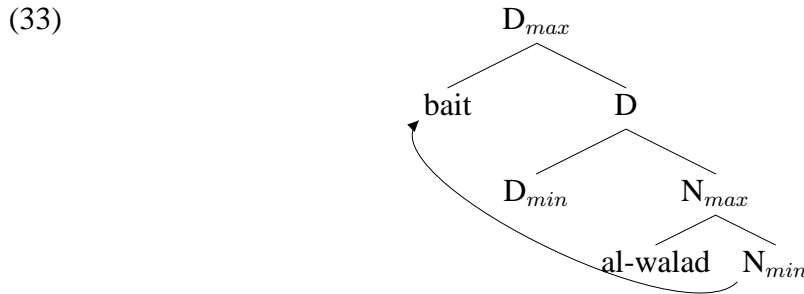
(30) Head: a node which does not dominate any more instances of itself.

(31) Phrase: a node which is not dominated by any more instances of itself.

According to these definitions, a given node can be both a head and a phrase, which is the case when a given node neither dominates nor is dominated by any more instances of itself. For example, Y in (32) fits both the definitions of a head and a phrase while occupying the same position in the structure. In other words, Y is both a minimal and a maximal projection.

(32)   X2

                                              X1   Y

Thus, it is not possible to define a specific node as either a head or a phrase without considering the position it occupies in a given phrase marker; a given node can be a head and/or a phrase depending on the configuration it occurs in. Thus, there should be no restriction that heads could only land in "head positions", since a moved head would be both a maximal and a minimal projection in its landing position when it targets the root. In other words, there is really no such thing as a head position. Under these assumptions, heads can target the root instead of being adjoined to a higher head. Thus, the moved N in (27) above is both a minimal and a maximal projection in its landing site. This configuration is not theoretically problematic since the theory defines heads and phrases (minimal and maximal projections) but not head positions and phrasal positions. Thus, in line with the theoretical approach I am adopting, I will henceforth use the terms "maximal projection" and "minimal projection" instead of "head" and "phrase", respectively. However, I will still use the familiar "DP" for ease of presentation. Thus, head-to-root movement is theoretically tenable in a framework in which the Structure Preservation Constraint is not definable. According to this framework, the derivation in (27) above would be rewritten as (33).

(33) D_{max}

                                    bait   D

                                        D_{min} N_{max}

                                              al-walad N_{min}

3.2. Properties of CSs

The analysis introduced in section 3.1 does derive the right word order of head-genitive phrase. But it still remains to be shown how this proposal, as reflected in (33), can account for the other properties of Construct States. In this section, I will examine the way my approach to the movement within the Construct State deals with the important issues listed below:

- How is this movement motivated?

- How can the impossibility of the definite article on the head noun be explained?

- How can the definiteness spread from the genitive phrase to the head noun be accounted for?

- How can other properties of Construct States discussed in section 2.1 be accounted for? Can this proposal accommodate all the properties previous analyses explained? Does it have an advantage in the sense that it can account for properties other proposals are not able to account for, or at least offer a better, more straightforward explanation for them?

The first three issues listed above are all related to the D projected in Construct States. I am going to argue below that the D projected in Construct States is a null D (hence the absence of the definite article) with a c-selectional feature, an EPP feature and an unvalued definiteness feature, and that it is this D which drives the movement of N. Projecting this D in Construct States also explains the definiteness spread from the genitive phrase to the whole Construct State DP.

Before discussing the Construct State DP, let us briefly turn to the Arabic DP in general. It has been generally assumed in the generative literature that N always moves to D in the Semitic languages (Benmamoun 2003; Fassi-Fehri 1993a; Mohammad 1999, among others). This includes simple indefinite and indefinite DPs (as in (34) and (35)), Construct States (36), and Free Genitives ((37) and (38)).

(34)   warda
       flower(f-s)
       "a flower"

(35)   as- saiara
       the car(f-s)
       "the car"

(36)   zaojat   xaalid
       wife(f-s) Khalid
       "Khalid's wife"

(37)   al-kitaab   ḥag   ḥanaan
       the book(m-s) belonging-to(m-s) Hanan
       "the book of Hanan"

(38)   baṣ   ḥag   al-ḥojjaj
       bus(m-s) belonging-to(m-s) the pilgrim(m-p)
   "a bus for the pilgrims"

Fassi-Fehri (1993a) argues that the obligatory N raising in Semitic languages is due to the affixal nature of D. The definite article in Hebrew and all the varieties of Arabic is affixal (a prefix), and the indefinite article, which is used only in Modern Standard Arabic, is a suffix. In a system of head-to-root movement, Semitic N_{min} is not adjoined to D_{min}, but rather lands in a position which both dominates and is dominated by instances of D, giving the configuration in (39).

(39)

D_{max}

N_{min} D

D_{min} N_{max}

(...)   N

N_{min} (...)
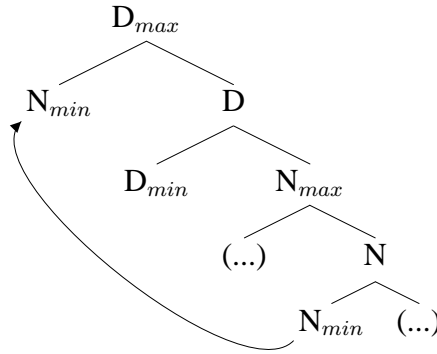
The first question to answer is: what motivates this movement? Some of the earlier analyses mainly attributed the movement in simple DPs and Free Genitives to the affixal requirements of D (Fassi-Fehri 1993a, chapter 5). Head Movement in Construct States, however, was motivated for different reasons. Some used N-to-D movement to account for the absence of the definite article on the head noun in the sense that the moved noun occupies the position which would otherwise be occupied by an article (Ritter 1986, for example). Some others, however, linked the movement to the definiteness spread; N transmits the definiteness of the genitive phrase to D by agreeing with the genitive phrase first and then moving to D (Borer 1999, for example). I propose here that the motivation behind the movement of N is the same in all Arabic DPs. The Arabic D has both a c-selectional feature for an N and an EPP feature which I argue can be checked by moving the c-selected head and remerging it at the root. Thus, the Merge of D triggers the movement of N because of the combination of D's c-selectional feature and EPP feature. The c-selectional feature selects the category which has to move in order to check the EPP feature on D. In the cases where N does not have any arguments, it is N, which is an $N_{min/max}$, that moves, which is the case in simple DPs, such as examples (34) and (35) above.

(40) D_{max}

N   D

D_{min} N
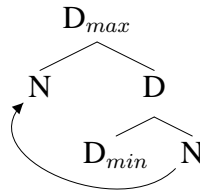
When N, however, has one or more arguments as in the case of CSs, it is N_{min} (the head) which moves. This is because the EPP feature on D is linked to a c-selectional feature, and arguably c-selection affects minimal projections (heads). I follow Matushansky's 2006 approach to c-selection here.

(41)   C-selection: A head may select the syntactic category (and the lexical content) of the head of its complement.

                                                                    (Matushansky 2006: 76)

      .

This movement targets the root because in accordance with the Extension Condition, all operations "must extend the root" (Chomsky 1993: 23).

But if N moves in all Arabic DPs, what distinguishes Construct State DPs from other DPs and how can the special properties of the former be accounted for? I propose here that the D projected in Construct States is different from the Ds projected in simple DPs and in Free

Genitives. While the Ds projected in the latter two have specified definiteness values (either [+D] or [-D]), the D projected in Construct States has an unvalued definiteness feature. This feature is valued by an Agree relation with the D in the genitive phrase, thus leading the whole Construct State to have the same definiteness value as the genitive phrase. Moreover, this D checks its genitive case on the genitive phrase.[9] Thus, the D projected in Construct States is a different lexical item from the Ds projected in simple DPs and Free Genitives since they possess different sets of features. I propose here that Semitic languages have three different Ds:

1. a null D with the set of features [EPP, uN, gen, Def:]. This is the D projected in Construct States.

2. an overt D with the set of features [EPP, uN, +Def]. This D is projected in definite simple DPs and Free Genitives and is the prefix *al-* or one of its variants in Arabic.

3. a D with the set of features [EPP, uN, -Def]. This D is projected in indefinite simple DPs and Free Genitives. This D is null in spoken Arabic and in Hebrew and is overt in Modern Standard Arabic (*-n*, a suffix)

Thus, the Construct State in (42) has the derivation in (43).

(42)   loon   at-tofaḥa
       colour(m-s) the apple(f-s)
   "the colour of the apple"

(43)
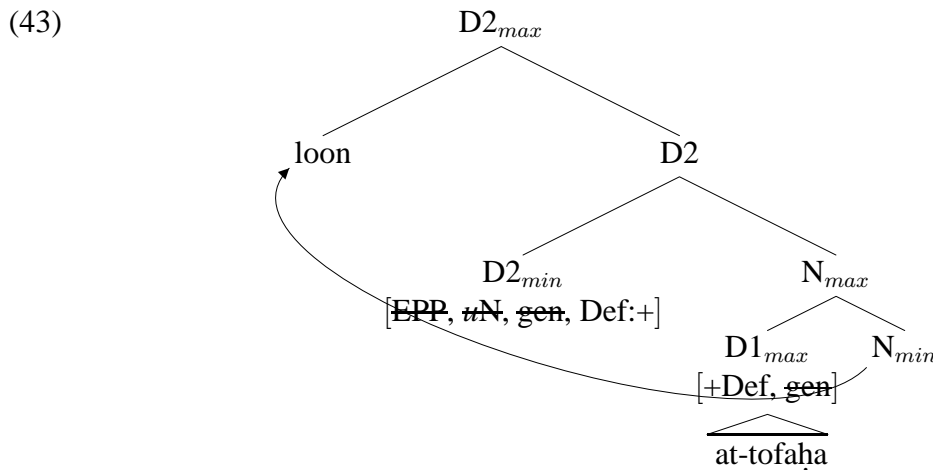
At the point of Merge, D checks its c-selectional feature for an N. The definiteness feature on D is valued via Agree with the genitive phrase $D1_{max}$ (*at-tofaḥa*). Moreover, $D1_{min}$ and $D2_{min}$ check their case features, $D2_{min}$ being the functional case assigning head. N_{min} then moves to the root in order to check D2's EPP feature, and as a result D2 projects once more. Since all checkable features are checked and unvalued ones are valued, the derivation of the Construct State DP terminates and converges.

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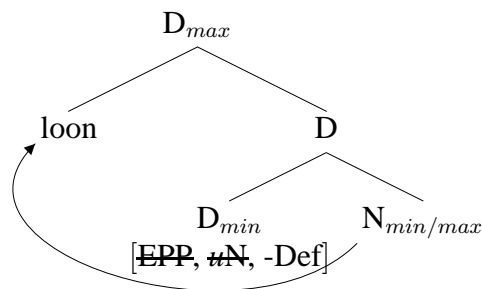
(44)   *tofaḥat
       apple(f-s)
       "apple"

(45)   *

$$D_{max}$$

tofaḥat   D

                    D_{min} $N_{min/max}$
             [~~EPP~~, *u*N, gen, Def:]
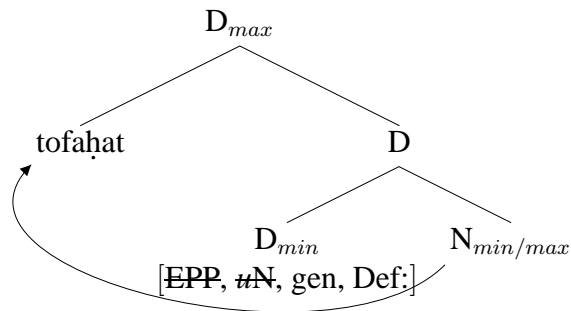
Thus, the derivation crashes.

Since the Ds with valued definiteness features do not check genitive case, the derivation of a simple DP such as *loon* "a colour" would be (46).
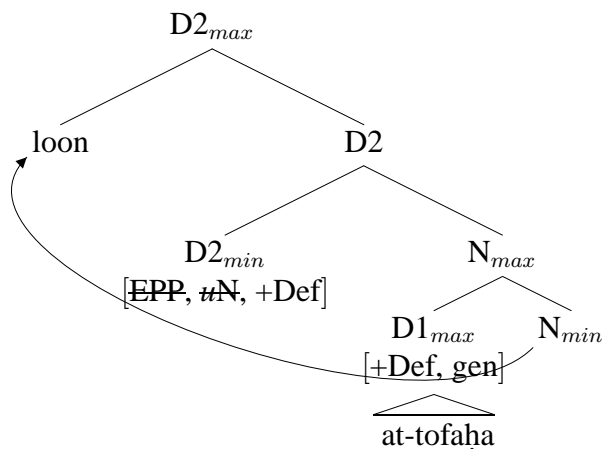
(46)

$$D_{max}$$

loon   D

                    D_{min} $N_{min/max}$
              [~~EPP~~, *u*N, -Def]

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

Ds with a specific definiteness value ([-D] as in (46) or a D with [+Def] feature) cannot be projected in Construct State DPs since they do not check genitive case. If one of them were projected, the genitive case on the genitive phrase in the Construct State would not be checked and the derivation would crash.[10]

(47)   *

$$D2_{max}$$

loon   D2

              $D2_{min}$ N_{max}
        [~~EPP~~, *u*N, +Def]

                           $D1_{max}$ N_{min}
                        [+Def, ~~gen~~]
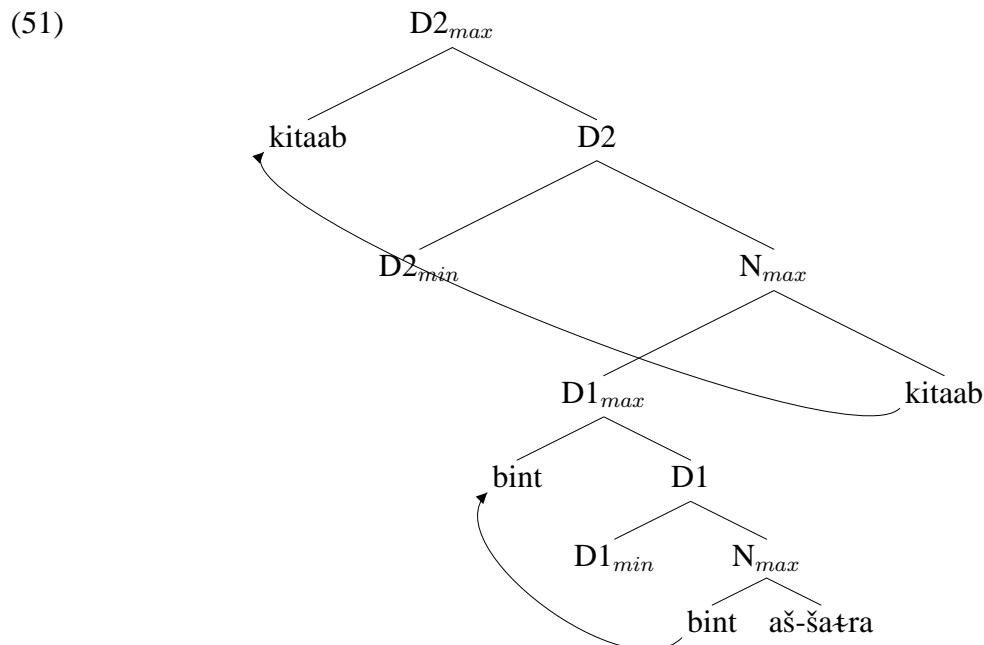
                              at-tofaḥa

As noted in section 2, adjectives modifying either the head noun or the genitive noun appear at the end of the Construct State DP. This suggests that Adjectives are right-adjoined, as represented in (49).

(48) kitaab al-bint al-jadeed
book(m-s) the girl(f-s) the new(m-s)
"the new book of the girl"

(49)

D_{max}
kitaab — D
D_{min} — N_{max}
N al-jadeed
al-bint kitaab
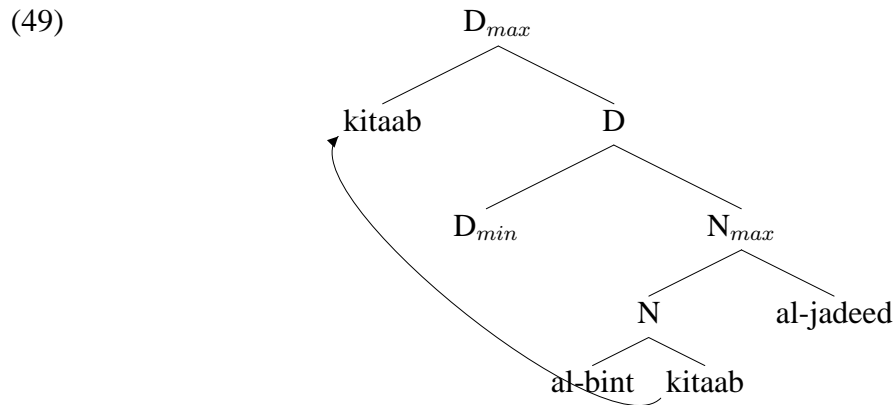
This gives the same surface position of adjectives whether they modify the head of the CS or the genitive complement. As (49) shows, after the movement of *kitaab*, the adjective is the rightmost word in the CS. The same is true when the adjective is modifying the genitive complement, as shown in (51).

(50) kitaab al-bint aš-šaṯra
book(m-s) the girl(f-s) the good(f-s)
"the book of the good girl"

(51)

$D2_{max}$
kitaab — D2
$D2_{min}$ — N_{max}
$D1_{max}$ kitaab
bint — D1
$D1_{min}$ — N_{max}
bint aš-šaṯra

However, it has been suggested in some of the related literature that Semitic adjectives are left-adjoined. The motivation for this is the position of adjectives in Construct States headed by verbal nouns. In such cases an adjective modifying the head of the CS comes between the two arguments of the head noun, as shown in (52) (Ritter 1991: 44).

(52)   ?? axilat dan ha-menumeset et   ha-uga   (MH)
         eating Dan the-polite   ACC the-cake
         "Dan's polite eating of the cake"

This pattern has lead Ritter (1991) to propose that there is an additional functional projection in Semitic DPs, and that adjectives are left-adjoined. She analysed the DP in (52) as (53).

(53)
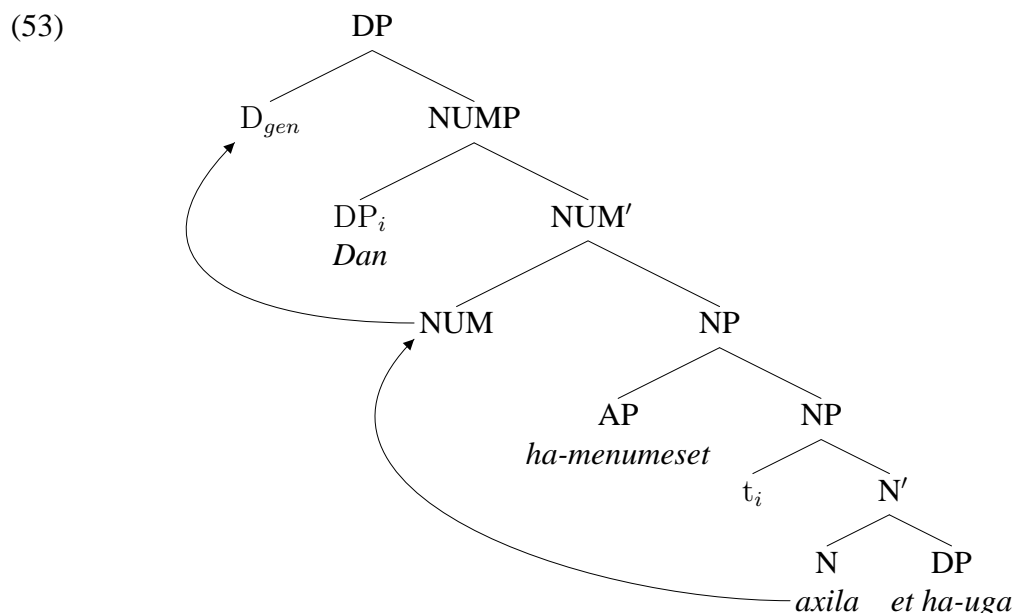
However, this word order does not necessarily mean that adjectives are left adjoined. Since the second argument is always the complement of a preposition,[11] the pattern is compatible with a post-posing analysis of the prepositional argument. This proposal is supported by other cases of post-posing of prepositional arguments in the Semitic DP, as illustrated by the Hebrew examples in (54)-(56).

(54)   mehandes   amerikai   gavoha   (MH)
         engineer(m-s) American(m-s) tall(m-s)
         "a tall American engineer"

(55)   *mehandes   meamerika   gavoha   (MH)
         engineer(m-s) from America tall(m-s)
         "a tall engineer from America"

(56)   mehandes   gavoha meamerika   (MH)
         engineer(m-s) tall(m-s) from America
         "a tall engineer from America"

In (56) the order of the modifiers is the opposite of those in (54). This pattern can be accounted for if we assume that the prepositional modifier *meamerika* has been post-posed. When both modifiers are adjectival, the nationality adjective *amerikai* appears to the left of the physical description adjective *gavoha*. On the other hand, when the modifier denoting the nationality is prepositional *meamerika*, it comes to the right of the physical description adjectival modifier

gavoha. Given that the order of modifiers in Semitic is a mirror image of English (see Fassi-Fehri 1993b), and assuming that the Merge position of modifiers in both cases is the same, the word order in (56) should be the result of post-posing the prepositional modifier. A similar pattern is found in Makkan Arabic, as shown in (57)-(59).

(57) mohandis   amriki   ṭaweel
      engineer(m-s) American(m-s) tall(m-s)

      "a tall American engineer"

(58) *mohandis   min amrika   ṭaweel
      engineer(m-s) from America ṭall(m-s)

      "a tall engineer from America"

(59) mohandis   ṭaweel min amrika
      engineer(m-s) ṭall(m-s) from America

      "a tall engineer from America"

Another case of the post-posing of a prepositional argument in Makkan Arabic is the dislocation of the indirect object when it is dominated by a preposition.

(60) ʔaᶜṭeet *aḥmad al-kitaab*
      gave(1-s) Ahmad the book(m-s)

      "I gave Ahmad the book."

(61) ʔaᶜṭeet al-kitaab   l-aḥmad
      gave(1-s) the book(m-s) to Ahmad

   "I gave the book to Ahmad."

Here the indirect object *aḥmad* is before the direct object *aḥmad* when the former is not dominated by a preposition. However, when *aḥmad* is dominated by a preposition, it has to appear to the right of the direct object.

Thus, having only one functional projection in Construct State DPs is sufficient to account for the major properties of Construct States, and the projection of an additional functional head is not motivated.

3.3. Phonological properties of the head of the CS

So far, I have shown that the analysis developed in this paper can explain the word order in Construct State DPs, the lack of articles on the head noun, genitive case, and the definiteness spread. It still remains to be shown how it can also account for the phonological properties of the heads of Construct State DPs. I will argue below that a morphological merger operation which applies at the level of Morphological Structure can explain the bound status of the head noun.

Matushansky (2006) argues that head-to-root movement is always followed by M-merger, an operation of the morphological component which merges the moved and the attracting heads. The basic idea of M-merger is that it converts the structure resulting from head movement 62a to the structure in 62b, which is very similar to the structure resulting from standard Head Movement (Matushansky 2006: 81).

(62)   a. X_{max} $\Longrightarrow$ b. X_{max}
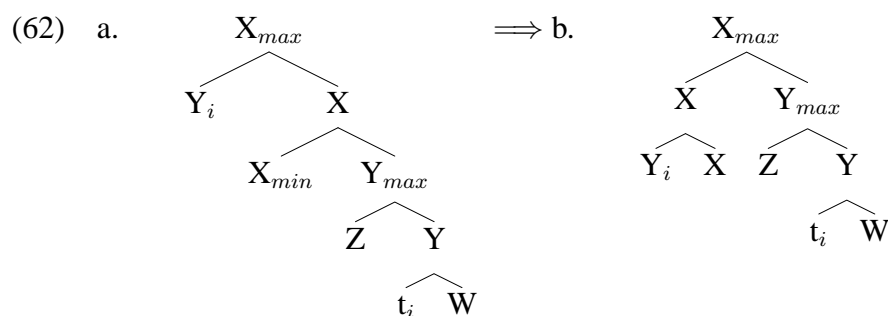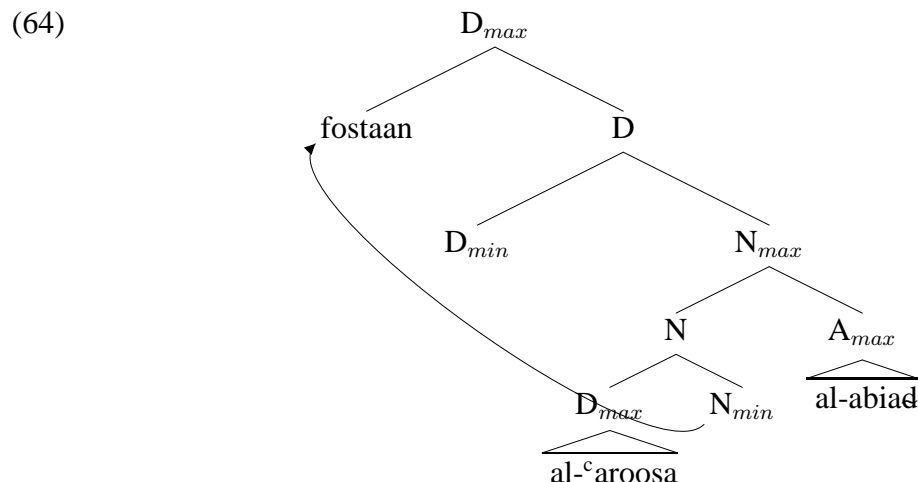
The differences between this structure and the one resulting from standard Head Movement are that the structure in (62) is formed in the morphological component and that it involves lowering one head to another, as opposed to raising in standard Head Movement.
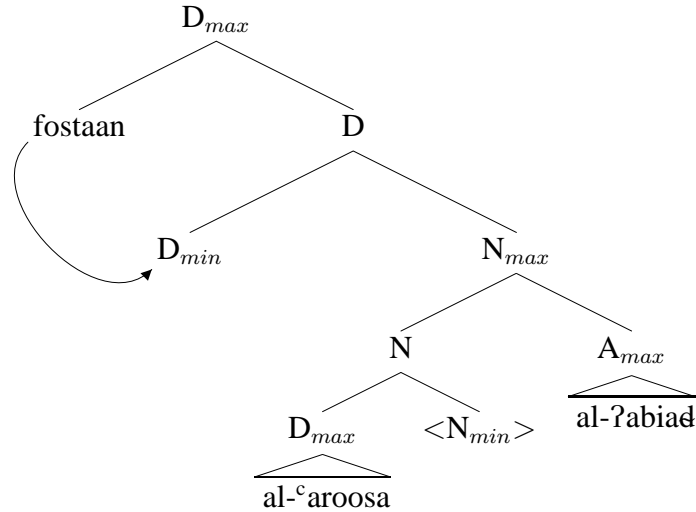
There is evidence that M-merger takes place in Semitic DPs following the movement of N, merging N and D. As noted above, he definite article in Hebrew as well as all the varieties of Arabic is a prefix, and it cliticises onto N: *ha-bayit* "the house", Hebrew; *ʔal-kitaab* "the book", Arabic. Moreover, the indefinite article in Modern Standard Arabic is a suffix: *kitaaba-n* "a book". Interestingly, a noun attached to the indefinite article shares the phonological properties of the head of the Construct State. For example, in Makkan Arabic, feminine nouns ending in *-t* should have the *-t* dropped when no suffix is attached to the end of the noun as in the free form *madrasa* "school" or the definite form *ʔal-madrasa* "the school". However, when a suffix is used, the *-t* cannot be dropped, whether the suffix is a possessive pronoun as in *madrasat-i* "my school" or the indefinite article *-n*, as in *madrasatan* "a school". When the same noun is the head of the CS, the *-t* cannot be dropped, as in *mardasa*(t) al-ʔatfal* "the children's school". This suggests that a merging operation does take place between N and D, although D in this case is null. The fact that it is the end of the noun which is phonologically affected suggests that N is merged to the left of D.[12]

Thus, the derivation of the Construct State in (63) consists of a syntactic part - where *al-ᶜaroosa* moves and is remerged at the root - (64) and a morphological part - where *al-ᶜaroosa* is moved again and morphologically merged with D - (65).[13]

(63)   fostaan   al-ᶜaroosa   al-abiaḍ
       dress(m-s) the bride(f-s) the white(m-s)
       "the bride's white dress"

(64)

(65)

$$D_{max}$$

fostaan   D

$$D_{min}$$ $$N_{max}$$

N $$A_{max}$$

$$D_{max}$$ $$<N_{min}>$$ al-ʔabiaḍ

al-ᶜaroosa

This analysis can account for all the properties of Construct States, and it also avoids the theoretical problems Standard Head Movement has.

This section has presented a minimalist approach to Head Movement in the Semitic DP. I proposed that the movement of N_{min} takes place in all Semitic DPs. The differences between simple DPs and Free Genitives on one hand and Construct States on the other is due to the different Ds projected in these structures. The D projected in Construct States differs from other Ds in that the Construct State D has an unvalued definiteness feature and a genitive case feature. I also proposed that a morphological operation merges D and the moved N. This analysis is more minimalist than previous proposals because it does not conflict with the Extension Condition. It also accounts for all the properties of Construct State DPs and offers a unified and comprehensive analysis of the different kinds of Semitic DPs.

4. Conclusion

The analysis presented in this article adds support to the recent proposals of head-to-spec (head-to-root) movement in the verbal domain (Contreras 2003; Fanselow 2004; Matushansky 2006; Toyoshima 2001; Vicente 2007). Under current minimalist syntactic assumptions, it is theoretically permissible for heads (minimal projections) to move to the root of the relevant structure. This movement has at least two advantages: it does not violate the Extension Condition and it minimises the differences between Head Movement and Phrasal Movement. Moreover, it explains the often reported connection between Head Movement and rich morphology (Kosmeijer 1986, and after). If a morphological merger operation always followed the syntactic movement of the head, this would be reflected in the rich morphology. Nevertheless, more work is needed to test whether other structures Standard Head Movement can account for can be accommodated under this approach. Ideally, all of those structures can either be explained using head-to-root movement or be accounted for by other mechanisms.

Notes

1. Most of the data used in this paper is from Makkan Arabic (MA). However, I also use some examples from Modern Standard Arabic and Modern Hebrew. For examples taken from the last two languages. I will clearly specify the langauge each example comes from using either (MSA) for Modern Standard Arabic or (MH) for Modern Hebrew.

2. I use the following abbreviations in the glosses:

- Gender: masculine (m), feminine (f)

- number: singular (s), plural (p)

- case: nominative (nom), accusative (acc), genitive (gen)

3. The citation form of the definite article in Arabic is *ʔal-*. However, in connected speech, the glottal stop is dropped. In some cases, the *l-* is assimilated to match the first sound in the word the definite article is attached to. In this case, the definite article is transcribed as *a* plus the relevant sound (e.g. aṯ-ṯifl).

4. The examples used to illustrate this point are singular. However, the same pattern applies in plural cases.

5. In order to express "a door of the house", it is necessary to use a free state genitive where possession is indicated by means of a preposition, as in (66).

(66) bab   ḥag   al-bait
      door(m-s) belong-to the house(m-s)
      "a door of the house"

  See Fassi-Fehri (1993a) for discussion.

6. In Arabic, adjectives agree with the noun they modify in number, gender, definiteness (and case for MSA).

7. By "bound forms" I mean forms which cannot be morphologically independent, but rather should be affixed to other forms.

8. An anonymous YPL reviewer pointed out that allowing heads to be merged at the root can potentially allow the categorial status to change. This is an important theoretical point that needs to be addressed by any proposal of head-to-root movement, but it is beyond the scope and purpose of this paper but something which I will work on in the course of my PhD research. In the mean time, I adopt Matushansky's 2006 approach to this problem. In brief, Matushansky argues that the node which c-selects is the one which projects, thus categorial change does not take place as a result of head-to-root movement.

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

10. An anonymous YPL reviewer thinks that the motivation behind stipulating the unvalued D feature on the Construct State D is just to resolve the issue of definiteness spread, which according to the reviewer is best explained by the traditional analysis. I disagree with the reviewer in this point. An extra appeal of my analysis is that it explains the differences between CSs and simple DPs and develops a system which explains how each of these is derived. Most

of traditional analyses do not address this point. They simply assume that D checks genitive case, without addressing the issue of why genitive case assignment takes place only in CSs but not other DPs. Another point raised by the reviewers is why does N have to leave the N projection, and why cannot it be adjoined as a second N specifier. There are several problems in this. One of them is that the movement cannot be motivated, or has to be motivated in a different way. It is outside the scope of this paper to elaborate on this point.

11. In Modern Standard Arabic, the second argument is not dominated by a preposition, but it is assigned accusative case by the head noun. However, modifiers of the head in these cases are adverbial rather than adjectival, and they appear to the left of the second argument.

> (67)   ʔakl-u al-waladi at-toffaḥata sareeᶜan   (MSA)
>   eating(m-s-nom) the boy(m-s-gen) the apple(f-s-acc) quickly
>   "The boy's quick eating of the apple"

12. As pointed out in Matushansky (2006) and Vicente (2007), an approach which includes both "head-to-spec movement" (or the movement of heads to the root) as well as a morphological merger operation would have to account for the interaction between syntax and morphology in cases of successive head movement. There must be a mechanism for the movement of complex heads formed as a result of M-merger. Matushansky proposes that there is a partial spell-out of complex heads, and Vicente argues that M-merger takes place prior to transfer. This issue, however, does not arise for the Construct State because there is only one instance of head movement. the Construct State data is thus not appropriate for evaluating this issue and as a result I will not discuss it any further in this context.

13. A YPL reviewer asked whether I am adopting Distributed Morphology, which postulates a morphological level distinct from the syntactic level. I have not developed the morphological part of the derivation yet, but my analysis is consistent with a separate level of morphology. The advantage of having a morphological part of the derivation is to account for the phonological properties of the head of the CS; i.e. the fact that the head of the CS is a bound form. Proposing a morphological operation after the syntactic movement explains that. A bound form has to be affixed onto some other constituent, which is a morphological operation.

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Suzanne Bardeas
Department of Language and Linguistic Science
University of York
email: smb500@york.ac.uk