FUNCTIONAL HEADS AND CASE ASSIGNMENT IN NPs IN STANDARD ARABIC

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1- Introduction

One of the major assumptions of the GB-theory is that case is assigned under government. Lexical and functional categories are governors that may assign case. In the traditional analysis of NPs case is assigned only by a major lexical category (i.e. N), not a functional category. There have been serious attempts in the literature towards treating NPs as DPs by linguists like Szabolcsi (1987) for Hungarian, Abney (1987) for English, and Fehri (1988) for Standard Arabic (STA). The motivation has been to formalise a theory consistent with the spirit of X-theory and to outline a parallel structure for noun phrases and clauses making use of functional categories (e.g. INFL & DET). While clauses are viewed as IPs headed by Is, noun phrases are considered as DPs headed by Ds. The DP analysis, unlike the standard analysis of NPs, conforms to the *modifier-maximality constraint* which is one requirement of X-theory[1].

Moreover, the parallelism between NPs and Ss becomes more striking when functional categories are assimilated to lexical ones (i.e. by assigning them the status of fully fledged maximal categories projected from functional heads (e.g. I, D, C)). A consequence of the DP-analysis is the promotion of the concept *head* even further to cover not only lexical categories and the clausal functional categories (i.e. INFL, COMP), but also nominal functional categories (i.e. DET in English and INFL, COMP in Hungarian).

Abney's (1987) DP-analysis of NPs in English suggests a kind of N-movement to D for affixal attachment. Standard Arabic (STA) lends support to such movement for affixal attachment of the definite article *al* "the", as we discuss in the next section.

2. DPs in Standard Arabic

In Standard Arabic (STA) case is realized morphologically on both heads and modifiers. There are three case-markers: *nominative, accusative*, and *genitive*:

(1) a. ž ā ʔa-t fatāt-un žamīlat-un
come-perf-(3rd,sg,f) girl-NOM beautiful-NOM
"A beautiful girl came in"

b. š āhadt-u fatāt-an žamīlat-an
see-perf-(1st,sg) girl-ACC beautiful-ACC
"I saw a beautiful girl"

c. marart-u bi fatat-in žamīlat-in
pass-perf-(1st,sg) by girl-GEN beautiful-GEN
"I passed by a beautiful girl"

Nominative marking in (1a) above is realized as *-un*, accusative in (1b) as *-an* and genitive marking in (1c) as *-in*.

The termination *-n* of these case markers is called *tanwīn* in Arabic. Tanwīn is a property of a type of noun called *munsaref* "triptotes" in STA. This type of noun is inflected for the three endings mentioned above (e.g. bayt-un "a house", bayt-an, bayt-in). The second type of noun has only two distinct case endings since the ACC and GEN endings are identical. This type is called *gayer munsaref* "diptotes" and it does not usually have tanwīn (e.g. proper names such as amad, fātima, ∑uthmān ...etc.). The third type of noun has only one case ending, namely the GEN. This type is called *mabni* and it has no tanwīn (e.g. proper names such as *xalawayhi*, *sībawayhi*..etc.).

With definite expressions the *tanwīn* or the termination is dropped and the forms of case-marking are reduced to *-u*, *-a*, and *-i* respectively. Definiteness of nouns in Arabic is realized either by the attachment of the definite article *al* or by combination with another definite noun (as in genitive constructions). This deletion of *-n* is seen in the following definite examples with *al*:

(2) a. ∂l-fatāt-u ∂ž-žamīlat-u
the-girl-NOM the beautiful-NOM
"The beautiful girl"

b. ∂l-fatāt-a ∂ž-žamīlat-a
the-girl-ACC the-beautiful-ACC

c. ∂l-fa tā -i ∂ž-žamīlat-i
the-girl-GEN the-beautiful-GEN

The reduction also takes place in nominal genitive constructions. These

constructions are referred to as *construct-state constructions* and are formed from a combination of two nouns, the first lacks the definite article *al* and the second is definite. The definiteness of the second noun phrase, marked by *al*, determines the interpretation of the whole NP as definite. Consider the following example:

(3) bayt-u ∂r-raž ul-i
house-NOM the-man-GEN
"the man's house"

Notice that definiteness of the head-noun (i.e. being prefixed by *al* [2] "the" or being the *leading term* of a construct-state construction such as *bayt-u* in (3) above) reduces case-markers to *-u, -a, -i*.

An obvious hypothesis to account for this data would be the assumption that there are two case markings: those associated with definiteness (i.e. *-u, -a, -i*) and those associated with indefiniteness (i.e. *-un, -an, -in*). It would then follow that the definite article and the case markings (i.e. -un, -an, -in) are in complementary distribution: when the article is present only -u, -a and -i appear. Moreover, the genitive and the *tanwīn* are in complementary distribution.

Essentially following this hypothesis, Fehri (1988) assumes that *-n* in the first sentence of (1a) is an indefinite article and only *-u* is the NOM case-marker. In construct-state constructions like (3) no indefinite article shows up on the head noun. However, this analysis is unfortunately refuted by the fact that -n also attaches to certain proper names in STA which are inherently definite:

(4) qatal-a zayd-un ∑amr-an
kill-perf-(3rd,sg,m) Zayd-NOM Amr-ACC
"Zayd killed Amr"

This clearly shows that the entire affix *-un* must be treated as a case-marker and that *-n* is not an indefinite article. We will provide a formal account of the *tanwīn* shortly.

The fact that the head noun is definite in construct-state construction despite its lack of the definite article suggests a percolation of definiteness in NPs in STA. Evidence in support of this claim is provided by the definiteness of modifying elements. Consider the following:

(5) STA a. ra?ayt-u sayyārt-a
see-perf-(1st,sg) car-ACC
∂l-mudīr-i ∂ž-žadīdat-a
the-manager-GEN the-new-ACC
"I saw the manager's new car"

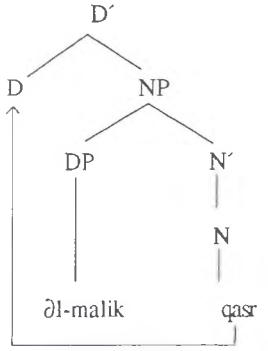
b. *ra?ayt-u sayy ā rat-a
see-perf-(1st,sg) car-ACC
ðl-mudīr-i ðžadīdat-a
the-manager-GEN new-ACC
*"I saw a new car of the manager's"

Note that only (5a) is correct in which the modifier is definite in concord with the definiteness of the whole NP, including the head noun. This example shows that definiteness percolates down to the head noun and its attributive modifier.

Not only definiteness percolates in STA but also case marking. It is apparent from the above example that the NP is structurally assigned ACC case under government by the verb *ra?ayt-u*. This case percolates down to the head noun sayyarat-a and to its attributive modifier *ðž -ž adīdat-a*. The head noun, in turn, assigns genitive case to its complement *ðl-mudīr-i* under government. This suggests, following Babby's (1987) analysis, that the case assigned to phrases by lexical case-assigners percolates down to the head noun. However, the head noun itself assigns genitive case to its complement. In conformity with Babby's analysis, case also percolates to the attributive modifiers of the head noun which are in the path of percolation.

Fehri (1988), following Abney (1987), deals with traditional NPs as "Determiner phrases" headed by D, not N. He suggests a movement of N-to-D, so that a DP such as [*qasr-a ðl-malik-i*] "the king's palace" will have the following structure:

(6)



In (6), *qasr* "palace" occupies the head position of NP, and the genitive DP (i.e. *ðl-malik-i* "the king") originates in specifier position of NP. This N (i.e. *qasr*) moves up to D to be assigned case which is trickled down from D (i.e. ACC), and then itself assigns case to the DP to its right. This case, of course, must be genitive, since NOM case-assignment results in ungrammaticality as in (7) below:

(7) * qasr-u ∂l-malik-u ba∑īd-un
palace-Nom the-king-Nom far-Nom
"The king's palace is far"

Fehri's head-to-head movement analysis of these constructions claims a strong similarity in structure between I" and D". The movement from N to D in D" parallels V to I movement in I", reinforcing the claimed parallelism between DP and the clausal structures. Since case percolates in STA, we shall however present shortly a different account from Fehri's in which no N-to-D movement is required in construct-state constructions.

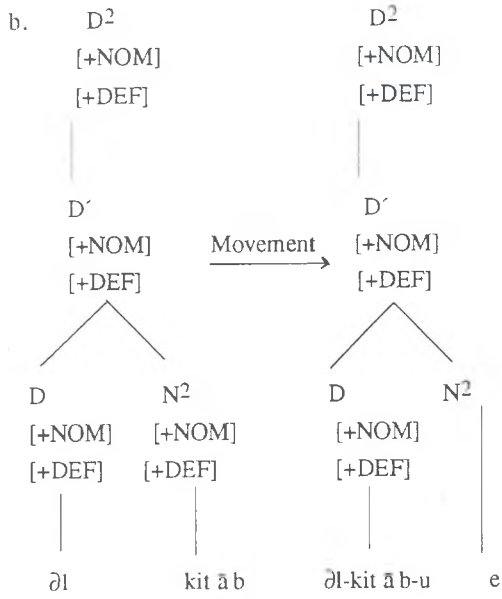
Underlying Fehri's analysis is the assumption that case-assignment is directed rightwards in STA. This entails that case-assignment is limited only to the categories occurring on the right hand side of the case assigner. The domain of case in STA therefore covers the following:

(8) (i) phrasal sisters of case assigners
(ii) their heads and specifiers (by percolation)

We add to this list attributive modifiers which receive case via percolation, as we explained earlier.

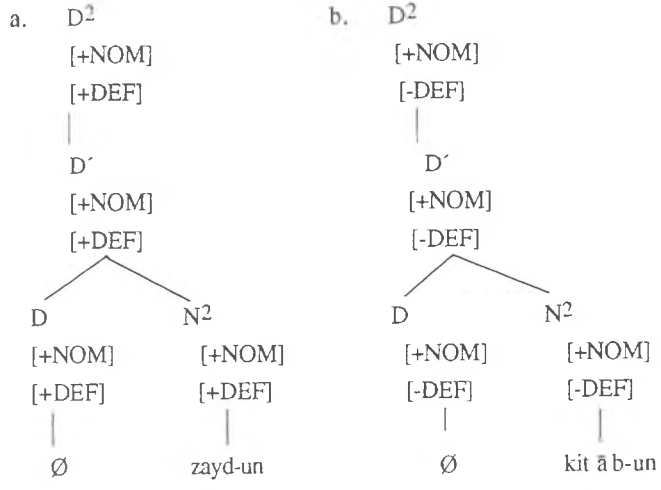
In fact, it is possible to employ the process of N-to-D movement used by Fehri (1988) with some modification. It is feasible to assume that movement of N-to-D is indeed crucially dependent on the existence of an article in D. Articles in STA are affixal, therefore if there is an overt article in D, N is required to move to D to satisfy the *affixation principle* (an affix needs an element to be attached to). This is in conformity with the analysis suggested in Ouhalla (1988) for Berber and Moroccan Arabic. However, if D is empty, no such movement is required. Since case and definiteness markings are allowed to percolate down to D and N2 in STA, movement of N-to-D can be viewed as a movement required to fulfil the *affixation principle*, not for the purposes of definiteness or case marking. This is illustrated by the following example from STA:

(9) a. ∂l-kit ā b-u
the-book-NOM



In the case of proper names, as with indefinite nouns, no movement is induced:

(10) a. zayd-un = Zayd
b. kit ā b-un = a book



It is worth pointing out here that in this analysis NOM case will be realized as -u on nouns in D-position and -un in N-position. However, not all nouns and proper nouns in N may have the tanwīn ending, as we discussed earlier with respect to the *gayer munsaref* nouns (i.e. diptotes). In other words, the generalisation is that tanwīn never occurs in D-position and may occur, depending on the type of noun, in N position. It is clear now why -u, -a, and -ıare in all instances associated with definiteness, whereas -un, -an and -in are only sometimes associated with indefiniteness. In the case of proper names which are definite inherently there will be a zero-article and hence no movement.

Evidence to support these assumptions emerges from the attachment of possessive pronouns, when only -u, -a, and -i appear:

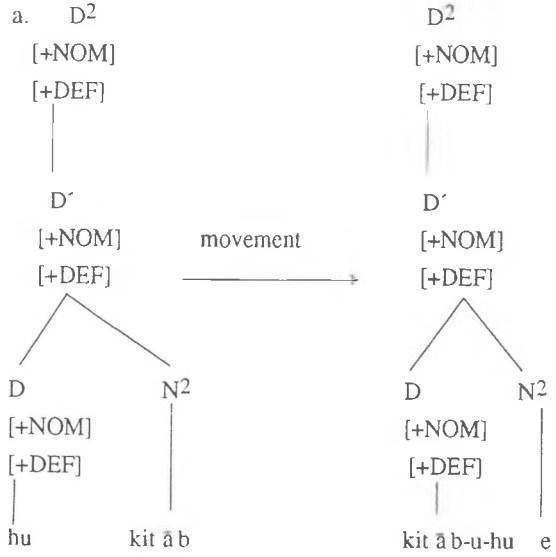
(11) a. kit ā b-u-hu ∂ž-žadīd-u
book-NOM-his the-new-NOM
"his new book"

b. kit ā b-a-hu ∂ž-žadīd-a
book-ACC-his the-new-ACC

c. kit ā b-i-hi ∂ž-žadīd-i
book-GEN-his the-new-GEN

These examples also require movement of N-to-D, this time for the attachment of the affixal possessive pronoun in D^3. The following structure is illustrative:

(12) a.

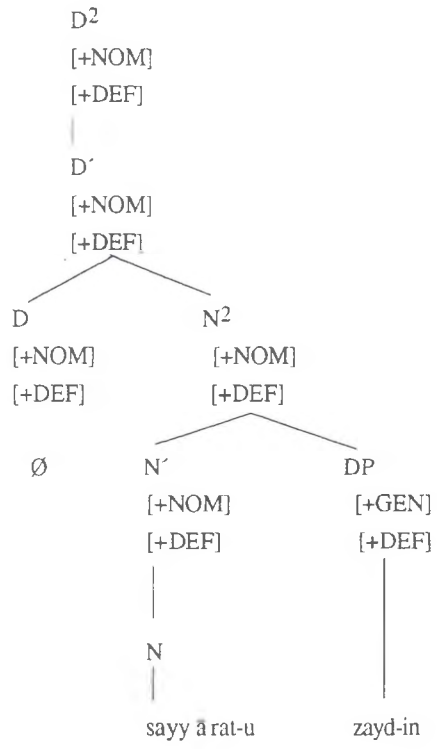


In construct-state constructions, however, the case-marking is realised as -u on nouns in N-position since the *tanwīn* and the genitive are in complementary distribution. This is another instance in which the tanwīn does not show up in N-position. In the light of this modified analysis, genitive constructions in STA do not require movement of N-to-D. Consider (13):

(13) sayy ā rat-u zayd-in
car-NOM Zayd-GEN
"Zayd's car"

(13) above, contra to Fehri's analysis, might be assigned the following structure:

(14)



In (14), movement of N is not permitted and case percolates down to both D and N2. Furthermore, this case (i.e. NOM) percolates down to the head noun *sayyāra* which, in turn, assigns its complement the genitive case under government. The movement of N to D is not permitted in (14) since this movement would leave the

complement NP caseless[4]. This violates the case filter since N-traces cannot assign case, hence movement of N-to-D is ruled out in construct-state constructions. In this way, the rightward assignment of case would also be preserved without the need to move things around redundantly. Ouhalla (1988) reaches the same conclusion about the structure of possessive DP in Berber. He suggests that non-movement of N-to-D is due to the lack of an affixal element in D which requires movement of N to satisfy his *affixation principle* (AP).

So far, the only element that may assign case is the lexical category N which is therefore considered a head governor. Functional heads such as the article *al-* and the possessive pronouns, however, have no effect on case-assignment and their headedness is motivated for the purposes of head-to-head movement in order to satisfy the affixation principle. Demonstratives (DEMs) in STA, like the attributive modifiers of N, are recipients of case via percolation. Hence, they are not case-assigners and accordingly not governors. Moreover, DEMs in STA are not affixal in nature and do not require head-to-head movement. These properties of DEMs show that their status as heads is not strongly motivated.

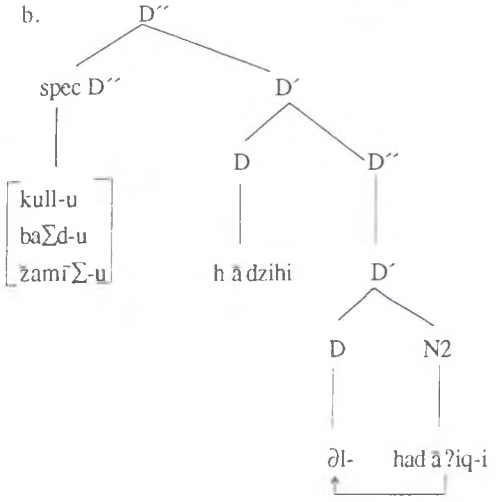
The fact that DEM can be preceded by certain quantifier DETs like kull "all, every", baΣd "some" and ž amīΣ "all, whole" offers two possibilities. One possibility would be for DEM to be placed in D-position with the quantifier as specifier, as follows:

(15) a. [kull-u / baΣd-u / žamīΣ-u] hadzihi ðl-had ā ʔiq-i

all/ some-NOM these-GEN the-gardens-GEN

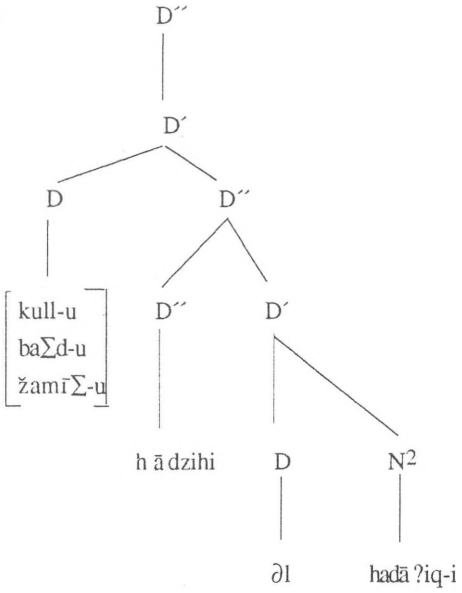
"All/ some (of) these gardens"

b.



In (15b) above, the noun *hadā?iq-i* "gardens" has to move to the lower D to satisfy the affixation principle. Since case percolates in STA, DEM as a head would have to be NOM in conformity with the case of the mother. Unfortunately, DEM is GEN and shows a distinct case from the mother. The assumption that a phrase like the one in (15) cannot have two specifiers suggests instead that the quantifier DET should be a head. It is clear that NOM case percolates down to the quantifier DET, and secondly, it is possible to argue that the quantifier DETs (i.e. kull, ba∑d, ž amī∑ ... ...etc.) have a *governing function* in that they assign genitive case to their complements. This supports their status as heads rather than specifiers. Accordingly, (15a) above would be configured differently as in (16):

(16)



In (16), the NOM case of D" trickles down to the head D (quantifier DET), then the head D itself assigns its complement D" GEN case which percolates to the head D (ART) and its specifier (DEM). The N *hadā?iq-i* moves to D to satisfy the affixation principle.

It is worth mentioning here that although the demonstrative element in (16) has no overt case, it must agree in case with the following noun. Evidence for this is provided by the dual DEMs which are marked for NOM by *ani* and for ACC and GEN by *ayni*. Consider the following:

(17) a. žā?a hādz-āni ðr-rażul-āni
came-(3rd.sg) these-two-NOM the-men-(two-NOM)

"These two men came in"

b. ra?ayt-u hādz-ayni ðr-raž ul-ayni
saw-(1st.sg) these-(two-ACC) the-men-(two-ACC)
"I saw these two men"

c. marart-u bi- hādz-ayni ðr-raž ul-ayni
passed-(1st.sg) by these-(two-GEN) the-men-(two-GEN)
"I passed by these two men"

In agreement with N, DEM is inflected for NOM in (17a) (i.e. *ani*), for ACC in (17b) (i.e. *ayni*) and for GEN in (17c) (i.e. *ayni*). This case agreement is the result of percolation of case to the head N and its specifier DEM. The fact that the quantifier DET may assign case under government promotes its status as a governor and hence as a head. DEM in STA, on the other hand, is not a case assigner and hence is not a governor. Moreover, DEM is not affixal in nature like ART and therefore does not require movement. Accordingly, DEM status as head is ruled out.

This conclusion highlights the GB assumption that functional as well as lexical elements are governors that may assign case. In this respect, the lexical head N and the functional head DET (quantifier DET) are governors that may assign case. The ART is a functional head that may not assign case and projects only for the purposes of head-to-head movement in order to satisfy the affixation principle. Hence, D which is occupied by ART might be thought of as a *head landing-site* as distinct from a head governor.

The quantifier DET is distinct from the other functional categories such as DEM and ART by the fact that it has major lexical properties. Quantifier DETs in STA are nominal in nature since they can be defined by al "the", and suffixed by the pronominal resumptive pronoun which is a specific property of major lexical categories. Furthermore, they can assign genitive case to their complements. Consider the following:

(18) a. ?ankara ðl-kull-u/ ðl-ba∑d-u/ ðl-žamī∑-u
denied the-all-NOM/the-some-NOM/the-all-NOM
w ðžd-a ðl-žawāhir-i
existence-ACC the-diamonds-GEN
"All/some (of them) denied the existence of the diamonds"

b. hadara ðl-afla kull-u/ba∑d-u/žamī∑-u
attended the-party all-NOM/some-NOM/all-NOM
ðl-?asātidzat-i
the-teachers-GEN
"All/some(of) the teachers attended the party"

c. fi kull-i/baʃd-i/ʒamīʃ-i ðl-?awqāt-i
in all-GEN/some-GEN/all-GEN the-times-GEN
"In all/some times"

d. ?aš-šawāri_-u kull-u-ha nazīfa
the-streets-NOM all-NOM-it clean
"All the streets are lit"

e. ra?ayt-u baʃd-a-hum
saw-(1st,sg) some-ACC-them
"I saw some of them"

In (18a) the quantifier DETs kull, baʃd and ʒamīʃ are defined by al. In (18b) they assign their complement GEN case under government. In (18d) and (18e) they are suffixed with a resumptive pronoun (*ha* "it, her" and *hum* "them"). These properties of the quantifier DETs kull, baʃd, and ʒamīʃ suggest that they have the major category feature ([+N]).

It is worth pointing out that the suffixation of pronominals to the quantifier DET forces them to occur appositively. In this case, the quantifier DETs, like in (18d) and (18e) above, can only occur postpositionally as in (19):

(19) a. ðr-riʒāl-u kull-u-hum
the-men-NOM all-NOM-them
"All men"

b. *kull-u-hum ð r-riʒāl-u
all-NOM-them the-men-NOM
"All men"

This appositive behaviour is shared by DEMs in STA, where they occur postpositionally. However, DEM is distinct from the quantifier DET in two respects: firstly, it cannot be suffixed by pronominals and secondly, it is unable to assign case. The fact that the quantifier DET, like N, may assign case and be suffixed by pronominals, provides further support for the treatment of the quantifier DET as a governor, and hence a head.

Not only the quantifier DETs in STA have major lexical properties, but also numerals. Numerals, like quantifier DET and N in STA, may be defined by al, and be suffixed by pronominals. Moreover, numerals themselves assign their complements GEN case. Consider these examples:

(20) a. ?ankar-a ðl-?awwal-u sariqat-a
denied(3rd,sg,m) the first-NOM stealing-ACC

ðl-žāwahir-i
the jewels-GEN
"The first denied stealing the jewels"

b. šhadtu ?arbaΣat-a ?awlād-in
saw(1st,sg) four-ACC children-GEN
"I saw four children"

c. hasal-a ?awwalu-hum w thanihi-hum
win(3rd,sg,m) the-first-them and the-second-them
Σala ðl-žā?ižat-i
at the-prize
"The first and the second of them won the prize"

In (20a) the NUM is defined by al and is NOM by default. In (20b) the verb sahadtu assigns the complement NP ACC case. This ACC percolates down to the NUM which itself assign GEN case to its complement. In (20c), NUM is suffixed by a pronominal *hum*.

These properties of NUM in STA suggest that it is a governor that may assign GEN case to its complement. This suggests that the functional categories NUM and quantifier DET, like the lexical category N in STA, may assign case, and hence are governors. Since they are governors they may be treated as heads. Furthermore, the attachment of pronominal suffixes certifies their major lexical property (i.e.[+N]).

This conclusion is in conformity with the GB assumption that functional as well as lexical categories may assign case under government.

3. Conclusion

Within the DP-analysis of STA, the notion of specifier-head agreement is missing for two reasons. First, nominal expressions in STA do not have the nominal AGR suggested for languages like English, Turkish and Hungarian, and consequently the parallel with verbal AGR is lost. In STA, D contains either the affixal element al which requires N-movement or the quantifier DET which requires no movement. Both of them show no sign of AGR, hence NP in STA has no AGR.

In view of this analysis, heads share features with both their mothers and modifiers. As governors, they assign features to elements in their domain and their existence determines the order of other items in the construct. Lexical categories like Ns assign their complements GEN case, hence they are governors. Functional categories, however, are of two types: those that may assign case such as quantifier DETs (kull, baΣd ...etc.) and those that cannot assign case such as DEMs and ARTs. This shows that functional elements such as quantifier DETs are governors and

accordingly heads. DEM and ART, on the other hand, are not governors, hence they are not heads, rather *head landing-sites* that project for the purposes of head-to-head movement. We make a distinction here between *heads* and *head landing-sites*. DEMs and ARTs can be considered as head landing-sites since they allow the movement of N to satisfy the affixation principle.

Functional elements such as quantifier DETs can be considered as governors since they can assign case. These governors in fact are distinct from the other functional categories by their lexical property of permitting incorporation of pronominal suffixes. It is this lexical property (i.e. being [+N]) of the quantifier DETs that might justify their status as governors, hence heads.

This analysis presents the following conclusions:

a) Zero-level categories divide into two types: those which have major features (here[+N]), and those which do not.

b) Zero-level categories with [+N] features are either lexical (i.e. N) or functional (i.e. quantifier DET, NUM). Both lexical and functional categories may assign case, whereas only lexical categories may assign _-roles. They may also move.

c) Zero-level categories without [+N] features (e.g.functional categories such as DEM & ART) never O-mark and never assign case (themselves). They can subcategorise, like any other zero-level category. They are landing-sites for movement.

NOTES

1 The *modifier maximality constraint* states that:

every non-head term in the expansion of a rule must itself be a maximal projection of some category. (Radford 1988: 263)

2 The definite article al "the" in STA as well as in SA for phonological reasons assimilates to the first consonant (either dental or palatal) of the attached noun as in:

1) a.	al + raʒul	∂r-raʒul
	the-man	the-man
b.	al + naher	∂n-naher
	the-river	the-river

3 Here, we agree with J. Ouhalla (1988) with respect to the assumption that articles and possessive pronouns in STA and in Berber have an affixal nature and have to satisfy the *affixation principle* (AP). Hence, movement is required.

4 This analysis derives further support from other languages like Hebrew, Moroccan Arabic and Syrian Arabic (SA). In these languages the attachment of the definite article

to the head noun of a construct-state construction requires the movement of N-to-D. This leaves the complement NP caseless violating the case-filter. Therefore, it needs a governor to assign case assuming that N-traces cannot assign case. This necessitates the insertion of a preposition as follows:

Hebrew 1) a. beit ha-mora (Borer 1984)
house the-teacher

b. ha-bayit *(shel) ha-mora
the-house of the-teacher

Moroccan Arabic 2) a. daar ∂l-muddarris (Ouhalla 1988)
house the-teacher

b. ∂l-daar *(dyal) ∂l-muddarris
the-house of the-teacher

SA 3) a. beit ∂l-?stāz
house the-teacher

b. ∂l-beit *(taba∑) ∂l-?stāz
the-house of the-teacher

This proves that assignment of genitive case is structural. Furthermore, all these facts suggest that there is no nominal AGR in NPs in STA and SA contrary to the facts of English NPs as suggested by Abney (1987).

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