Abstract

This paper aims to propose an HPSG analysis for simple and construct-state noun phrases in Modern Standard Arabic (MSA). To the best of my knowledge, there are no major HPSG analyses of MSA noun phrases (NPs). A parallel phenomenon in Hebrew has been discussed quite extensively in the same framework by Wintner (2000). Most of the discussion will be devoted for the construct-state noun phrase in which the order of the elements within it is NP AP PP. Three analyses will be outlined within the HPSG framework: the extra complement analysis, the special complement analysis, and the head-adjunct-complement analysis. These analyses will be evaluated and it will be concluded that the last analysis seems to be the best and the most promising approach to Arabic NPs.

1. Data

Simple MSA noun phrases can be definite or indefinite. Definite nouns are prefixed with the definite article (*al-*) -glossed 'DEF'- (see, for example, Ouhalla, 1991; Fassi Fehri, 1993; Ryding, 2005; Benmamoun, 2006, among others), and indefinite nouns are suffixed with the indefinite marker (-n) -glossed 'INDEF'- (see, for example, Ryding, 2005, among others) - as in (1).

(1) a. ʔal-kitaab-u
DEF-book-NOM[1]
'The book'

b. kitaab-u-n
book-NOM-INDEF
'a book'

MSA also has construct state nouns consisting of a head noun directly followed by a possessor. The head/construct noun can carry neither the definite article (*al-*) as in (2a), nor the indefinite marker (-n) as in (2b) (Ouhalla, 1991; Fassi Fehri, 1993; Benmamoun, 2006; Ryding, 2005), but the form of a modifying adjective (which follows the possessor) shows that the nouns agrees with the possessor in definiteness.

↑ I am grateful to reviewers and audience at HPSG22 in Singapore for their helpful comments and discussion. Remaining flaws are purely my fault.

[1] The nominative case is the citation form in MSA.

(2) a. [(*al)-kitaab-u T-Taaliba-t-i]
DEF-book.SG.MASC-NOM DEF-student.SG-FEM-GEN
l-jadiid-u
DEF-new.SG.MASC-NOM
'the female student's new book'

b. [kitaab-u-(*n) Taaliba-t-i-n]
book.SG.MASC-NOM-INDEF student.SG-FEM-GEN-INDEF
jadiid-u-n
new.SG.MASC-NOM-INDEF
'a (female) student's new book'

Adjectives in MSA agree in definiteness, gender, number, and case with the noun they modify. The form of the adjective in (2a) shows that the noun is definite although it does not bear the definite article, and the form of the adjective in (2b) shows that the noun is indefinite although it does not have the indefinite suffix. It should also be noted that the adjective in both examples modifies the head noun but not the possessor. This is because of the gender agreement between the adjective and the head noun.

An adjective cannot precede the possessor as the following example demonstrates:

(3) kitaab-u (*l-qayyim-u) l-muʔallifa-t-i
book.SG.MSAC-NOM DEF-valuable DEF-author.SG-FEM-GEN
l-qayyim-u
DEF-valuable.SG.MASC-NOM
'the author's valuable book'

In addition to the attributive adjective and the possessor, the construct-state noun can have a PP or a clause as a complement. Consider the following example showing a PP complement:

(4) kitaab-u l-muʔallifa-t-i
book.SG.MSAC-NOM DEF-author.SG-FEM-GEN
l-qayyim-u fii n-naHw-i
DEF-valuable.SG.MASC-NOM in DEF-syntax-GEN
(*l-qayyim-u)
DEF-valuable.SG.MASC-NOM
'the erudite author's valuable book about syntax'

Any such complement appears after the possessor and the adjective. This means that the order has to be NP AP PP. If a relative clause is used, it will occur after the ordinary complement as in (5) below:

(5) kitaab-u siibawayh-i l-qayyim-u fii n-naHw-i
book-NOM Siibawaih-GEN DEF-valuable-NOM in DEF-syntax-GEN
[ʔallaðii ʔahdayta-nii ʔiyyaah**]**
that.SG.MASC give present-me it
'Siibawaih's valuable book about syntax which you gave me as a present'

The examples in (4) and (5) show the most important facts in this paper and hence they will be the central focus of the analysis.

As for the complement selection possibilities of definite and indefinite nouns, they both allow a complement (PP) following the attributive adjective (just like construct-state nouns above) as shown in the following examples:

(6) a. qaraʔ-tu kitaab-a-n jadiid-a-n fii
read.PAST-1SG book-ACC-INDEF new-ACC-INDEF in
n-naHw-i
DEF-syntax-GEN
'I read a new book about syntax'

b. qaraʔ-tu l-kitaab-a l-jadiid-a **[**fii
read.PAST-1SG the-book-ACC DEF-new-ACC in
n-naHw-i**]**
DEF-syntax-GEN
'I read the new book about syntax'

These differences between definite and indefinite nouns on the one hand, and construct state nouns on the other hand will be captured by appropriate constraints in the following section.

2. Analysis

2.1. Basics

I will begin with the treatment of possessors, and the constraints on the three types of noun (def, indef, and construct). After that, I will discuss the status and position of attributive adjectives.

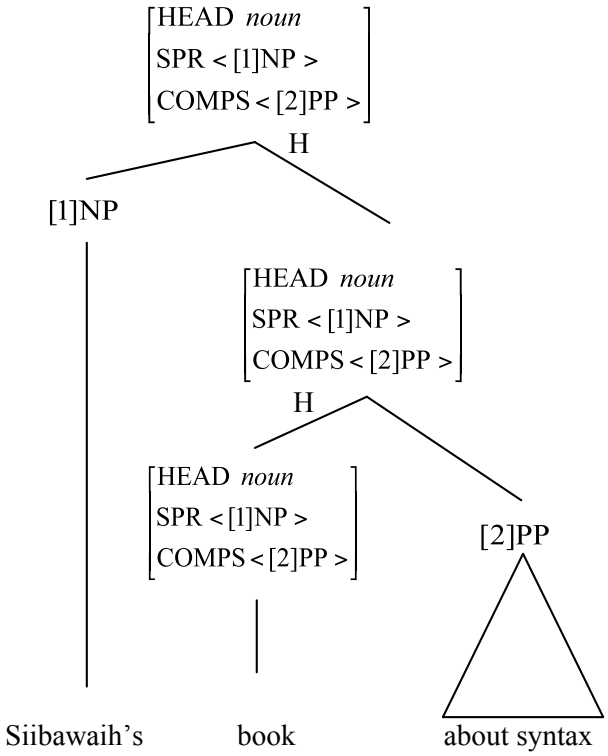
2.1.1 The possessor

In HPSG analyses (Sag, Wasow and Bender, 2003), possessors in English are analysed as realisations of the SPR (SPECIFIER) feature, giving categories like (7) and structures like (8).

(7)

$$\begin{bmatrix} \text{HEAD } \textit{noun} \\ \text{SPR} < [1] > \\ \text{COMPS} < [2] > \\ \text{ARG-ST} < [1]\text{NP}, [2]\text{PP} > \end{bmatrix}$$

(8)



Unlike English, I treat the possessor in MSA as an extra complement of the head noun rather than a realisation of the SPR feature, as is clear from the COMPS' list of the head daughter.This position is taken by Borsley (1989, 1995) for Welsh and Arabic, and by Wintner (2000) for Hebrew. Borsley based his arguments on the fact that possessors always follow the associated noun and can be realised as clitics like the objects of verbs (9a) and prepositions (9b).

(9) a. fahd-un raʔaa-haa
Fahd-NOM see.PAST.3SG.MASC-her
'Fahd saw her.'
b. maʕa-haa
with-her
'with her'

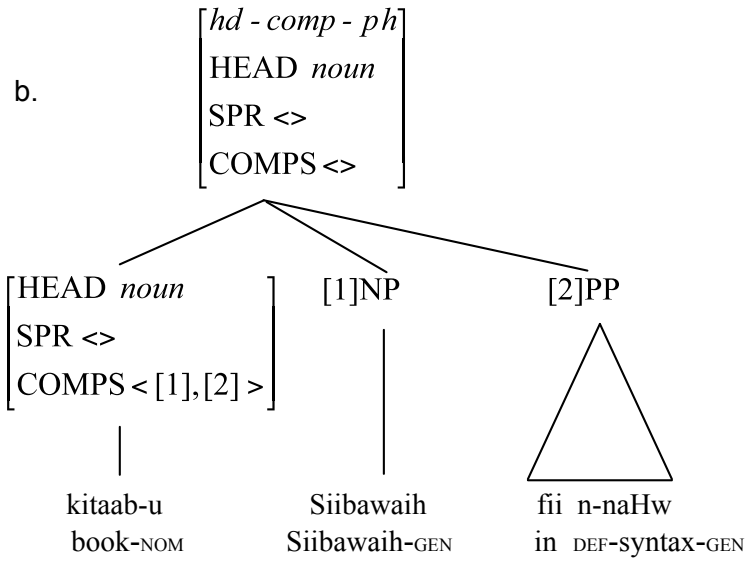
With verbs and prepositions clitics realise what is an uncontroversial complement. This suggests they also realise a complement with nouns and hence that possessors are complements. An example where a possessor is realised as a clitic is shown below:

(10) kitaab-u-hu fii n-naHw-i
book-NOM-her in DEF-syntax-GEN
'his book about syntax'

The following tree represents the structure of an example with an ordinary possessor.

(11) a. kitaab-u siibawayh-i fii n-naHw-i
book-NOM Siibawaih-GEN in DEF-syntax-GEN
'Siibawaih's book about syntax'

b.

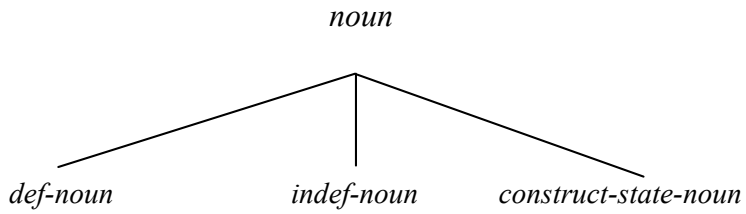


Next, I discuss the constraints to which the subtypes of the type *noun* are subject in the following section.

2.1.2 Constraints on subtypes of nouns

The following is the type hierarchy of some nouns (the type hierarchy not only includes *def-noun* and *indef-noun*, but also *construct-state-noun* subtype as seen in (12):

(12)



We can have the following constraints for each subtype:

(13)
def-noun → [DEF +]
indef-noun → [DEF -]
construct-state-noun → [DEF *boolean*]

The type *noun* has the subtypes *def-noun, indef-noun,* and *construct-state-noun*. Each subtype is associated with some features. The subtype *def-noun* is [DEF +], which means that the noun is definite and marked with the definite article. As for the subtype *indef-noun*, it has the feature [DEF -], which means that the noun is indefinite and marked with the indefinite marker. The last subtype of the type *noun* is *construct-state-noun*, which is associated with the features [DEF *boolean*]. The feature [DEF *boolean*] indicates that the construct noun is unspecified for definiteness and it could be [DEF +] or [DEF -], but this does not mean that the noun is morphologically marked as such. The morphological rules that introduce the definite prefix and the indefinite suffix must not apply to construct-state-nouns. The construct noun can be definite without the attachment of the definite article or can be indefinite without the indefinite marker as the data show in (2) above.

The type *noun* is subject to the following constraints:

(14)

$$noun \rightarrow \begin{bmatrix} \text{SYNSEM} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} noun \\ \text{DEF}\,[1] \\ \text{NUM}\,[2] \\ \text{GEND}\,[3] \\ \text{CASE}\,[4] \end{bmatrix} \\ \text{ARG-ST}\,[5] < (\text{NP}) > \oplus [6] \\ \text{DEPS}\ [5] \oplus \text{AP}^* \oplus [6] \end{bmatrix} \end{bmatrix}$$

$$noun \rightarrow \begin{bmatrix} COMPS\,[2] - list\,(\,noncanon\text{-}ss\,) \\ \text{DEPS}\ [2] \end{bmatrix}$$

The AGR-ST list involves two lists. The first list consists of NP or nothing (since the possessor is optional) and the second list is a (real) semantic argument such as PPs or clauses. The optionality of the possessor is indicated by the use of the parentheses. Only construct-state nouns have possessors as shown in (2) above.

The other member of the ARG-ST list is tagged by number [6], which can be a prepositional phrase or a clausal complement. The possessor and the other member of the ARG-ST list also appear on the DEPS list. In addition, following Bouma, Malouf, and Sag's (2001) approach to adverbials as will be discussed in § 2.2 below, APs appear on the DEPS list after the possessor (if there is one) and before any ordinary complements. This constraint plus the one, discussed below, which says that the value of COMPS is DEPS ensure that optional adjectives are complements. The asterisk sign (*) on AP means that we can have any number of APs (including none).

The second constraint says that the value of COMPS is DEPS minus any noncanonical-*synsem* objects in the DEPS list.[2] I am assuming the Miller and Sag's (1997) approach to clitics in which they are affixes realizing an affixal *synsem* object. The view in Miller and Sag and elsewhere is that *synsem* objects may be canonical, in which case they will appear in COMPS lists, or noncanonical, in which case they will not appear

[2] This would have to go if affixal *sysnems* appear in COMPS lists. Instead, the constraint of head-comp-phrases will have to ensure that only canonical *synsems* are realized as complements.

there. Noncanonical synsem objects include unbounded dependency gaps and arguments realized as affixes. If a DEPS list contains a canonical possessor, it will also appear in the COMPS list. If it contains an affixal possessor, it will not appear in the COMPS list, but the noun will have the appropriate suffix. I will assume the same sort of approach as Miller and Sag (1997), as I will do for definite and indefinite suffixes below.

The first constraint in (13) above also says that the value of HEAD feature is a feature structure that has a number of agreement features: DEF, NUM, GEND, and CASE. The constraint guarantees that the values of those features are identical to the values of the similar features of the modifying adjectives. This is— as I mentioned in §1 above —because adjectives in MSA agree in number, gender, case, and definiteness with the noun they modify as the following examples demonstrate:

(15) a. ʔT-Taalib-u l-mujtahid-u
DEF-student.SG.MASC-NOM DEF-diligent.SG.MASC-NOM
'the diligent (male) student'

b. ʔT-Taalib-aat-u l-mujtahid-aat-u
DEF-student-PL.FEM-NOM DEF-diligent-PL.FEM-NOM
'the diligent (female) students'

The subtype *indef-noun* is subject to the following constraint:

(16)

$$\textit{indef-noun} \rightarrow \begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } F_{indef}[1] \\ \text{I-FORM}[1] \end{bmatrix} \\ \text{SYNSEM} \begin{bmatrix} \text{HEAD}[\text{DEF} -] \\ \text{ARG-ST} \ \neg < \text{NP...} > \end{bmatrix} \end{bmatrix}$$

The constraint in (16) contains MORPH and SYNSEM features. The MORPH feature has two features: FORM and I-FORM, which are taken from Miller and Sag (1997). The I-FORM is the inflectional form of the noun without the indefinite marker. A noun will have various values for I-FORM depending on its case and whether it is singular or plural. The value of FORM is the noun suffixed with the indefinite marker. The function F_{indef} adds the indefinite marker to the inflectional form of the noun. As for the SYNSEM feature, it has the indefinite marker because it is indefinite. The ¬ <NP…> stipulation ensures that a noun bearing the indefinite marker does not have an ARG-ST list whose first member is a possessor. This means that the indefinite noun can have an ARG-ST list which may contain other members such as PPs and clausal complements but not a possessor.

The subtype *def-noun* is subject to the following constraint:

(17)

$$\textit{def-noun} \rightarrow \begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } F_{def}[1] \\ \text{I-FORM}[1] \end{bmatrix} \\ \text{SYNSEM} \begin{bmatrix} \text{HEAD}[\text{DEF} +] \\ \text{ARG-ST} \neg < \text{NP...} > \end{bmatrix} \end{bmatrix}$$

Again the features FORM and I-FORM in (17) are not identified. The function F_{def} adds the definite article to a basic form of the noun which marks it as definite. Hence, the value of DEF feature is [+]. The ¬ <NP…> stipulation ensures that a noun bearing the definite article does not have an ARG-ST list whose first member is a possessor. This means that the definite noun can have an ARG-ST list which may contain other members such as PPs, but not a possessor as shown in (6b) and (2a) above.

The subtype *construct-state-noun* is subject to the following constraint:

(18)

construct-state-noun →

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM}[1] \\ \text{I-FORM}[1] \end{bmatrix} \\ \text{SYNSEM} \begin{bmatrix} \text{HEAD}[\text{DEF}[1]] \\ \text{ARG-ST} < \quad \text{NP} \quad ... > \\ \qquad\qquad \begin{bmatrix} \text{DEF}[1] \\ \text{CASE } gen \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

The constraint in (18) says that the values of the FORM and I-FORM features are identified. This ensures that a construct-state-noun has neither a definite prefix nor an indefinite suffix. Furthermore, the constraint guarantees that the construct-state noun has an ARG-ST list whose first member is a possessor, which is genitive and has the same value for DEF as the head noun. It thus requires definiteness agreement between the head noun and the possessor.

In the following sections. I will be concerned with how attributive adjectives should be analyzed and especially how they can be correctly positioned after possessors and before ordinary complements.

2.2. Attributive adjectives as complements

Attributive adjectives are standardly analysed as modifiers combining with a nominal constituent to form a larger nominal constituent. It is fairly easy to apply this approach to Welsh and Persian (see Samvelian, 2007, for more

details in Persian) in which attributive adjectives precede both possessors and ordinary complements. Take the following example for Welsh in (19):

(19) llyfr newydd Megan am gystrawen
book new Megan about syntax
'Megan's new book about syntax' Borsley (pc)

Therefore, it can be assumed that adjectives modify nouns and that the result combines with whatever complements it requires**.**

If we propose the adjunct/modifier analysis for MSA, it will run into the problem of ordering the adjective between the possessor and the ordinary complements as in the following example:

(20) maqaal-u l-kaatiba-t-i l-jayyid-u
article-NOM DEF-writer-FEM-GEN DEF-good-NOM
ʕani l-ʔirhaab-i
about DEF-terrorism-GEN
'the writer's good article about terrorism'

It is not clear how the adjective *l-jayyid* 'the good' can be ordered in between the possessor *al-kaatibati* 'the writer' and the PP complement *ʕani l-ʔirhaabi* 'about the terrorism' in an adjunct/modifier analysis. If attributive adjectives are noun modifiers they will precede possessors. If they are NP modifiers they will follow ordinary complements, which are not the right positions of attributive adjectives in MSA as demonstrated in examples (3) and (4) above.

Consequently, a different approach is necessary for MSA. One possibility is that attributive adjectives are optional extra complements since they are preceded and followed by elements which are analyzed as complements (possessors and ordinary complements, respectively). Treating adjectives as extra complements is rather like the approach taken to verbal adjuncts (particularly postverbal adverbs) in Bouma, Malouf, and Sag (2001). They argue that in English, postverbal adjuncts are extra complements of the verb. However, to distinguish them from ordinary arguments such as PP, we suggest that adjectives like English postverbal adverbs in Bouma et al.'s analysis do not appear in ARG-ST lists, but appear in DEPS lists and COMPS lists, as I indicated in § 2.1.2 above.

To ensure that attributive adjectives do not appear as adjuncts modifying N or NP in head-adjunct structures, we could impose a restriction on the type *head-adjunct phrase* excluding a nominal head, as in the following constraint:

(21) *head-adjunct-ph* $\rightarrow \left[\text{HEAD} \neg \begin{bmatrix} noun \\ \text{LEX} + \end{bmatrix}\right]$

This says that a *head-adjunct-ph* cannot be a noun that is [LEX +]. Thus, a nominal head is excluded. However, this will only prevent adjectives from modifying a noun and coming before the possessor. We also need to prevent adjectives from modifying NP and coming after a complement. Probably the best thing to do is to assume that adjectives are [MOD *none*] and hence they don't modify anything.

There is one important objection to this analysis. Treating attributive adjectives as extra complements makes them different from relative clauses (assuming the latter are adjuncts). However**,** they are like relative clauses in reflecting the definiteness of the modified noun. To remind the reader of how adjectives reflect the definiteness of the modified noun, as shown in examples (15) and (2) above, I give the following examples:

(22) a. ʔal-walad-u ð-ðakiyy-u
DEF-boy.SG-NOM DEF-clever.MASC.SG-NOM
'the clever boy'

b. walad-u-n ðakiyy-u-n
boy.SG-NOM-INDEF clever.MASC.SG-NOM-INDEF
'a clever boy'

Adjectives modifying a definite NP appear with the definite article while adjectives modifying an indefinite NP appear with an indefinite marker. The definiteness agreement of relative clauses with the associated nominal is shown on the head of the relative clause (the complementizer). Relative clauses modifying a definite NP are introduced by a complementizer whereas relative clauses modifying an indefinite NP lack a complementizer as the following examples show:

(23) a. raʔay-tu r-rajul-a *(llaðii) qaabal-tu-hu
see.PAST.1SG DEF-man-ACC that.SG.MASC meet.PAST-1SG-him
bi-l-ʔams
in-DEF-yesterday
'I saw the man whom I met yesterday'

b. raʔay-tu rajul-a-n (*llaðii) qaabal-tu-hu
see.PAST.1SG man-ACC-INDEF that.SG.MASC meet.PAST-1SG-him
bi-l-ʔams
in-DEF-yesterday
'I saw a man whom I met yesterday'

In the following section, I will propose a different approach in which a possessor is treated differently.

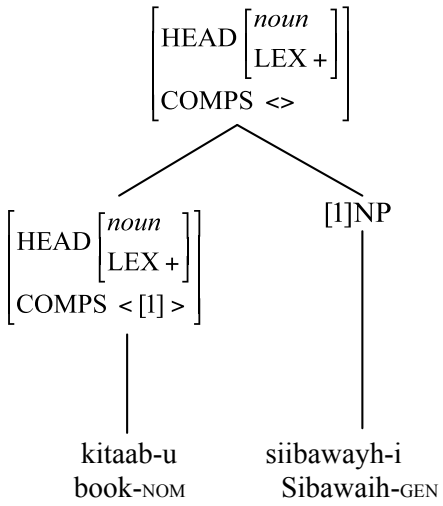
2.3. Possessors as special complements

A second way to ensure the correct positioning of adjectives is to assume that they modify a noun but to treat possessors as special complements with which the noun combines to form a complex noun. This requires a special type, which might be called a construct-state-noun, subject to the following constraint:

(24) *c-s-n*(*oun*)→ $\begin{bmatrix} \text{HEAD}[\text{LEX} +] \\ \text{COMPS}[3] \\ \text{DTRS} < [1] \begin{bmatrix} \text{HEAD } noun \\ \text{COMPS} < [2] > \oplus [3] \end{bmatrix}, [2]\text{NP}[\text{CASE } gen] > \\ \text{HD - DTR}[1] \end{bmatrix}$

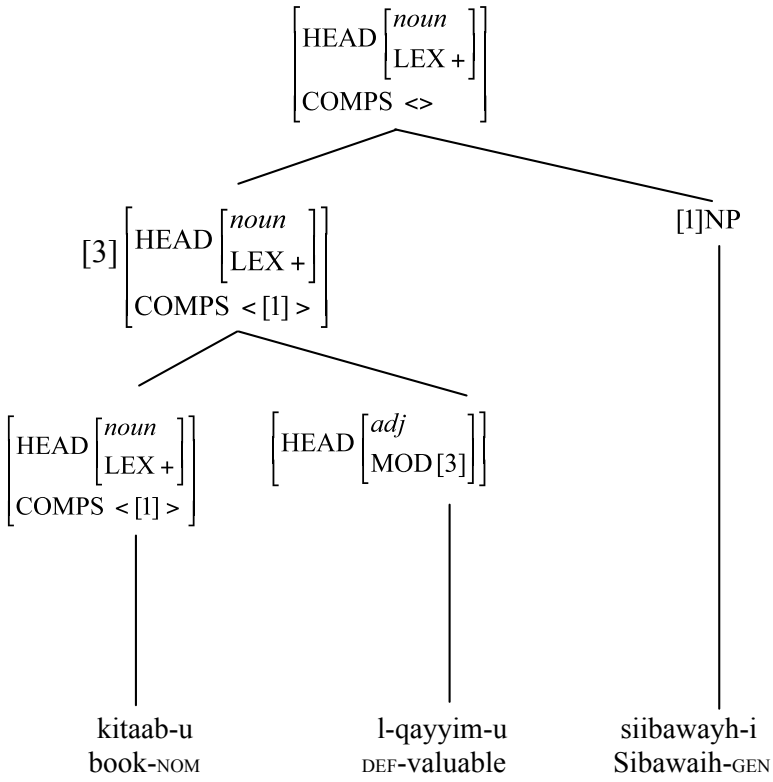
The constraint states that a construct state noun is [LEX +], and has a nominal head daughter and a genitive NP non-head daughter which is the first item on the COMPS list of the head and that the COMPS value of the phrase is identical to the remainder of the head's COMPS list. This will give structures like the following in (25) for the example in (5) above (the tree shows the structure of the head noun and the possessor only):

(25)



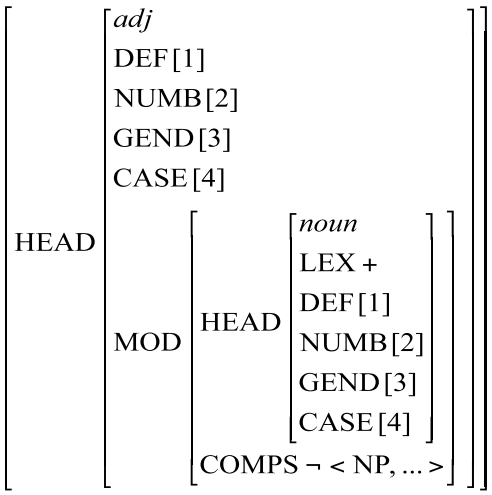
If there is an adjective modifying the head noun, it will be able to combine with a noun either before (as in the structure in (26) which is grammatical for Welsh and Persian, but not for MSA) or after the possessor.

(26) *



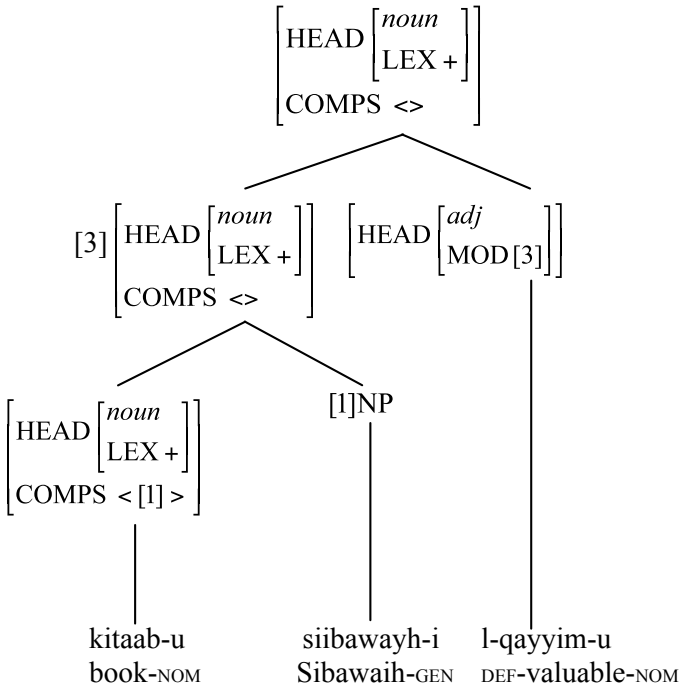
To prevent an adjective modifying the head noun and intervening between the head noun and the possessor, we could stipulate that adjectives are [MOD N [COMPS ¬ <NP, …>]] so that they can only modify nouns which do not require a nominal complement (possessor). So, the constraint on adjectives will look like the following:

(27) *adj* →



With the constraint in (27), the grammatical version of the structure in (25) can be licensed in (28):

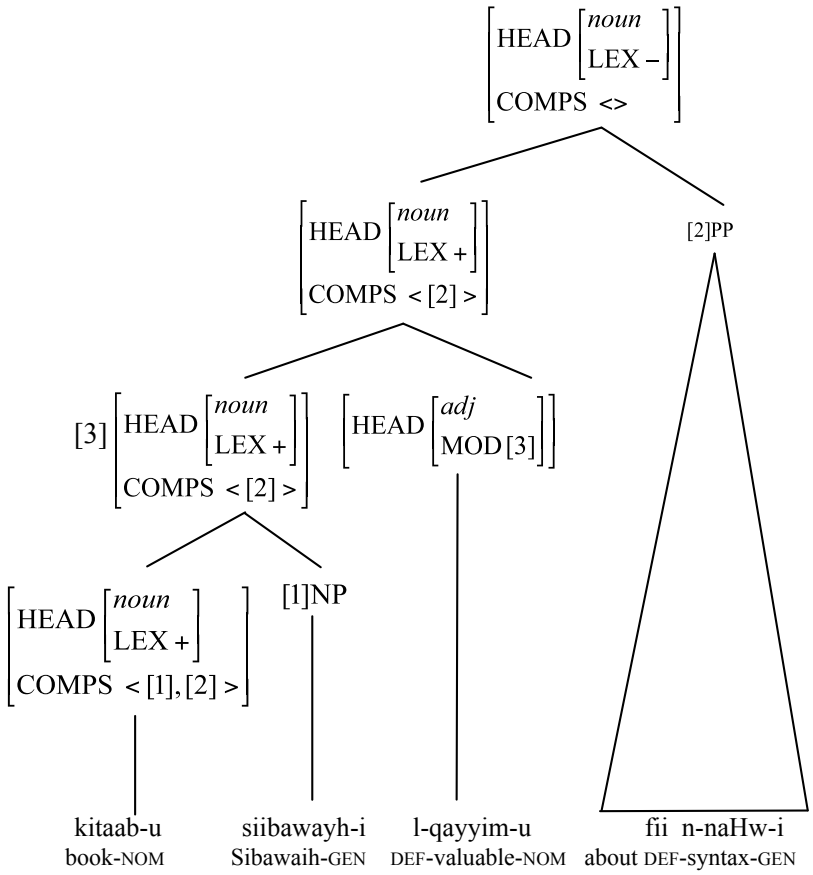
(28)



Given the treatment of the possessors, we will have structures like the following in (30) for an example with a possessor**,** an adjective**,** and a PP complement given in (5) above repeated here for convenience (without the relative clause) in (29):

(29) kitaab-u siibawayh-i l-qayyim-u fii n-naHw-i
book-NOM Siibawaih-GEN DEF-valuable-NOM in DEF-syntax-GEN
'Siibawaih's valuable book about syntax'

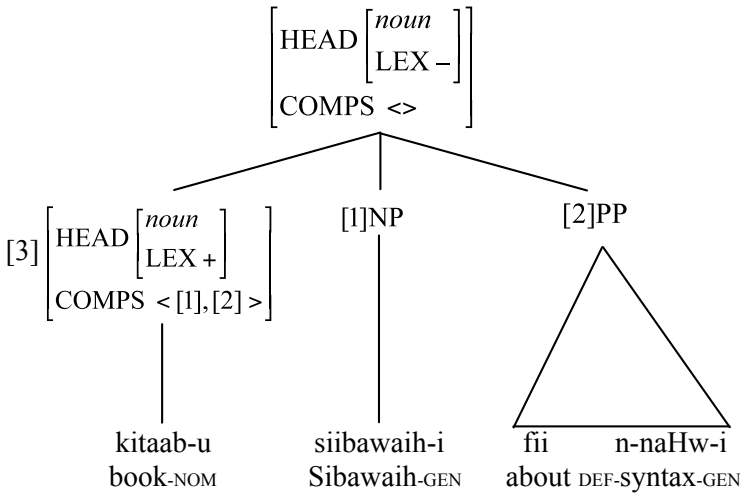
(30)



The combination of the head noun and the possessor is licensed by the constraint in (24) above, and the combination of the head noun and the PP complement is licensed by the head-complement-phrase. The combination of construct state phrase and adjective is licensed by the constraint on head-adjunct structures.

However, a question arises as to what rules out a structure like the following (without the adjective):

(31)



We should rule out (31) because we want to avoid two structures for unambiguous expressions. Since (31) is an ordinary head-complement-phrase in which the noun is [COMPS <NP, …>], We can stipulate that a nominal head of a head-complement-phrase is [COMPS ¬ <NP, …>]. This ensures that the first member of the COMPS list is not a possessor. Thus, possessors are not analysed as ordinary complements and (31) is ruled out.

This analysis is quite complex since it not only needs the special treatment of possessors but also needs a stipulation on adjectives to prevent them combining with a noun before it combines with a possessor and a stipulation to prevent possessors being analysed as ordinary complements. So, I reject this analysis, and I will go on to suggest a third approach in the next section.

2.4. Head-adjunct-complement analysis

Kasper (1994) has proposed that heads, adjuncts, and complements may be sisters. This permits a simple account of examples in which a head and a complement are separated by an adjunct.

(32) a. He [went **last night** to the cinema].
b. She [talked **incessantly** about syntax].
c. Sandy [said **yesterday** that he would be here].

In (32), we see in all the bracketed VPs that the verbs and their complements are separated by an adjunct. In (32a), *Last night* is an adjunct and *to the cinema* is a complement. In (32b), *incessantly* is an adjunct and *about syntax* is a complement. In (32c), *yesterday* is an adjunct and *that he would be here* is a complement. MSA can have similar examples where the

verbs and their complements are separated by an adjunct, as shown in the following examples:

(33) a. takallam-tu biwuDuH-i-n ʕani l-muškilat-i
talk.PAST.1SG clearly-GEN-INDEF about DEF-problem-GEN
'I talked clearly about the problem'

b. ðahab-tu bi-l-ʔams ʔilaa l-maʕraD-i
go.PAST.1SG in-DEF-yesterday to DEF-gallery-GEN
'I went yesterday to the gallery'

In this approach, I will propose that nouns appear in head-adjunct-complement structures, in which the head has both adjuncts and complements as sisters. These require something like the following constraint:

(34) *head-adjunct-complement-phrase* →

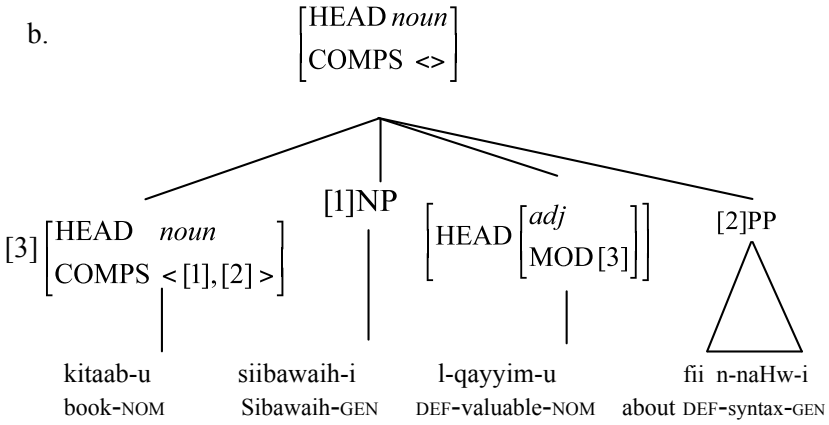
$$\begin{bmatrix} \text{DTRS} < [1] > \oplus \textit{list}\,([\text{SS}[\text{MOD}[2]]) \oplus < [\text{SS}[3]], .. [\text{SS}[n]] > \\ \text{HD - DTR}\,[1] \begin{bmatrix} \textit{word} \\ \text{SS}[2][\text{COMPS} < [3], ... [n] >] \end{bmatrix} \end{bmatrix}$$

This says that the head-adjunct-complement-phrase has a head daughter and two lists of non-head daughters. The first list is optional adjunct daughters whose MOD value is identical to the value of SYNSEM in the head daughter. The second list is complement daughters whose SYNSEM values are identical to those in the COMPS value of the head daughter. It should be noted that (34) is not only relevant to NPs. Probably it is relevant to VP's as well given examples like (32) for English and (33) for MSA above.

The constraint in (34) will allow structures like the following in (35b) for the example in (35a):

(35) a. kitaab-u siibawayh-i l-qayyim-u fii
book-NOM Siibawaih-GEN DEF-valuable-NOM in
n-naHw-i
DEF-syntax-GEN
'Siibawaih's valuable book about syntax'

b.



The order NP AP PP can be ensured by LP constraints since these elements are sisters.

Having allowed nouns to appear in head-adjunct-complement structures, we need to exclude them from head-adjunct structures in order to avoid structures where an adjective appears between the head noun and the possessor. The obvious approach to do this is with the following constraint:

(36) *head-adjunct-ph* → ¬ [HEAD [noun, LEX +], COMPS < NP, ... >]

This says that a head-adjunct-phrase cannot be a noun that requires an NP complement (i.e. a possessor). It is [LEX +] because we need to allow the head to be an NP (a [LEX -] constituent); this is what we have with relative clauses as they appear after the ordinary complement as in the example given in (5) above and repeated here for convenience in (37).

(37) kitaab-u siibawayh-i l-qayyim-u fii n-naHw-i
book-NOM Siibawaih-GEN DEF-valuable-NOM in DEF-syntax-GEN
[ʔallaðii ʔahdayta-nii ʔiyyaah**]**
that.SG.MASC give present-me it
'Siibawaih's valuable book about syntax which you gave me as a present'

The analysis in § 2.4. above seems simpler as it only needs one stipulation. The *head-adjunct-complement-phrase* is needed anyway for the examples in (30). We just need to stipulate that nouns cannot appear in head-adjunct structures. Therefore, I conclude that it is the best approach for Arabic NPs.

3. Conclusion

In this paper, I have presented the facts about MSA simple and construct-state noun phrases**.** I have provided an account of the definite and indefinite affixes, capturing the fact that they do not appear with construct nouns although the latter may be definite or indefinite. I have shown that the order of the elements within the construct-state noun phrases is NP AP PP. In addition, I have outlined three analyses within HPSG. The first analysis treats possessors and attributive adjectives as extra optional complements. However, there is an objection to this analysis as it treats adjectives differently from relative clauses and thus misses the similarities, one of which is that both adjectives and relative clauses reflect the (in)definiteness of the associated nominal. Therefore, assuming that relative clauses are adjuncts selecting the nominal that they combine with through their MOD feature suggests that adjectives should be analysed as adjuncts as well. The second analysis treats possessors as special complements with which a noun combines before it combines with anything else to form a complex noun. I reject this analysis as it has a number of stipulations. It needs the special treatment of possessors. It also needs a stipulation on adjectives to prevent them combining with a noun before it combines with a possessor, and a stipulation to prevent possessors being analysed as ordinary complements. In the third analysis, I have proposed that nouns appear in head-adjunct-complement structures, in which head has both adjuncts and complements as sisters. This is not only needed for noun phrases but it is also needed for verb phrases. I have only stipulated that head-adjunct-phrases cannot be headed by a noun that requires an NP complement (i.e. a possessor). As the third analysis has only one stipulation, it makes it simpler, and therefore, I conclude that it is the best approach for Arabic NPs.

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