The Syntactic Structure of an Introductory PP in Standard Arabic: A Non-Transformational Approach

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Abstract

The paper discusses the structure of a particular prepositional phrase (PP) that is commonly used in Standard Arabic, especially in formal contexts. This PP is used when a speaker wants to start an utterance with an expression that denotes a general observation or impression without referring to its source. It can be described as 'an introductory PP'. It consists of the preposition *min* and its complement like the PP *min al-mutawaqqaʕ* which expresses a meaning similar to 'it is expected that ...'. Syntactically, the occurrence of this introductory PP, compared with other PPs, is distinct in that it is restricted to three structural patterns. Although the use of this PP is common, its structure is still not studied thoroughly in the literature. Hence, the paper aims to contribute to the current linguistic research by exploring the structure of this introductory PP. The paper offers both a data-based description and a non-transformational analysis of the relevant linguistic properties of this PP and the constructions in which it occurs. The theoretical framework that is used here is Head-driven Phrase Structure Grammar.

Keywords: *min*, introductory, Standard Arabic, PP, non-transformational, HPSG

1. Introduction

When there is a need to introduce a sentence in Standard Arabic (SA, henceforth) objectively with a phrase expressing a (general) neutral observation, speakers, mostly in formal contexts (e.g., mass media), tend to use a particular type of prepositional phrase (PP) headed by the preposition *min* in its partitive sense (Ryding, 2005). The use of this type of PP is very common and it is referred to in the relevant literature as an introductory PP. Interestingly, the syntactic occurrence of this PP is distinct from that of most PPs in that it is restricted to three structural patterns only. It is overtly either followed by a verbal noun (i.e., a noun in the *maṣdar* form), a complementiser phrase headed by *ʔan* (that), or another type of complementiser phrase which is headed by *ʔanna* (that).

Although the use of this introductory PP is common in SA, its syntactic structure – as far as the researcher knows – is still not studied thoroughly. This paper aims to contribute to the current linguistic research through investigating this type of PP. In addition to describing the relevant properties of this PP with sufficient examples illustrating its structure, the paper also attempts to theoretically analyze the internal structure of the PP itself and the structural patterns in which it occurs using the framework of Head-driven Phrase Structure Grammar (HPSG).

The next sections of the paper proceed as follows. Section [2] offers a literature review of the structure of sentences in SA that are somewhat similar to the sentences where our introductory PP occurs. Section [3] introduces the theoretical framework that is used in this paper. Section [4] describes the structural properties of the introductory PP and includes linguistic data (i.e., sentence or phrasal examples) illustrating this description. Section [5] presents a non-transformational analysis that accounts for the properties and constructions which are relevant to the introductory PP using the framework of HPSG. Section [6] concludes this paper.

2. Literature Review

The structure of the introductory PP under discussion here falls under the umbrella of the structure of verbless clauses or sentences in SA which can be in a structural pattern like NP + NP, NP + AP, or NP + PP as exemplified in (1).

(1) a. *xaalid-un   muʕallim-un*

     Khaled-NOM teacher-NOM

     'Khaled is a teacher.'

   b. *xaalid-un   wasiim-un*

     Khaled-NOM handsome-NOM

     'Khaled is handsome.'

c. *xaalid-un　fii　l-madrasat-i*
Khaled-NOM in school-GEN
'Khaled is at school.'

The structure of verbless sentences like the ones shown in (1) has been a matter of debate among linguists. The main debate revolves around whether verbless sentences are complete finite clauses that have a full set of categories which are required for a well-formed sentence as is the case with typical verbal sentences.

Some linguists (e.g., Ryding (2005)) argue that their structure is formed of just a nominal subject and a predicate which can be an NP, an AP, or a PP and they call such sentences nominal, equational, or verbless sentences as opposed to verbal ones which include verbs. This view which is widely held by the proponents of the traditional school of Arabic syntax assumes that such sentences do not include or need to include any invisible verbs or functors.

Another view assumes that verbless sentences like those in (1) include an invisible copula functioning as the head of such sentences. Fassi Fehri (1993), for example, argues that the copula heads such verbless sentences but it is present only in the D-structure, not the surface one. He adds that when tense, aspect, or mood becomes marked in these sentences, the copula, then, becomes visible in the S-structure as exemplified in (2) which is the same sentence in (1.a) except that it is in the past tense.

(2) *kaan　xaalid-un　muʕallim-an*
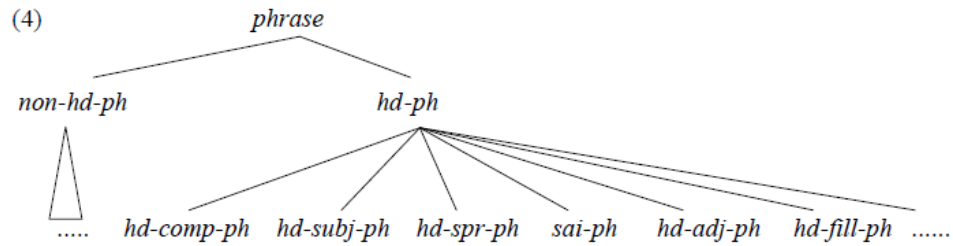was　Khaled-NOM teacher-ACC
'Khaled was a teacher.'

Aoun, Benmamoun & Choueiri (2010), on the other hand, propose a different view. In brief, they suggest that verbless sentences are headed by a different invisible functional head and that the existence of the invisible copula is not plausible here. They claim that such sentences project a TP with no VP and that this TP is headed by the (empty) functional category T which heads such sentences and assigns nominative case to their subjects. The structure that they propose for verbless sentences is shown in (3) (Aoun et al., 2010, p. 45).

(3)

```
            TP
          /    \
        NP      T'
              /    \
             T    NP/AP/PP
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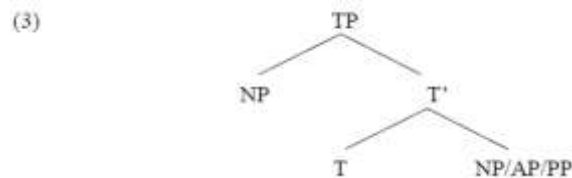
The debate on this kind of syntactic structure is not yet resolved and it is still enriching the linguistic research. Recall that the structure of the introductory PP that will be discussed in this paper is an instance of the structure of these verbless sentences. In addition, the occurrence of this introductory PP, as briefly introduced in [1], is restricted to three structural patterns. Hence, its structure will be an interesting area of comparing and testing the above mentioned accounts of the structure of verbless sentences in SA as we will see later. To elaborate more on these accounts and analyze them from different dimensions, the theoretical approach that will be used here differs from the transformational approaches that are commonly used to discuss them. We will use a non-transformational approach that falls under the same umbrella of generative syntax and introducing this approach will be the concern of next section.

3. Theoretical Framework

The theory that is used in this paper is Head-driven Phrase Structure Grammar (HPSG, henceforth). In brief, HPSG is a generative grammar theory that deals mostly with syntax and, to a lesser degree, with linguistics areas such as semantics, morphology, and computational linguistics. It first emerged during the mid 1980s as a theory of phrase structure grammar that was somewhat seen as a continuation of the frameworks of Generalized Phrase Structure Grammar (GPSG) and Categorial Grammar (CG) (Abeillé & Borsley, 2021). HPSG can be characterized as a non-transformational constraint-based theory which presents itself as a challenging alternative to the transformational theories of syntax, especially in the controversial syntactic phenomena like the one under discussion here. The first characteristic 'non-transformational' means that the theory does not assume that the formation of sentences involves movement processes. The second feature 'constraint-based', on the other hand, simply denotes that the structure of a linguistic object or sign (i.e., lexeme/word or a phrase) is well-formed if and only if it conforms to all the relevant constraints. Linguistic signs in HPSG are, in turn, hierarchically classified into types and each type has its own constraints plus the constraints inherited from its supertypes. Hence, HPSG, as Borsley & Müller (2021) argue, can be seen as a complex system of lexical and phrasal types and linguistic constraints governing the structure of these types. To illustrate this concretely, let us discuss both the phrasal type *head-complement-phrase* (*hd-comp-ph*) that is shown in the partial classification of phrases in (4) and the constraints that apply to this type which are given in (5).

(4)

$$phrase$$

non-hd-ph   hd-ph

.....   hd-comp-ph   hd-subj-ph   hd-spr-ph   sai-ph   hd-adj-ph   hd-fill-ph   ......

(5) a. *hd-comp-ph*:

$$\begin{bmatrix} \ \ \end{bmatrix} \rightarrow \text{H} \begin{bmatrix} word \\ \text{COMPS } nelist\ ([1] \oplus \text{list}) \end{bmatrix}, [1]$$

b. *hd-ph*:

$$[\text{SYNSEM} / [1]] \rightarrow \ .....\ \text{H}\,[\text{SYNSEM} / [1]]\ .....$$

c. *phrase*:

$$[\ \ ] \rightarrow [\text{SYNSEM}\ [\text{COMPS}\ \langle\ \rangle]]$$

The phrasal type *hd-comp-ph*, as shown in (4), is a subtype of the type *hd-ph* (*headed-phrase*) which is, in turn, a subtype of *phrase*. Recall that phrasal, as well as, lexical types are classified hierarchically in HPSG. This hierarchy allows generalizations to apply on different types and avoids stating all the relevant constraints of each type individually. Applying this to the type *hd-comp-ph* means that it is subject to the following constraints: the particular constraints on its maximal type *hd-comp-ph*, the constraint on its immediate supertype *hd-ph*, and the constraint on its root supertype *phrase*. The constraints on these three types can be described, in simple words, as follows.

The constraints on *hd-comp-ph*, which is shown in (5.a), state that a phrase of the type *hd-comp-ph* is headed by a word (i.e., not a phrase) and that this head word must have one or more complements. The constraint on the type *hd-ph*, as shown in (5.b), indicates that the syntactico-semantic (SYNSEM) value of the mother of a headed phrase has to be, by default, identical to the SYNSEM value of its head. It should be noted here that 'by default', which is represented in the constraint (5.b) by '/', means "when no constraint requires something different" (Borsley & Jones, 2005, p. 227). The last constraint here is on the type *phrase* and it applies to all phrases cross-linguistically. It is also referred to as the EMPTY COMPS CONSTRAINT (ECC). This constraint, as in (5.c), simply states that phrases cannot take complements (i.e., the requirement of complements must be met at an earlier stage during the formation of a phrase and before reaching the phrasal level). Applying these constrains can be exemplified by the structure of the VP *found an apple* shown briefly in (6).

(6)

$$\text{VP}\begin{bmatrix} hd\text{-}comp\text{-}ph \\ \text{HEAD } [1] \end{bmatrix}$$

$$[1]\text{V} \qquad\qquad [2]\text{NP}$$
$$[\text{COMPS}[2]]$$

found   *an apple*
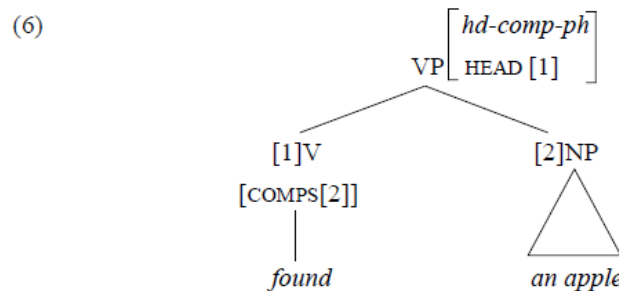
The structure in (6) which is for a head-complement phrase shows that the phrase is composed of two daughters. The first is the head and it is a word (V), not a phrase. The second is an NP and it functions as a complement of the head and this can be seen by the matching of its tag (i.e., [2]) and the COMP value of the head. Hence, the particular constraints on *hd-comp-ph* are met here. The application of the constraint of *hd-ph* is shown in the identical value of the HEAD of the mother VP and its V head which is tagged as [1]. It should be noted that the value of HEAD which is encapsulated here in the tag [1] includes information about the head verb like VFORM *finite*, NEG (negated) +/-, and AUX (auxiliary) +/-. Lastly, the constraint on the type *phrase* is also met here in that the VP takes no complement.

Two more points need to be addressed here before concluding this brief introduction of HPSG.[i] The first is that the same system or mechanism of hierarchical types and constraints that has been introduced here applies to words and lexemes (i.e., at the lexical level). The second point is that HPSG is named head-driven since the head is the core of the phrase that tells us the necessary information about it. It identifies the phrasal type and includes the necessary information about the other components of the phrase.

4. An Overview of the Introductory PP in SA: Data & Description

One common way that is used to introduce sentences in SA is to begin with a PP headed by the preposition *min* when it expresses a partitive sense in constructions like those shown in (7) (the introductory PP is in **bold**).

(7) a. ***min al-xaṭaʔ-i***   t-tadxiin-u   ʔamaam-a   ʔaṭfaali-ka

     of the-wrong-GEN smoking-NOM opposite-ACC children-your

     'It is wrong to smoke in front of your children.'

b. ***min an-naadir-i***   wuṣuul-u   aṭ-ṭarafa-yni   ʔilaa ittifaaq-in   murḍ-in

     of the-rare-GEN reaching-NOM the-side.dual-GEN to compromise-GEN satisfactory-GEN

     'It is rare for the two sides to reach a satisfactory compromise.'

c. ***min al-mutawaqqaʕ-i***   huṭuul-u   l-ʔamṭaar-i   fii dubai

     of the-expected-GEN falling-NOM the-rains-GEN in Dubai

     'It is expected to rain in Dubai.'

d. ***min al-badiihiyy-i***   ixtilaaf-u   l-ʔaaraaʔ-i   ḥawl-a s-siyaasaat-i   l-jadiidat-i

     of the-axiomatic-GEN differing-NOM the-views-GEN on the-policies-GEN the-new-GEN

     'It is axiomatic that views differ on the newly issued policies.'

As the examples in (7) show, this introductory PP is in some way similar to the English phrase 'It is .....' in structures like *It is known that .....*, *It is supposed that....*, etc. The main concern here, however, lies in the properties of the introductory PP itself and the constructions where it occurs which, as exemplified in (7), can be outlined as follows: (a) the internal structure of the PP consists of the head preposition *min* and an NP complement; (b) the head preposition *min* expresses a partitive meaning somewhat similar to 'out of' or 'among'; (c) the NP complement of *min* is headed by a definite noun whose case is genitive and it can be in different forms of derived nouns (e.g., the form of a verbal noun which is called *al-maṣdar* form in Arabic as *al-xaṭaʔ* (the-wrong) in (7-a), the form of a participle[ii] as the active participle *an-naadir* (the-rare) in (7-b) and the passive participle *al-mutawaqqaʕ* (the-expected) in (7-c), and any other form of derived nouns[iii] like *al-badiihiy* (the-axiomatic) in (7-d)); (d) the introductory PP, as in the examples (7-a) to (7-d), is always followed by a NP headed by a noun in the *maṣdar* form (i.e., a verbal noun); (e) the case of the head of this NP is nominative which is the case of nouns functioning, for example, as the subject of verbal clauses in Arabic. Given this, the structure that has been discussed so far of this introductory PP and the sentence in which it occurs can be summarized as in (8).

(8) a. The internal structure of the introductory PP:

     PP[FORM *min*]: *min* + NP[FORM *derived*, DEF +, CASE *gen*]

b. The preliminary structure of the sentence in which the introductory PP occurs:

     S: PP[FORM *min*] + NP[FORM *maṣdar*, CASE *nom*]

In Arabic, the NP [*maṣdar*], which is the other obligatory overt expression in the sentences where our introductory PP occurs as shown in (8-b) and exemplified in (7), is mostly interchangeable with a specific clause headed by the complementiser ʔan (that), which I will assume is a complementiser phrase (CP). This CP consists of the complementiser ʔan plus an imperfect verb whose mood is turned into subjunctive by ʔan as summarized in (9) and exemplified in (10) which is the same sentence as (7-c) except that the NP[*maṣdar*] huṭuul-u (falling) has been replaced by the CP[ʔan form] ʔan tahṭul-a (that fall).

(9) CP[ʔan form]: ʔan + verb[*imperfect*, MOOD *sub*]

(10) ***min al-mutawaqqaʕ-i*** ʔan tahṭul-a   l-ʔamṭaar-u   fii dubai

     of the-expected-GEN that fall-SUB the-rains-NOM in Dubai

     'It is expected to rain in Dubai.'

To a lesser degree, the NP [*maṣdar*] here can also be replaced by another CP headed by the subordinate complementiser ʔanna (that). The complementiser ʔanna differs from ʔan in its syntax. It belongs to a set of particles referred to as 'ʔinna and its sisters'[iv] which are mostly used as a complementiser introducing a subordinate clause which can normally begin with any phrase except verbs as summarized in (11) and exemplified in (12) which is similar to (7-d) but with a CP[ʔanna form] instead of the NP[*maṣdar*].

(11) CP[ʔanna form]: ʔanna + XP[– verb] '.....'

(12) **min al-badiihiyy-i ʔanna l-ʔaaraaʔ-a taxtalif-u ħawl-a s-siyaasaat-i l-jadiidat-i**

   of the-axiomatic-GEN that the-views-ACC differ-IND on the-policies-GEN the-new-GEN

   'It is axiomatic that views differ on the newly issued policies.'

Given this, the overall structure of the sentence in which our introductory PP occurs, which has been preliminary proposed in (8-b), should be revised as in (13).

(13) The (revised) structure of the sentence in which the introductory PP occurs:

   S: PP[*min* form] + NP [NFORM *maṣdar*]/ CP [*ʔan* form]/ CP [*ʔanna* form]

As shown in (13), there are three possible constructions that can follow the introductory PP. It should be noted that the introductory PP and one of these three are the obligatory overt elements of the sentence. An adverbial PP can, for instance, sometimes intervene between the introductory PP and the NP or CP following it as exemplified in (14).
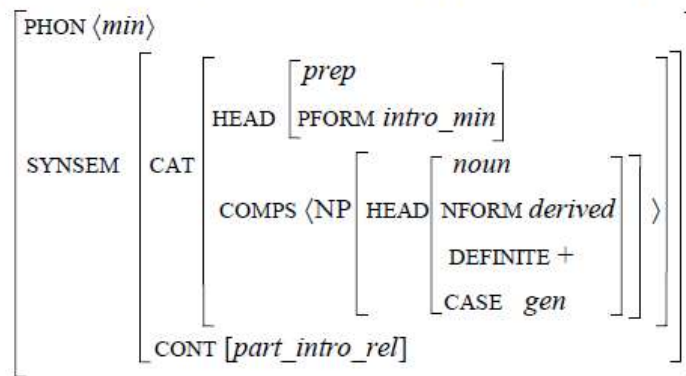
(14) **min al-mutawaqqaʕ-i fii miθl-i haaðihi l-ʔayyam-i ʔan taħṭul-a l-ʔamṭaar-u fii dubai**

   of the-expected-GEN in such-GEN these the-days-GEN that fall-SUB the-rains-NOM in Dubai

   'It is expected to rain in Dubai during this time of the year.'

Another point that is worth mentioning here is that the three possible constructions that follow the introductory PP (i.e., the NP[*maṣdar*], the CP[*ʔan* form], and the CP[*ʔanna* form]) are all classified by Arab traditional grammarians under the type *maṣdar* (verbal noun). The NP[*maṣdar*] is of the sub-type explicit *maṣdar* while the other two CPs are of the sub-type interpreted *maṣdar*.[v]

5. The Analysis

Let us now use the framework of HPSG, which has been introduced in section [3], to account for the structure of our introductory PP which has been theory-neutrally described in section [4]. The first thing to start with here is to discuss the proposed lexical description of the head of this PP given in (15) which summarizes its relevant properties and structure.

(15) The lexical description of the head of the introductory PP.

$$
\begin{bmatrix}
\text{PHON } \langle min \rangle \\
\text{SYNSEM} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} prep \\ \text{PFORM } intro\_min \end{bmatrix} \\ \text{COMPS } \langle \text{NP} \begin{bmatrix} \text{HEAD} \begin{bmatrix} noun \\ \text{NFORM } derived \\ \text{DEFINITE } + \\ \text{CASE } gen \end{bmatrix} \end{bmatrix} \rangle \end{bmatrix} \\ \text{CONT } [part\_intro\_rel] \end{bmatrix}
\end{bmatrix}
$$

The information in (15) states that the PHON value of the head of our introductory PP is *min*. The description of CAT (category) which concerns the syntactic features says that this head is of the type preposition (*prep*) whose form is specified as introductory *min* to distinguish it from the other types of the preposition *min*. The information also states that the head *min* here always takes a complement which is an NP headed by a derived definite noun whose case is genitive. The value of CONT (content), which, on the other hand, concerns the semantics of this head, restricts the meaning of *min* here to 'partitive introductory' senses. Thus, we can say that the entry in (15) encompasses the essential information that we need to know about the head *min*. It also excludes, as much as possible, the other types of *min* from sharing the description given in (15) as exemplified in (16).

(16) **min lundun badaʔ-at riħlatu-na**

   from London started trip-our

   'From London our trip started.'

Although the PP in (16) is headed by *min* and occurs at the beginning of sentence, it is not our introductory PP. It does not match the linguistic description given in (15) in more than one aspect. For example, the meaning of *min* is different (i.e., it expresses an adverbial locative sense similar to 'from'). The whole PP is also an instance of fronting and being at the beginning is not its original position (i.e., it

is not the one that introduces sentences). In addition, the complement of *min* here is not a derived noun.

Applying the information in (15) to the introductory PP *min al-mutawaqqaʕ-i* (of the expected) will give it the structure briefly shown in (17).

(17)

PP[HEAD[1]]

[1]P [COMPS[2]]

[2]NP
$\begin{bmatrix} derived, \text{DEF} + \\ \text{CASE } gen \end{bmatrix}$
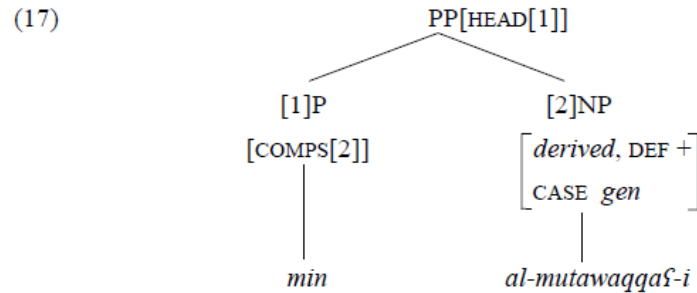
min   *al-mutawaqqaʕ-i*

As for the structure of a sentence introduced by our introductory PP, it will be like the one that is shown briefly in (18).

(18) *min al-mutawaqqaʕ-i   huṭuul-u   l-ʔamṭaar-i fii dubai*
     of   the-expected-GEN   falling-NOM the-rains-GEN in Dubai

'It is expected to rain in Dubai.'

S

PP   NP

min al-mutawaqqaʕ-i   *huṭuul-u l-ʔamṭaar-i fii dubai*
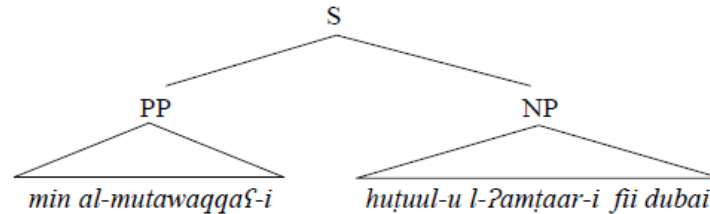
The structure in (18) can be analyzed in more than one way, but not every potential analysis is good. The following is a summary of four analyses.

Analysis (i): By looking at the structure in (18), one might suggest that it can be analyzed by assuming that the PP is a head daughter of S and the NP, or the CP in case we replace the NP[*maṣdar*] here with one of the other two possible CPs, is its complement but this assumption is ruled out by the EMPTY COMPS CONSTRAINT (ECC) which requires all phrases like the PP here to have an empty list as the value of COMPS (i.e., phrases cannot take complements) (Ginzburg & Sag, 2000).

Analysis (ii): Another potential analysis is to assume that our introductory PP is an adjunct, but this cannot also be approved because the sentence will become ill-formed without the PP as in (19) and this applies to all the examples that have been discussed so for.

(19) **huṭuul-u   l-ʔamṭaar-i fii dubai*
     falling-NOM the-rains-GEN in Dubai

'Raining in Dubai.'

Analysis (iii): The third potential analysis is to suggest that that our introductory PP occurs in a sentence of the type *non-hd-ph* (i.e., non-headed phrase) that is composed of a topic and a predicate with no functioning head. As previously discussed in section [2], this is the same view held by many traditional Arab grammarians. Recall that this analysis allows almost any type of NP to appear together with a PP or an AP to form the so-called nominal sentence. Hence, it seems implausible that this analysis can account, at least, for the structure of our introductory PP which is, as described in section [4], restricted to three possible structural patterns (i.e., it is not open for different types of NPs and PPs).

Analysis (IV): The fourth and last analysis[vi] here is related to an assumption that is widely held by Arab grammarians (e.g., Fassi Fehri (1993)) with regards to verbless sentences including those whose predicate is a PP. In brief, this analysis assumes that such sentences are headed by an invisible form of the copula when tense and mood are unmarked. When one of these is marked, the copula becomes visible as the sentence examples in (20) and (21) (example (20) is from (Fassi Fehri, 1993, p. 152)).
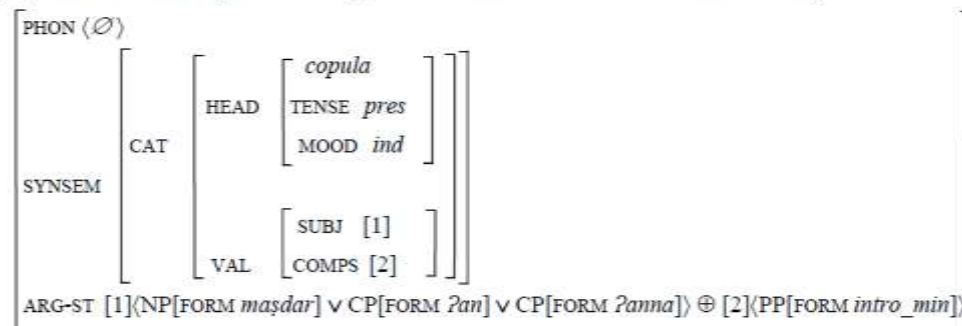
(20) a. *ar-rajul-u*   *fii*   *d-daar-i*

     the-man-NOM in the-house-GEN

     'The man is in the house.'

    b. ***kaana***   *ar-rajul-u*   *fii*   *d-daar-i*

      was   the-man-NOM in the-house-GEN

      'The man was in the house.'

(21) a. *fii*   *s-safar-i*   *saʕaadat-un*

     in   the-travel-GEN   happiness-NOM

     'Travelling brings happiness.'

    b. ***kaana***   *fii*   *s-safar-i*   *saʕaadat-un*

      was   in   the-travel-GEN   happiness-NOM

      'Travelling was a source of happiness.'

Fassi Fehri (1993) proposes a rule that specifies the conditions of spelling out the copula. The rule says "spell out the copula as *kwn* when Mood, Aspect, and/or Tense are specified, otherwise spell it out as zero." (p. 156). Let us now apply this rule to a sentence having our introductory PP as in (22).

(22) a. *min al-mutawaqqaʕ-i*   *huṭuul-u*   *l-ʔamṭaar-i*   *fii*   *dubai*

     of the-expected-GEN   falling-NOM the-rains-GEN in   Dubai

     'It is expected to rain in London.'

    b. ***kaana*** *min al-mutawaqqaʕ-i*   *huṭuul-u*   *l-ʔamṭaar-i*   *qabl-a*   *yawm-ayn*

     was   of   the-expected-GEN falling-NOM   the-rains-GEN before-ACC   day.DUAL

     'It was expected to rain two days ago.'

In (22-b) the tense, unlike what is in (22-a), is marked or specified by *qabl-a yawm-ayn* (two days ago) and, hence, the copula needs to be visible. Now, if we apply this analysis to the structure of sentences where our introductory PP occurs like the one given earlier in (18), the invisible copula will be the head of the sentence, the introductory PP will be the complement of this copula, and the subject will be one of the three previously mentioned constructions (i.e., the NP [*maṣdar*] as in (22), the CP [*ʔan* form], or the CP [*ʔanna* form]). We say here that the subject of the copula will be one of these three and not the PP because the case of the subject of the copula, unlike that of its complement,[vii] has to be nominative which applies, as shown in the glosses, to the NP[*maṣdar*][viii] in (18), (22-a), (22-b) where the copula is visible, and the examples presented earlier in (7) as well. Given this, the description of the invisible copula in sentences where the introductory PP occurs will be as in (23).

(23) The lexical description of the copula that heads sentences where the introductory PP occurs.

$$\begin{bmatrix} \text{PHON } \langle \varnothing \rangle \\ \text{SYNSEM} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} copula \\ \text{TENSE } pres \\ \text{MOOD } ind \end{bmatrix} \\ \text{VAL} \begin{bmatrix} \text{SUBJ } [1] \\ \text{COMPS } [2] \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST } [1]\langle \text{NP[FORM } maṣdar] \lor \text{CP[FORM } ʔan] \lor \text{CP[FORM } ʔanna]\rangle \oplus [2]\langle \text{PP[FORM } intro\_min]\rangle \end{bmatrix}$$

In words, the description in (23) states that the PHON value of the head is ∅ (i.e., none or invisible). The head is of the type *copula* with a default value for both its tense and mood (i.e., present and indicative are the unmarked values) and, hence, nothing here requires the copula to be visible. The value of the valence features shows that this invisible copula always has a subject and complement whose values are stated in ARG-ST. The subject is either an NP [FORM *maṣdar*], a CP [FORM *ʔan*], or a CP [FORM *ʔanna*]. The complement, on the other hand, is a PP [FORM *intro_min*], which is our introductory PP whose internal structure has already been analyzed in (15 & 17). As noted earlier, the copula will be visible when tense or mood is marked. If this happens, the description of the copula will be like (23), but the

value of PHON will, of course, change together with the value of TENSE and/or MOOD.

Before applying the information in (23) to the structure of a sentence having our introductory PP, there is a need here to propose a new constraint that governs the argument structure of the copula that takes the introductory PP as a complement as in (24).

$$(24)\ copula \begin{bmatrix} \text{SUBJ } [1] \\ \text{COMPS } [\text{PP[FORM } \textit{min-intro}]] \end{bmatrix}$$

$$\Downarrow$$

$$[1]\langle \text{NP[FORM } \textit{maṣdar]} \vee \text{CP[FORM } \textit{ʔan]} \vee \text{CP[FORM } \textit{ʔanna}]\rangle$$

The constraint in (24) restricts the value of the subject for copulas taking our introductory PP as a complement to the three possible options discussed before (i.e., an NP [FORM *maṣdar*], a CP [FORM *ʔan*], or a CP [FORM *ʔanna*]). This goes in line with the structural properties of sentences having our introductory PP and rules out the possibility of having any different argument in such constructions.

Now let us apply the information in (23) to the sentence example discussed earlier in (18) and repeated below in (25) for convenience. Doing so will give it the structure briefly shown in (26).

(25) *min al-mutawaqqaʕ-i huṭuul-u l-ʔamṭaar-i fii dubai*

     of   the-expected-GEN   falling-NOM   the-rains-GEN   in   Dubai

     'It is expected to rain in Dubai.'

(26)
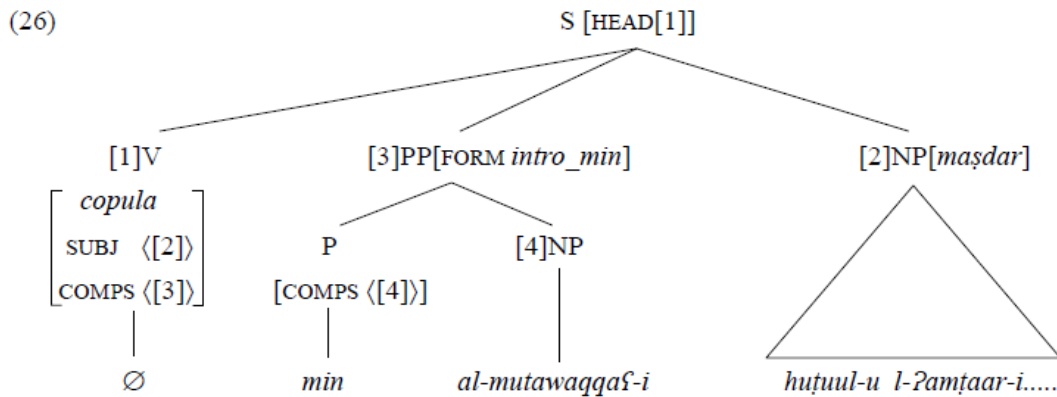
As shown in (26) the invisible copula is the head of the sentence, the NP which is of the *maṣdar* form is its subject, and the PP[FORM *intro_min*] is its complement. If the NP[*maṣdar*] subject here is replaced by one of the two possible CPs, the structure will be the same except this replacement as shown in (27).

(27) *min al-mutawaqqaʕ-i ʔan tahṭul-a l-ʔamṭaar-u fii dubai*

     of   the-expected-GEN that fall-SUB the-rains-NOM in Dubai

     'It is expected to rain in Dubai.'
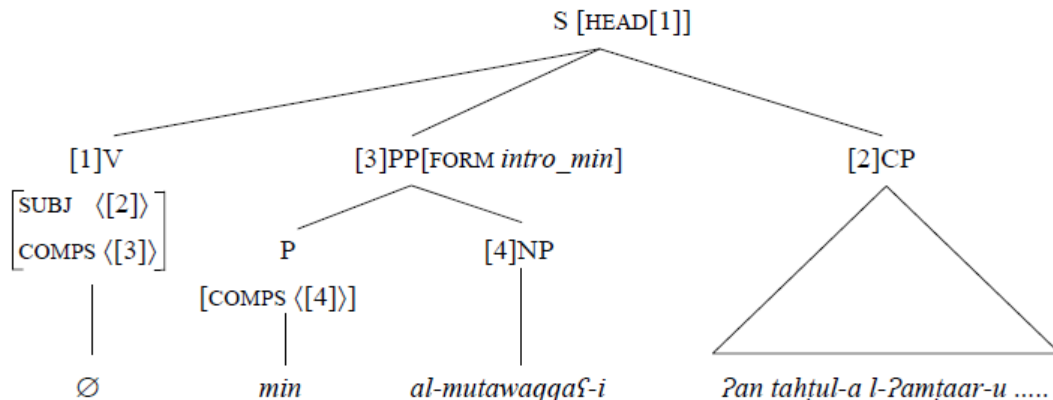
Although the analysis given in (26) and (27) seems reasonable and covers the relevant structural properties, we still need to answer a question that could be asked here before finishing the discussion of the analysis. One might ask about the phrasal type of sentences like (26) and (27) and how to account for the fact that the PP here precedes the subject of the copula in the linear order. One possible answer to this is to assume that the appropriate phrasal type for such sentences is the type *hd-subj-comp-ph*, which is initially adopted from the type *sai-ph* of English subject-auxiliary inverted constructions (Ginzburg & Sag, 2000, p. 36). The schema of this phrasal type is shown in (28) (Borsley, 2010).

$$(28)\ \textit{hd-subj-comp-ph} \rightarrow$$

$$\begin{bmatrix} \text{DTR} \left\langle [1] \begin{bmatrix} \textit{word} \\ \text{SUBJ } \langle [2] \rangle \\ \text{COMPS } \langle [3], \ldots, [n] \rangle \end{bmatrix}, [2], [3], \ldots, [n] \right\rangle \\ \text{HD} - \text{DTR } [1] \end{bmatrix}$$

The schema in (28), in simple words, says that the type *hd-subj-comp-ph* consists of three daughters meaning that they occur in a flat structure. The daughters are the head, which is the copula in the constructions under discussion as in (26 & 27), a subject, which is one of the three possible arguments here, and the complement, which is the introductory PP. As for the word order here, it is mostly considered, as Abeillè and Borsley (2021) argue, a matter of phonology in HPSG and, hence, the PP complement can precede the subject here. If we want to add something more that specifies the order, we can, for instance, use the order domain approach as proposed by Abeillè and Borsley (2021, p. 33). The relevant order domain here is added at the bottom of (29) which shows the phrasal type *hd-subj-comp-ph* that applies to the sentences where the introductory PP occurs.

$$(29)\ \text{The type } \textit{hd-subj-comp-ph} \text{ of the sentences where the introductory PP occurs} \rightarrow$$

$$\begin{bmatrix} \text{DTR} \left\langle [1] \begin{bmatrix} \textit{word} \\ \text{SUBJ } \langle [2] \rangle \\ \text{COMPS } \langle [3] \rangle \end{bmatrix}, [2], [3] \right\rangle \\ \text{HD} - \text{DTR } [1] \\ \text{DOM } \langle [1], [3], [2] \rangle \end{bmatrix}$$

The second plausible answer to the question about the phrasal type and word order here is to propose a different phrasal type for sentences like those in (26) and (27). This type is *hd-comp-subj-ph* whose schema can be derived from the type *hd-subj-comp-ph* as shown in (30).

$$(30)\ \textit{hd-comp-subj-ph} \rightarrow$$

$$\begin{bmatrix} \text{DTR} \left\langle [1] \begin{bmatrix} \textit{word} \\ \text{COMPS } \langle [3] \rangle \\ \text{SUBJ } \langle [2] \rangle \end{bmatrix}, [3], [2] \right\rangle \\ \text{HD} - \text{DTR } [1] \end{bmatrix}$$

The schema in (30), which is a modified version of the one proposed by (Hahn, 2012, p. 151), simply says that this type of phrase, which has a flat structure, consists of three daughters: a lexical head, the complement of this head, and its subject. It seems that this one answers the question about the phrasal type and word order in a more straightforward way, but the first is still a plausible analysis.

6. Conclusion

The paper has investigated the structure of a PP that is commonly used in SA to introduce sentences in an objective way that does not refer to the source of the expressed observation. It offers a theory-neutral description of the structure of this introductory PP which shows that the occurrence of this PP is interestingly restricted to three possible structural patterns (PP[FORM *intro_min*] + NP[*maṣdar*]/ CP[*ʔan* form]/ CP[*ʔanna* form]). It also attempts to theoretically analyze the structure of the introductory PP within the framework of HPSG. It proposes a lexical description that includes the lexical information of the head *min* of the PP. In addition, the paper discusses four proposed analyses of the structure of the sentences in which the introductory PP occurs. The last one of these three analyses accommodates the description of the relevant structural properties of the introductory PP. It is also in line with the HPSG framework and—as far as the researcher knows—does not violate any constraints and, hence, it seems a reasonable analysis for the distinct structure of the introductory PP in SA.

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Notes

[i] For more about the framework of HPSG, see, among others, Levine & Meurers (2006), Borsley & Müller (2021), and Sag, Wasow, & Bender (2003).

[ii] It should be noted here that participles in Arabic are descriptive words that can function as adjectives but they are classified as nouns (Ryding, 2005).

[iii] Derived nouns are those which are derived from other nouns or verbs. For more about this, see, for instance, Islam et al. (2010).

[iv] For more about this set, see, for instance, Aoun et al. (2010).

[v] For more about the *maṣdar* form and its subtypes, see Alnadery (2009) and Aljendi (1999).

[vi] It should be noted that we will exclude here the analysis proposed by Aoun et al. (2010). As discussed in section [2], this analysis assumes that verbless sentences are headed by an empty functional head in T. The analysis in HPSG, however, does not involve the assumption of having abstract empty heads in that such heads cannot be described or assigned lexical descriptions (Abeillé & Borsley, 2021).

[vii] The case of the complement of the copula is always accusative.

[viii] Only the case of the NP[*maṣdar*] has been referred to here because case marking is not overt for either the two CPs, the other possible arguments, or the introductory PP.

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