

Multiple Wh-Questions in Arabic

*Mohammed O. Al-Shorafat,
Mohammed Farghal
Faculty of Art
Yarmouk University*

ملخص

يهدف هذا البحث بشكل رئيسي إلى استقصاء ودراسة الخصائص النحوية لتعدد أسماء الاستفهام في الجملة الواحدة في اللغة العربية، وسيقدم هذا البحث إطاراً تفسيريًا وافياً للقواعد النحوية التي تحكم تلك الظاهرة.

كما سيبيّن هذا البحث أنه بالإضافة للبنية السطحية والبنية العميقة، فإن في اللغة العربية مستوى ثالث لتمثيل التراكيب النحوية وهو ما يدعى بالبنية المنطقية (Logical form). كما يُظهر هذا البحث أنه بينما حركة اسم الاستفهام في البنية السطحية هي حركة إحلالية فإنها في البنية المنطقية حركة إلحاقية. ويبين البحث أيضًا إن قاعدة الفجوة التركيبية (Empty Category Principle) في البنية المنطقية تؤدي دورًا أساسيًا في تفسير قواعد صحة التركيب المسؤولة عن توليد أسماء الاستفهام وحركتها في اللغة العربية.

ABSTRACT:

The main concern of this paper is to investigate the syntactic properties of multiple wh-questions in Arabic. An adequate account for handling this important phenomenon in the grammar of Arabic will be proposed.

It will be shown that in addition to S-structure and D-structure, Arabic possesses a third level of representation, that is, logical form (LF). It will be argued that while wh-movement at S-structure is a substitution process, at LF it is an adjunction process. It will also be demonstrated that the Empty Category Principle at LF plays a crucial role in explaining the well - formedness conditions placed on the generation and movement of multiple wh-questions in Arabic.

1. Background of Study

Despite the fact that recent models of transformational grammar have endeavored to constrain the transformational component of grammar in favor of base-generation, wh-movement has proved to be one of the most robust Move α kind of rule in English as well as in many other languages. It should be noted that the existence vs. the absence of this transformation has been described in recent syntactic analyses as a matter of parametric variation¹. In essence, parametric variation refers to the possibility of either moving the wh-element to clause-initial position or generating it in place at S-structure. It should be mentioned that parametric variation may render wh-movement obligatory in some languages such as English and Arabic, or may obligatorily base-generate wh-elements in place in languages such as Chinese and Egyptian Arabic, or may optionally move wh-elements in languages such as French.

1 - Aoun, J& N. Hornstein and D. Sportiche, Some aspects of wide scope quantification, *Journal of Linguistic Research*, 1981: 69 - 95. Chomsky, N. *Barriers*, Cambridge, MassL MIT Press, 1986.

Haegeman, L. *Introduction to Government and Binding Theory*, Oxford: Blackwell Publishers, 1991.

As for Arabic, wh-movement is an important syntactic process whose output is what we call 'wh-question' (for evidence for wh-movement in Arabic, see Farghal)². It has been demonstrated that wh-movement occurs obligatorily at S-structure in Arabic. The mode of its application can be argued to be that of substitution rather than adjunction at S-structure. The adoption of substitution rather than adjunction emanates from the fact that Arabic does not licence the occurrence of two initially-adjacent wh-elements at S-structure.

In this regard it is important to mention two studies that are indirectly related to our present study on multiple wh-questions in Arabic³. The First study is conducted by Farghal⁴. In this study, Farghal argues against Chomsky's (1977) unified wh-movement analysis. Chomsky proposes to subsume Topicalization, Relativization and Exclamation under one process, i.e., wh-movement. He concludes that these processes involve wh-elements and movement and in this respect they closely resemble wh-movement; hence, they should be unified together. Farghal on his part, following previous studies and bringing evidence from Arabic structures, tries to show that Relativization and Exclamation are base-generated and not the result of a movement transformation. As for Topicalization he considers it to be a transformational process, but it involves no wh-movement as suggested by Chomsky. Thus he concludes that a wh-movement rule should be strictly restricted to wh-questions.

2 - Farghal, M. The Syntax of WH-Questions and Related Matters in Arabic, Ph. D. Dissertation, 1986: 24 - 28.

3 - One of the referees of this paper has pointed out to us these two studies.

4 - Farghal, M., The Wh-movement Hypothesis: Counter - evidence from Arabic, Papers and Studies in Contrastive Linguistics, 29, 1994: 91 - 104.

Farghal carries out his study within the traditional Extended Standard Theory Framework which is totally different from the GB Framework adopted in our study. The important point to note is that Farghal explicitly states that there is a wh-movement transformation in Arabic.

The second study is carried out by Homeidi⁵. Homeidi is basically concerned with the application of case under government to the structures in Modern Standard Arabic (MSA). In his discussion, however, he tries to differentiate between two types of chain: NP chain and Wh-chain. Those chains are the result of NP movement and Wh-movement, respectively. He concludes that an NP chain differs from a Wh-chain in that when the NP moves, it leaves a clitic pronoun marked for Θ -role, but not case, while when a Wh-element moves, it leaves a trace marked for Θ -role as well as case. He cites two examples on Wh-movement in MSA. Like Farghal, he assumes that there is a Wh-movement transformation in MSA.

The present paper takes wh-movement as a point of departure for dealing with an equally important phenomenon, that is, multiple wh-questions in Arabic. The importance of this phenomenon lies in the fact that this area of Arabic grammar is still a virgin ground, as far as our knowledge is concerned. However, before we address this phenomenon in more detail, we shall look briefly at English data as wh-questions of this type have

5 - Homeidi, M., Government and Binding and Case Assignment in Modern Standard Arabic, *Papers and Studies in Contrastive Linguistics*, 29, 1994: 123 - 139.

been extensively cited in the existing literature⁶. It is argued that English multiple wh-questions are subject to wh-movement just like other wh-questions. However, the fact that in multiple wh-questions there are two or more questioned constituents in the same clause calls for certain constraints. These constraints revolve around the fact that English wh-movement is obligatory and at the same time it is not possible to front two wh-elements at S-structure in the same clause as can be illustrated in the following examples.

- (1) a. *you saw who(m)?⁷
 b. Who(m) did you see?
- (2) a. *When what did George do?
 b. When did George do what?

It can be seen in (1) and (2) above that wh-movement is obligatory and two wh-elements cannot be subject to wh-movement, despite the fact that the unmoved wh-element (what) enjoys a full interrogative force just like the moved wh-element (when). that is, in (2b) we are not merely questioning the time at

6 - Baker, C.L., Notes on the Description of English Questions: The Role of an Abstract Question Morpheme, *Foundations of Language*, 6, 1970: 197 - 219.

Chomsky 1981, 1986.

Lasnik H. and M. Saito, On the Nature of Proper Government, *Linguistic Inquiry*, 15(2), 1984: 235 - 89.

7 - It should be pointed out that (1a) is perfectly grammatical if it is used or understood as an echo question only.

which George did something; we also question the thing that he did. Thus all wh-elements in multiple wh-questions should be viewed as operators binding variables.

The same situation holds in Arabic as can be evidenced in (3) and (4) below:

(3) a. ★ r a'aa ʿaliyy-un man?

saw Ali-NOM who

★ 'Ali saw who(m)?'

b. man r a'aa ʿaliyy-un?

who saw Ali - NOM

'Who(m) did Ali see?'

(4) a. ★ man maaʿaa 'ištaraa?

who what bought

★ 'Who what he bought?'

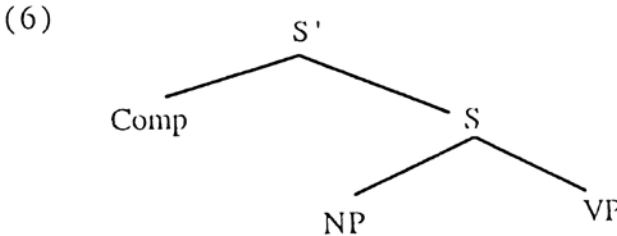
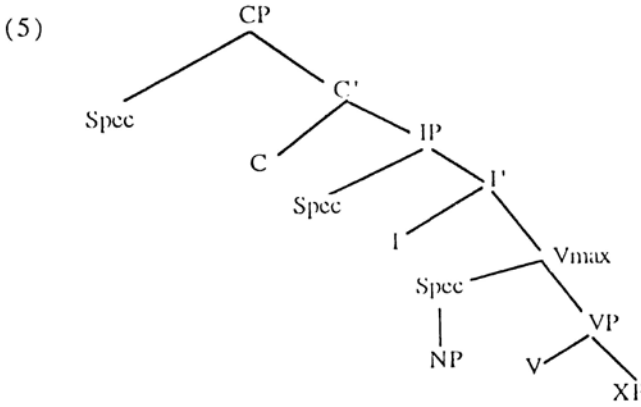
b. man 'ištaraa maaʿaa?

who bought what

'Who bought what?'

While the ungrammaticality of (3a) clearly shows that wh-movement is obligatory in Arabic, the ungrammaticality of (4a) indicates that Arabic does not tolerate the fronting of two wh-elements in the same clause.

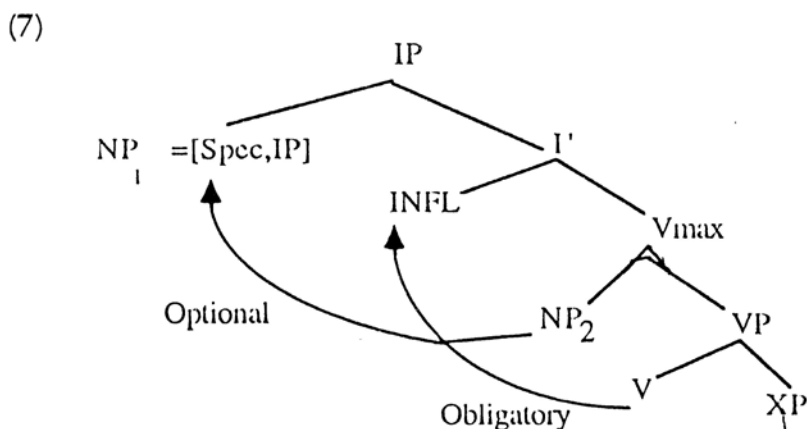
Before we investigate the syntactic properties of multiple wh-questions in Arabic, we shall spell out the theoretical assumptions underlying the discussion in the present paper. Firstly, we adopt the recent formulation of CP within the X-bar syntax as expounded in Chomsky and Haegeman⁸, among others. The reason being that earlier analyses do not differentiate between the (Spec, CP) and C and do not differentiate between the (Spec, IP) and I. Contrast the recent formulation in (5) with the earlier formulation in (6):



8 - Chomsky, 1986; Haegeman, 1991.

As can be noted, (6) above does not distinguish between the COMP position and the wh-landing site (Spec, IP).

Secondly, following Fehri, Mohammed and Benmamoun⁹, we assume that Arabic is an SVO underlyingly and that the VSO order is derived by V movement to INFL, leaving the subject in the Spec of VP. Thus the base - structure of a simple declarative clause in Arabic will be as in (7) below:



In (7) above, NP₂ represents the deep structure position of the subject while NP₁ (Spec, IP) constitutes the S-structure position

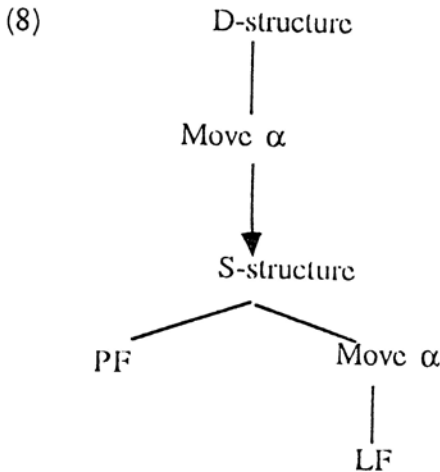
9 - Fehri, F. Generalized IP Structure, Case, Inflection and VS Word Order, MIT Working Papers in Linguistics 10, 1989: 75 - 111.

Mohammed, M, The Problem of Subject - Verb in Arabic: Towards a Solution, Perspectives in Arabic Linguistics, ed. M. Eid, Amsterdam: Benjamins, 1989.

Benmamoun, E, Null Pronominals in the Context of NP and QP, Proceeding of the Eleventh West Coast Conference on Formal linguistics, ed. J. Mead, Standford, CA: Center for the Study of language and Information, 32 - 43.

and V^{\max} is a small clause whose predicate is a VP. According to Mohammed¹⁰, V in the above diagram obligatorily moves to INFL in order to get the inflection features (Tense, AGR). As for NP2 movement to (Spec, IP), it is optional.

Thirdly, for the purposes of this paper, we adopt the model of grammar (T-model) proposed by Haegeman¹¹ as in (8) below:



It should be noted that (8) above represents a three-level structure and Move α is involved at two levels: S-structure and LF (logical form). It is also clear that Move α in the LF may not have a reflex in the PF (phonetic form).

2. Facts of Arabic Multiple Wh-questions

Having laid down the basic assumptions of this study, we shall now move on to address the main facts of multiple wh-

10 - Mohammed, 1989.

11 - Haegeman, 1991: 448.

questions in Arabic. By definition, a multiple wh-question is a direct or an indirect question that involves more than one wh-element in the same clause. To get started, let us consider the following examples:

(9) man_i qaabala man_j?

who met who

'Who met who(m)?'

(10) a. man 'ištaraa maa^ʔaa?

who bought what

'Who bought what?'

b. ★ maa^ʔaa 'ištaraa man?

what bought who

★'What did who buy?'

(11) a. man 'axbara man bi- maa^ʔaa?

who informed who with what

'Who informed who(m) of what?'

b. ★ bi - maa^ʔaa 'axbara man_i man_j?

with what informed who who

★ 'Of what did who inform who(m).'

- (12) a. man_i fa'ala maa^ʔaa li-man_j?
 who did what to-who
 'Who did what to whom?'
- b. ★ maa^ʔaa fa'ala mani l_i - man_j?
 what did who to-who
 ★ 'What did who do to whom?'

The examples in (9) - (12) show that fronted wh-element stands for a subject NP that is [+human]. This turns out to be a general well-formedness condition on multiple wh-questions in Arabic where one or more of the questioned constituents is [+human]. The ill-formedness of (10b), (11b) and (12b) is an immediate consequence of violating the foregoing constraint. That is, the ill-formed examples involve fronting a [-human] wh-element where one or more [+human] wh-elements are present in the clause. This constraint can be captured as in (13):

- (13) In a clause where XY (Z) are wh-elements representing term arguments, the wh-movement rule can only move X where X is the subject of the clause and [+human].

Because the wh-questions in (9)-(12) feature more than one questioned constituent, a well-formed response to any one of them must provide the values of all questioned constituents. By way of illustration, (14) and (15) below may constitute well-formed responses to (9) and (11) while (16), (17), (18) and (19) may not:

- (14) qaabala 'aliyy-un zayd-an.
met Ali-NOM Zayd-ACC
'Ali met Zayd.'
- (15) 'axbara 'aliyy-un zayd-an bi-n-natiijat-i.
informed Ali-NOM Zayd-ACC with - DEF-result - GEN
'Ali informed Zayd of the result.'
- (16) ★ qaabala man zayd-an.
met who zayd-ACC
★ 'Who met Zayd.'
- (17) ★ qaabala 'aliyy-un man.
met Ali-NOM who
★ 'Ali met who(m).'
- (18) ★ 'axbara 'aliyy-un zayd-an bi-maa'aa.
informed Ali-NOM Zayd-ACC with what
★ 'Ali informed Zayd of what?'

- (19) ★ 'axbara 'aliyy-un man bi-n-natijjat-i.
 informed Ali-NOM who with-DEF-result-GEN
 ★ 'Ali informed who(m) of the result.'

Another constraint in the grammar of Arabic bans the base - generation of a wh-element standing for a satellite argument, i.e., a place, time or manner adverbial, if a wh-element representing a term argument, i.e., subject, direct object and indirect object has been fronted by wh-movement. Observe the following examples:

- (20) a. man raja'a 'amsi?
 who came back yesterday
 'Who came back yesterday?'
 b. ★ man raja'a mataa?
 who came back when
 'who came back when?'
- (21) a. man saafara 'ila-l-xaliij-i?
 who travelled to-DEF-Gulf-GEN
 'Who travelled to the Gulf?'
 b. ★ man saafara 'ayna?
 who travelled where
 'Who travelled where?'

22. a. man waṣala bi-s-s ayaarat-i?
 who arrived with-DEF-car-GEN
 'Who arrived by car?'
- b. ★ man waṣala kayfa?
 who arrived how
 'Who arrived how?'

Obviously, the ill-formedness of (20b), (21b) and (22b) results directly from base-generating a wh-element standing for a satellite argument where a term argument has been subject to wh-movement. This constraint can be stated as in (23):

- (23) In a structure XYZ, where Y is a term argument moved by wh-movement and Z represents one or more satellite arguments, wh-elements cannot appear in Z.

Similarly, the fronting of satellite wh-elements by wh-movement bans the base-generation of wh-elements elsewhere in the clause. Consider the examples below:

- (24) a. mataa raja'a zayd-un?
 when came back Zayd-NOM
 'When did Zayd come back?'
- b. ★ mataa raja'a man?
 when came back who
 'When did who come back?'

- (25) a. 'ayna saafara zayd-un?
 where travelled Zayd-NOM
 'Where did Zayd travel?'
- b. ★ 'ayna saafara man?
 where travelled who
 ★ 'Where did who travel?'
- (26) a. kayfa waşala zayd-un?
 how arrived Zayd-NOM
 'How did Zayd arrive?'
- b. ★ kayfa waşala man?
 how arrived who
 ★ 'How did who arrive?'

It is clear that multiple wh-questions are banned when a satellite wh-element has been subject to wh-movement, hence the ill-formedness of (24b), (25b) and (26b). We can state this constraint as follows:

- (27) In a structure X Y Z, where Y is a satellite argument moved by wh-movement and Z represents term arguments, wh-elements cannot appear in Z.

However, it should be noted that it is possible to front a satellite wh-element by wh-movement to have it head a multiple wh-question in Arabic if and only if the base-generated wh-element is a [-human] term argument. By contrast, the fronting of a [-human] term argument by wh-movement bans the base-

generation of a satellite wh-element in the clause. The following examples illustrate this asymmetry:

(28) a. 'ayna fa^cala zayd-un maa^θaa?

where did Zayd-NOM what

'Where did Zayd do what?'

b. ★ maa^θaa fa'ala zayd-un 'ayna?

what did Zayd-NOM where

★ 'what did Zayd do where?'

(29) a. mataa fa'ala zayd-un maa^θaa?

when did Zayd-NOM what

'Wen did Zayd do what?'

b. ★ maa^θaa fa'ala zayd-un mataa?

what did Zayd-NOM when

★ 'What did Zayd do when?'

(30) a. kayfa fa'ala zayd-un maa^θaa?

how did Zayd-NOM what

'How did Zayd do what?'

b. ★ maa^θaa fa'ala zayd-un kayfa?

what did Zayd-NOM how

★ 'What did Zayd do how?'

The ill-formedness of (28b), (29b) and (30b) can be readily explained by the constraint in (23) above. As for the well-formedness of (28a), (29a) and (30a), it can be captured by reformulating the constraint in (27) as in (31) below:

- (31) In a structure XYZ, where Y is a satellite argument moved by wh-movement and Z represents term arguments, wh-elements cannot appear in Z except for representing a [-human] term argument.

Finally, the fronting of a satellite argument by wh-movement bans the base-generation of another satellite wh-element elsewhere in the clause as can be shown in the following examples:

- (32) a. 'ayna ōahaba zayd-un 'amsi?

where went Zayd-NOM yesterday

'Where did Zayd go yesterday?'

- b. ★ 'ayna ōahaba zayd-un mataa?

where went Zayd-NOM when

★ 'Where did Zayd go when?'

- (33) a. kayfa saafara zayd-un 'ila-l-xalii j-i?

how travelled Zayd-NOM to DEF-Gulf-GEN

'How did Zayd travel to the Gulf?'

- b. ★ kayfa saafara zayd-un 'ayna?

how travelled Zayd-NOM where

★ 'How did Zayd travel where?'

To capture the ill-formedness of (32b) and (33b), (31) should be reformulated thus:

- (34) In a structure XYZ, where Y is a satellite argument moved by wh-movement and Z represents term and/or satellite arguments, wh-elements cannot appear in Z except for representing a [-human] term argument.

Having spelled out the facts and constraints of multiple wh-questions in Arabic, we shall now present a Government Binding account to explain why certain Arabic multiple wh-questions are grammatical while others are not.

3. *A Government Binding (GB) Account*

We have observed that wh-question movement in Arabic is obligatory. We have also observed that Arabic possesses what has been termed Multiple wh-questions, i.e., the occurrence of more than one questioned constituent in the same clause. Further, we have seen that Arabic does not allow for two wh-phrases to be fronted in the same clause. The question that arises here is that if wh-movement in Arabic is obligatory then how do we account for wh-phrases that remain in their base-position, in situ?

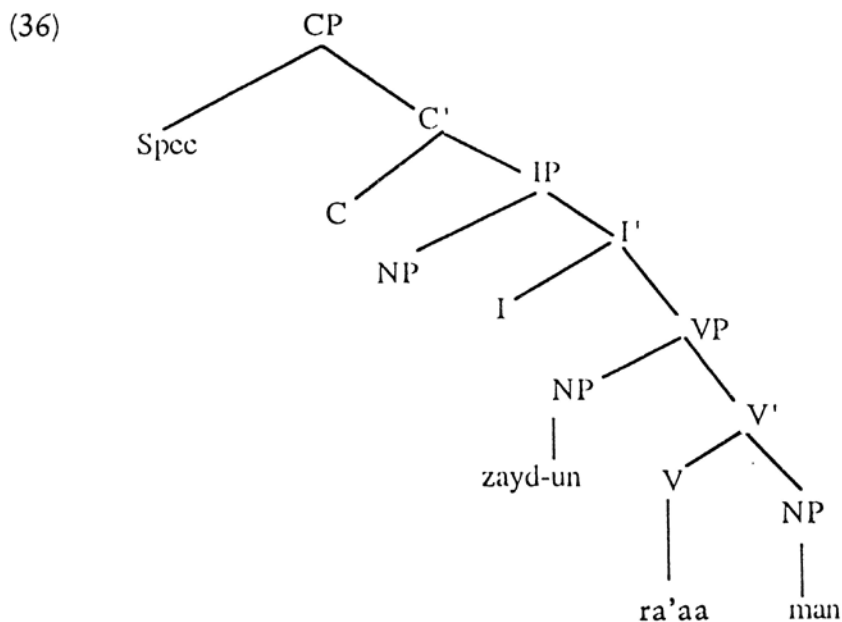
Following recent analyses of wh-questions, especially that of Haegeman¹², we shall argue that there are two instances of wh-movement: one obtains at S-structure while the other obtains at logical form (LF). We shall also argue that wh-movement at S-structure is a substitution process while that at LF is a version of an adjunction process¹³. Let us take the following example:

12 - Haegeman, 1991.

13 - CF. Lasnik & Saito, 1984.

- (35) ★ ra'aa zayd-un man
 saw Zayd-NOM who
 ★ 'Zayd saw who(m)?'

The D-structure of this sentence is as follows:



man moves to [Spec, CP] leaving a co-indexed trace. V obligatorily moves to I, and we get the S-structure:

- (37) man_i ra'aa zayd-un t_i?

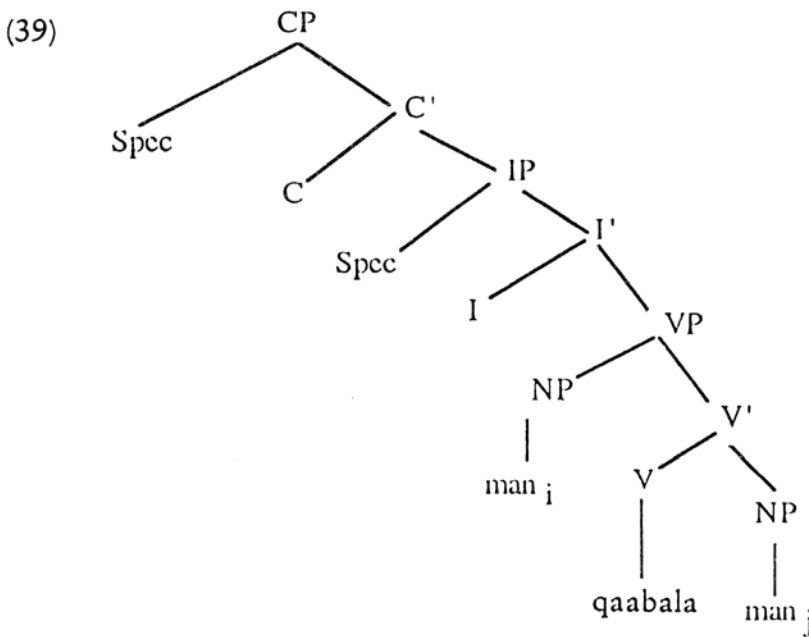
it should be noted that the wh-phrase moves to an unoccupied position; hence it is structure-preserving and the process is one of substitution.

However, if we take a multiple wh-question of the following

type:

- (38) man_i qaabala man_j?
 who met who(m)
 ‘Who met who(m)?’

Its D-structure will be:



First man_i moves to [Spec, IP]. Then it moves to [Spec, CP]. man_i has to move to [Spec, IP] first because this position is designated for the subject of the clause and by leaving a coindexed trace in this position, man_j will not be able to move to this position because it has already been occupied by a coindexed trace. This will force man_j to move directly to [Spec, CP] which has already been filled by man_i. The resulting phonetic form (PF) will be the following ungrammatical string.

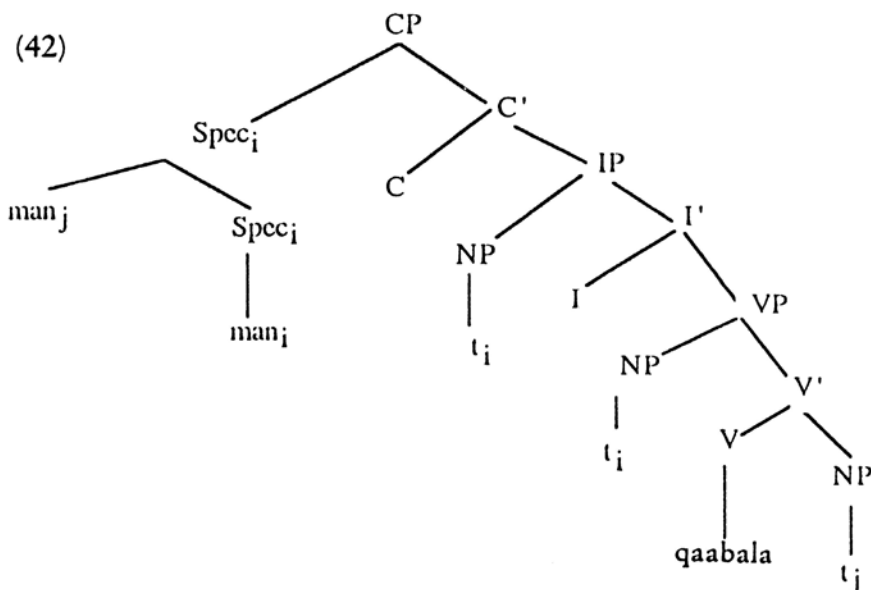
- (40) ★ man_i man_j qaabala
 who_i who_j qaabala
 ★ 'Who who met?'

How could we solve this problem? We shall propose, following Heageman¹⁴ that the wh-phrase which remains in situ is also moved to [Spec, Cp] in LF where it gets its interpretation by being associated with the wh-phrase that has already been moved there. This has been termed in the literature as wh-absorption. Moving a wh-element and adjoining it to an already moved element is also known as wh-raising. So the LF representation of the above example will be the following:

- (41) [CP man_j, man_i [IP x_i qaabala x_j]]

However, since there is only one position in [Spec, CP] we shall assume, adopting a modified version of Lasnik and Saito's analysis, that man_j moved to an adjoined position as the following tree-diagram illustrates:

14 - CF. Heageman, 1991.



First man_j moves to [NP, IP] leaving a coindexed trace in its original position, then it moves to [Spec, CP] leaving a co-indexed trace at [NP, IP]. man_i transmits its index to the Spec node. man_j is then moved and adjoined to Spec_i; it can not transmit its index and consequently has no influence on the Spec_i, since man_i is the head. The variable co-indexed with man_j is properly governed by the lexical verb, *qaabala*, the variable t_i in subject position is coindexed with man_i and with [Spec, CP]. Spec_i c-commands t_i and the first branching node dominating Spec_i dominates t_i . Thus the subject trace t_i is properly governed; it is antecedent-governed. It should be noted that wh-movement here is one of adjunction and not substitution and takes place at LF and does not carry over to the PF level.

To ensure that the proposed analysis applies to other cases of multiple wh-questions, let us consider the following example:

- (43) man 'ištaraa maaθaa?
 who bought what
 'Who bought what?'

If we assume vacuous movement of the subject, then the S-structure will be:

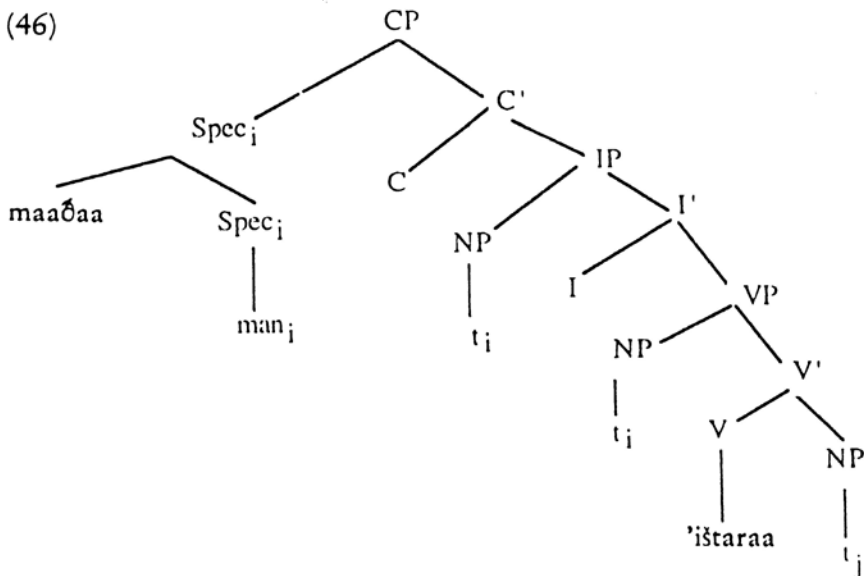
- (44) man_i [t_i 'ištaraa maaθaa]?

The rule of wh-raising will transform the S-structure (44) into the following LF.

- (45) maaθaa_j and man_i [t_i 'ištaraa t_j]

(For what thing j and what person_i, i bought j?)

The following tree-diagram represents the LF representation of the example above:



t_j is properly governed by the lexical head of its phrase, the verb *'ištaraa* and t_i is properly governed by its antecedent *man_i*. It should be mentioned that the above LF representation satisfies the Empty Category Principle (ECP), a condition on logical form representation which requires that empty categories be properly governed.

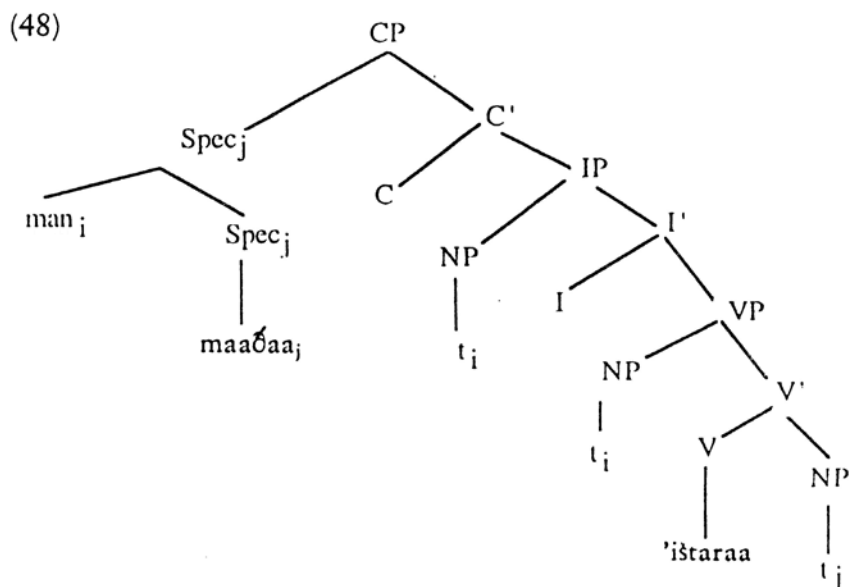
To confirm the plausibility of our analysis, we shall take the following ungrammatical example:

(47) ★ *maaǰaa_j ištaraa man?*

what bought who

★ 'What bought who?'

The LF representation of this example is the following:



maaḏaa_i moves first and assigns its index to [Spec, CP]. *man_i* then moves and gets adjoined to Spec_i, but it can not transmit its index to [Spec, CP]. It can be seen from the structure above that the trace *t_j* is properly governed by the lexical verb *istaraa*. However, *man_i* can not govern its trace *t_i* because the first branching node above *man_i* does not c-command its trace and this explains the ungrammaticality of this example - it violates the ECP condition.

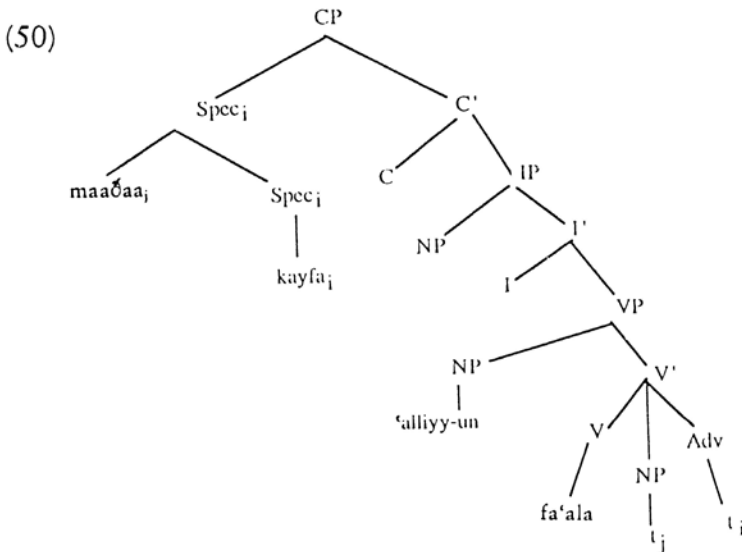
The previous examples of multiple wh-questions in Arabic have been mainly concerned with term arguments (subjects and objects) but what if we have a term argument and a satellite argument in the same clause. Would our analysis apply to these cases as well? consider the following example.

(49) kayfa fa'ala 'aliyy-un maaḏaa_i?

How did Ali-NOM what.

'How did Ali do what?'

The LF representation is the following tree-diagram:

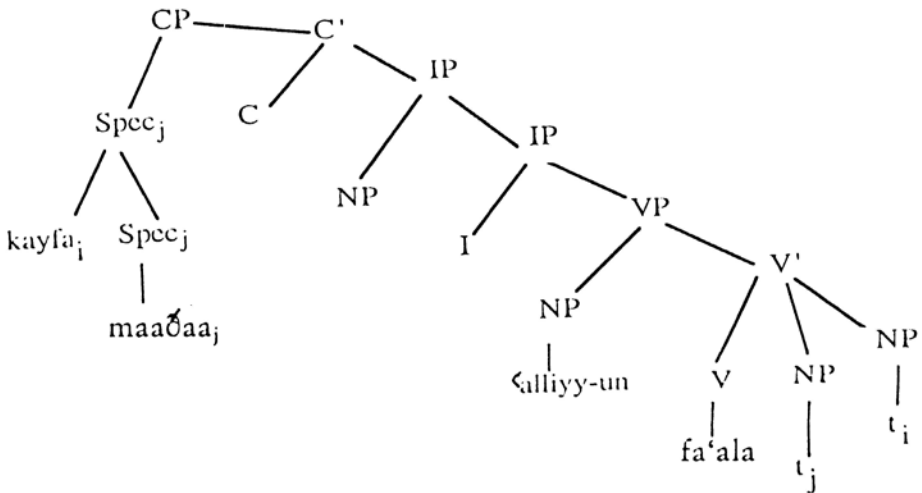


kayfa moves first to [Spec, CP] leaving a coindexed trace at its original position, t_i . *kayfa* assigns its index to [Spec, CP]. *maaḏaa* moves next and is adjoined to Spec_i , leaving a coindexed trace at its original position, t_j . Now it can be seen from the structure in (50) above that *kayfa* properly antecedent-governs its trace t_i , and the trace of *maaḏaa* is properly governed by the verb, *fa'ala*. Hence, the grammaticality of (49) is duly explained. However, if we front *maaḏaa* and leave *Kayfa* in situ, we shall get the following ungrammatical question:

- (51) ★ *maaḏaa fa'ala 'alyy-un kayfa?*
 what did Ali how
 ★ 'What did Ali (do) how?'

The tree-diagram in (52) represents the LF of (51):

(52)

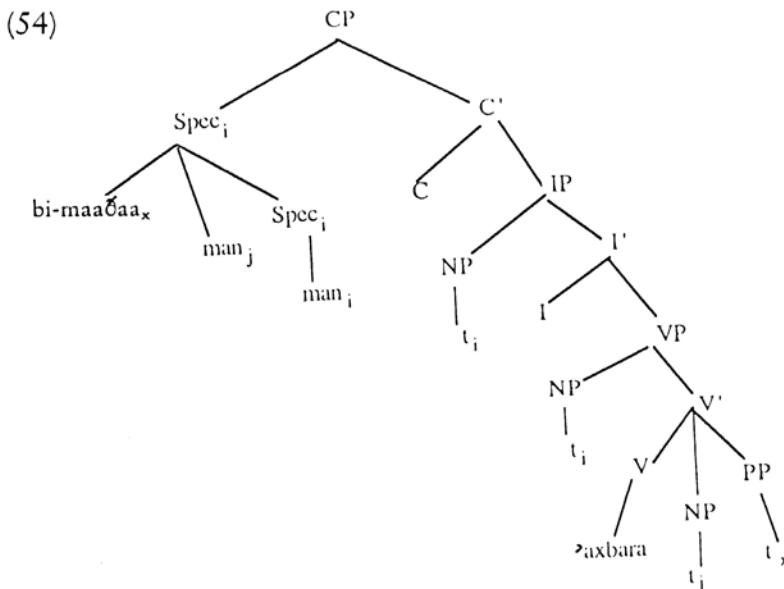


It can be seen from this tree-structure that *kayfa*, which is adjoined to [Spec, CP] cannot transmit its index to the Spec node because the index of *maaʕaa* has already been assigned to this node. Thus *Kayfa* fails to properly govern its trace t_i which means violating the ECP and this correctly explains the ungrammaticality of (51).

So far we have been dealing with cases where *wh*-movement in LF involves only two *wh*-elements in the same clause. The question to ask at this point is: could we question more than two *wh*-elements in the same clause? The answer is in the affirmative as can be illustrated in the following example:

- (53) *man_i 'axbara man_j bi-maaʕaa_x?*
 who told whom with what
 'Who told whom about what?'

(54) represents the LF structure of (53):



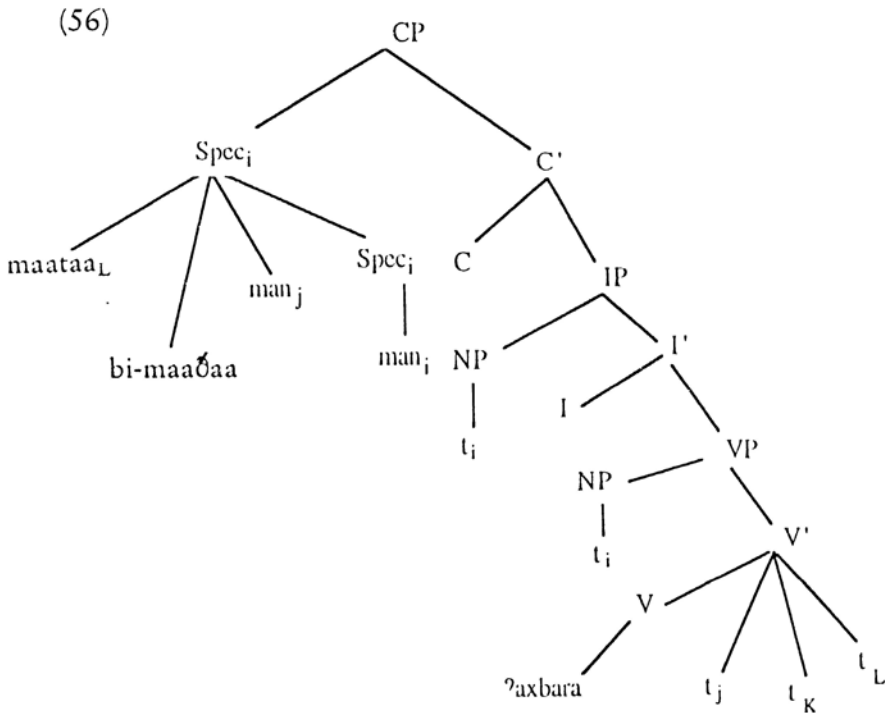
It is obvious from the structure above that man_i which transmits its index to [Spec, CP], properly antecedent-governs its traces because the first branching node above the $Spec_i$, man_i c-commands its traces. The trace of man_i is properly governed by the lexical verb "ʔaxabara". The trace of $maa\delta aa$ is also properly governed by the lexical verb through the preposition "bi - ". Now what if we have a satellite argument in addition to the term arguments as the following example illustrates,

(55) * man_i ʔaxbara man_j bi- $maa\delta aa_k$ mataa?

Who told who of what when.

* 'Who told who of what when?'

the LF structure of this example will be (56):



What has been said about the structure in (54) can be said about this structure because they are similar except for the satellite argument "mataa". While the traces of the term arguments are properly governed either by antecedent government or lexical head government "mataa", which is adjoined to [Spec, CP], cannot transmit its index to the Spec of CP, hence antecedent government to its trace t_L is ruled out. Also, the trace of the satellite argument (the adjunct) will be stranded with no proper government and this explains the ungrammaticality of (55) because t_L being ungoverned violates the ECP.

4. Conclusion

It can be concluded from the previous discussion that in addition to S-structure and D-structure, Arabic possesses LF. It has been shown that while wh-movement at S-structure is a substitution process; it is an adjunction process at LF with no reflex in the phonetic form. It has also been demonstrated that the ECP at LF provides a more general and natural explanation for the well-formedness conditions that have been established on the generation and movement of wh-elements in multiple wh-questions. This in turn adequately accounts for the ungrammatical cases encountered in the analysis of Arabic multiple wh-questions.

References

- Aoun, Y., N., Hornstein and D. Sportiche. Some Aspects of Wide Scope Quantification, *Journal of Linguistic Research*, 1, 1981: 69 - 95.
- Baker, C. L. Notes on the Description of English Questions: The Role of an Abstract Question Morpheme, *Foundations of Language*, 6: 1970: 197 - 219.
- Benmamoun, E. Null Pronominals in the Context of NP and QP. *Proceedings of the Eleventh West Coast Conference on Formal Linguistics*, ed. by J. Mead. Stanford, CA: Center for the Study of Language and Information, 1993: 32 - 43.
- Chomsky, N., On Wh-movement, *Formal syntax*, ed. by Culicover, p., et al., 1977: 71 - 132.
- Chomsky, N., *Lectures on Government and Binding*. Dordrecht: Foris, 1981.
- Chomsky, N., *Barriers*. Cambridge, MA: MIT Press, 1986.
- Farghal, M. *The Syntax of Wh-Questions and Related Matters in Arabic*. Ph. D. Dissertation. Bloomington, Indiana, 1986.
- Farghal, M. The Wh-movement Hypothesis: Counter-evidence from Arabic, *Papers and Studies in Contrastive Linguistics*, 29, 1994: 91 - 104.
- Fehri, F. Generalized IP Structure, Case, Inflection and VS Word Order, *MIT Working Papers in Linguistics*, ed. by Laka, et. al, 1989.
- Haegeman, L. *Introduction to Government and Binding Theory*.

Oxford: Blackwell Publishers, 1991.

Homeidi, M., Government and Binding and Case Assignment in Modern Standard Arabic, *Papers and Studies in Contrastive Linguistics*, 29, 1994: 123 - 139.

Lasnik, H. and M. Saito. On the nature of Proper Government, *Linguistic Inquiry*, 15 (2), 1984: 235 - 89.

Mohammed, M. "The Problem of Subject Verb in Arabic: Towards a Solution," *Perspectives in Arabic Linguistics*, ed. by M. Eid. Amsterdam: Benjamins, 1989.

