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WH-movement in English and Persian within the Framework of Government and Binding Theory

Fariba Abedi

M.A. in Linguistics

Ahmad Moinzadeh

Assistant Professor of Applied Linguistics,

Department of English, Faculty of Foreign Languages

University of Isfahan, Isfahan, Iran

E-mail: amoinzad@hotmail.com

Zohreh Gharaei (Corresponding author)

Department of English, Faculty of Foreign Languages

University of Isfahan, Isfahan, Iran

E-mail: gharaei.z@gmail.com

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Abstract

The present study is an attempt to compare WH-movement in English and Persian. In so doing, Chomsky's Government and Binding Theory has been used as the framework. Through the analysis of the examples provided, the researchers conclude that the application of WH-movement in English is to some extent similar to its application in Persian. Case filter principle, theta criterion and the dominance of case-generator over WH-word are among the similarities. The study also reveals some differences between English and Persian as far as generating interrogative sentences with question word is concerned. Mandatory nature of WH-movement rule in English as opposed to its optional nature in Persian, syntactic movement of question word in English as opposed to its non-syntactic nature in Persian,

syntactic trigger of WH-movement in English as opposed to its pragmatic trigger in Persian and finally the fixed syntactic position of complimentizer phrase specifier for WH-words in English as opposed to different syntactic positions question words might have in Persian are among the differences.

Keywords: Generative grammar, Government and Binding Theory, WH-movement, English, Persian

1. Introduction

WH-movement process is one of the various rules of move-α within the framework of Chomsky's Government and Binding Theory. When this rule is imposed, WH-question word moves from its underlying abstract position in the D-structure of the sentence and gives rise to the S-structure. Therefore, WH-movement signifies "movement of question component or interrogative phrase from an argument position toward the closest non-argument position which indicates complimentizer phrase" (Cook & Newson, 1977: 206). This movement might continue in a cyclic fashion, i.e. it can transfer WH-word from the position of the lower complimentizer phrase specifier to the position of upper complimentizer phrase specifier (Dabirmoghaddam, 2004: 440).

According to Radford (1981), an interrogative phrase is a phrase in the sentence containing one interrogative word such as *who*, *which*, *when*, *where*, *whom*, *what* and so on. He introduces four syntactic phrases which are subject to WH-movement:

- noun phrases having one WH-word:

  e.g.: What_i has he given t_i to Mary?

- adjective phrases containing one WH-word:

  e.g.: How anxious_i will Mary be t_i about her exam results?

- adjective phrases:

  e.g.: To whom_i can I send this letter t_i?

- adverb phrases:

  e.g.: How quickly_i will he drink that beer t_i?

2. How Do WH-words Work?

Chomsky (1957) believes that WH-movement rule is an optional and meanwhile conditional transformation (T_W), where T represents transformation and W denotes WH-word. According to him, as far as noun phrases are concerned, T_W is applied in two stages:

1) first, T_{W1} converts X-NP-Y chain into NP-X-Y. Therefore, its transformational effect is like that of T_q transformation which converts X_1-X_2-X_3 structure into X_2-X_1-X_3 to make yes/no interrogative sentences;

2) then, T_{W2} transformation converts the chain generated from applying T_{W1} to Who-X-Y structure if it represents a human noun phrase, and turns it into What-X-Y in the case of a non-human noun phrase.

As a result, T_W transformation is only applicable in chains to which T_q transformation, i.e. the transformation for yes/no interrogative sentences, has been already applied:

John # eat + past # an # apple # (John ate an apple.)

applying T_q transformation and did-insert ⇓

past – John – eat + an + apple (Did John eat an apple?)

applying T_W transformation ⇓

T_{W1}: John + past + eat + an + apple

T_{w2}: Who + past + eat + an + apple (Who ate an apple?)

2.1 WH-word Landing Position

According to Chomsky, the position toward which WH-word moves, i.e. landing position, is assumed as the position of complimentizer phrase specifier which is a non-argument position.

So, the sentence $Where_i$ *did John go* t_i? is the S-structure view of the D-structure *John did go where?* In which the WH-word *where* has moved from the position of noun phrase to the position of complimentizer phrase specifier. Figure 1 shows this movement:

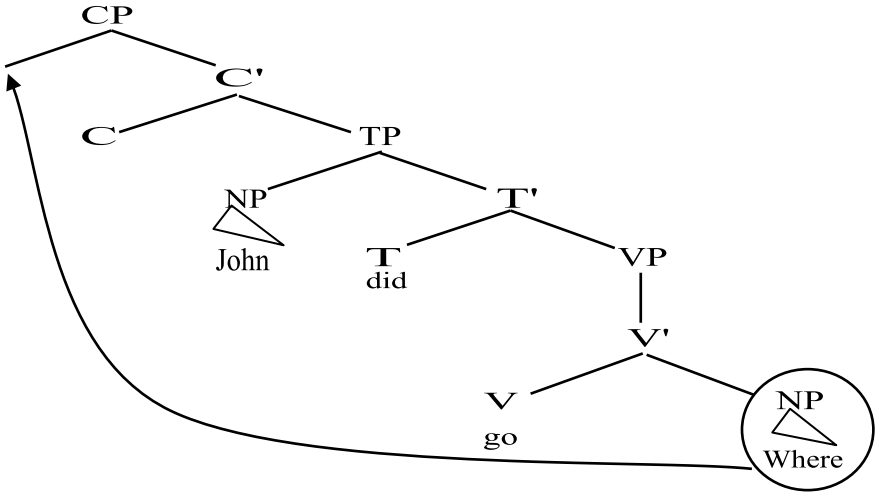


Figure 1. D-structure of the sentence "Where did John go?"

As evident, the movement of WH-word is toward the beginning of the sentence. To justify the landing position of WH-word, it should be stated that what moves in sentences as such is a complete interrogative phrase. When a complete phrase moves, the movement cannot be classified as an example of head-to-head movement; this kind of movement must be toward a position other than head. It is exactly the empty position of complimentizer phrase specifier.

Besides, the movement of WH-word toward the position of complimentizer phrase specifier reveals word orders in interrogative sentences. It means that such sentences also include the movement of auxiliary verb toward the head of complement (T → C movement). Therefore, two movements are observed in the aforementioned sentence: auxiliary movement and WH-movement. That is why the sentence **Where John did go?* is ungrammatical. Figure 2 illustrates both movements in the sentence:

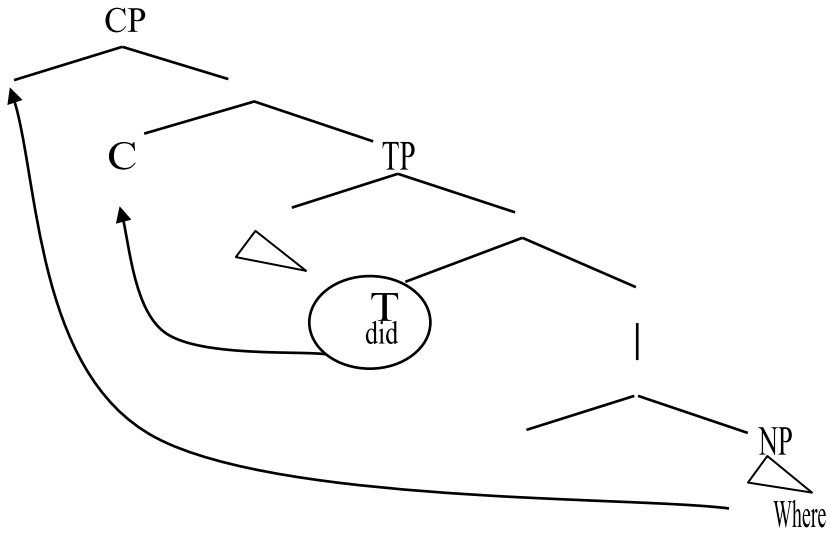


Figure 2. WH and T→C movements in the sentence "where did John go?"

As shown in the diagram, the interrogative phrase is placed on the left side of the auxiliary verb which is in turn situated in the head position of complimentizer (C). It implies that the interrogative phrase should move to a position higher than the head of complement (C). The

only available empty position for this movement is the position of complementizer phrase specifier (Carnie, 2002: 284).

3. Trigger of Question Word Movement

As Chomsky believes, any movement should necessarily have a trigger to be regarded as a syntactic process. He attributes the trigger of question word movement to the interrogative characteristic so that this feature, which is represented by [+WH], exists in the position of complimentizer (C) of an interrogative sentence containing WH-word. Thus, the interrogative sentence moves toward the position of complimentizer phrase specifier to "approach" the [+WH] feature. In other words, the interrogative phrase moves to the respective position to review the [+WH] or interrogative feature (Carnie, 2002: 285). It must be also noted that the rule of WH-word movement only moves the noun phrase whose case features have been formerly reviewed so as to observe the case filter principle; otherwise, the sentence will be non-grammatical. Passive interrogative sentences in English are suitable to demonstrate this principle:

Who was kiseed?

Cook and Newson (1997) propose two essential principles related to the trigger of WH-word movement:

1. WH-criterion:

   According to this principle, all complimentizers having [+WH] feature should possess a [+WH] element. For example, when a complimentizer like *whether*, which has [+WH] interrogative feature exists in the head position, this principle is observed.

2. Specifier-head agreement principle:

   Based on this principle there is an agreement between the head of a phrase X and the element that occupies the position of that phrase specifier. This specifier-head relationship is a universal feature among all languages and can be applied to all phrases. Therefore, complimentizer phrase (CP) specifier matches with the head of the complimentizer phrase (C) via having [+WH] interrogative feature.

Now, if a WH-having element moves toward the position of complimentizer phrase specifier which also possesses [+WH] interrogative feature, it will suffice for observing the first condition. Although the position of complimentizer head (C) may not have the feature of [+WH], the specifier which matches with it will have such a characteristic. Consequently, the first condition is satisfied either through head of complimentizer phrase (C) which has [+WH] feature, or through the [+WH] feature of complimentizer phrase specifier (CP) which is in agreement with the head.

Later, Cook and Newson presented a principle called "complimentary of the first condition" based on which a [+WH]-feature-having element cannot occupy a position with [-WH] feature. For the same reason, the following sentence is ungrammatical:

*I think who John kissed?

In the above sentence, the verb *think* has been categorized as the complimentizer of a complimentizer phrase with [-WH] feature. Therefore, an element having [+WH] feature, even if it can move toward the higher complimentizer phrase (CP), will not be allowed to stay in that position:

Who do I think John kissed?

According to Mirsaeeidi (2006: 79), trigger of question word movement is not the same in Persian interrogative sentences which include applying the transformational rule of question word movement. This type of interrogative sentences is classified into two categories:

- interrogative sentences with question word movement and pragmatic trigger,
- interrogative sentences with question word movement and patterning trigger from the original language in the process of translation.

4. Types of WH-movement

4.1 Classification Based on Movement Distance

4.1.1 WH-movement without Distance

WH-movements in simple sentences, i.e. sentences which are made of only one clause, are called without distance WH-movements.

e.g.: What_i does she do t_i?

4.1.2 WH-movement with Distance

This kind of WH-movement occurs in compound sentences which are composed of a main clause and one or several embedded clauses. In such sentences the WH-word moves from argument position of the embedded clause to the position of the complimentizer phrase specifier of the main clause. This type of movement is designated cyclic WH-movement. Following is an example:

e.g.: [CP What_i did [TP he believe [CP that [TP he saw t_i]]]]?

4.2 Classification Based on the Position of Applying the Movement

4.2.1 Syntactic Movement

In this type of movement, the transformational rule of WH-movement is applied to the D-structure of the sentence. The result of this application, which is the placement of WH-word in the position of complimentizer phrase specifier, is manifested in the S-structure of the sentence.

Applying syntactic movement is mandatory in languages which incorporate it. If WH-word does not move in such languages and is not placed in the position of complimentizer phrase

specifier in S-structure, the outcome will be an ungrammatical sentence.

4.2.2 Logical Form Movement

In some languages such as Chinese and Japanese, the movement of WH-word is not a syntactic one. In these languages, WH-word remains in its original position and for this reason such languages are called "WH-word in original position" (Dabirmoghadam, 2004: 432). In Government and Binding Theory it is believed that although WH-words do not move in syntactic part in these languages, a rule such as WH-movement in logical form level is applied. Since its application is done in the aforementioned level, its manifestation cannot be observed in the S-structure of the sentence.

5. Limitations of Question Word Movement

Depending on the items which can be moved and the condition under which they can be moved, some limitations are imposed on the process of question word movement. In fact, certain types of question word movements, and not all of them, are allowed to a position outside a complimentizer phrase (CP). Accordingly, two principles must be satisfied in the aforementioned process, and failure to satisfy each of them would result in the generation of ungrammatical sentences. These two principles are as follows:

1. Constituent command=C-command
2. Subjacency condition

5.1 Constituent Command = C-command

According to the principle of constituent command, after the movement of WH-word toward the position of complimentizer phrase specifier, the moved element, which is the WH-word, should be dominant over its effect, but none of them shall be dominant over the other one.

For example, the D-structure of the sentence $What_i$ *did John say* t_i*?* is as follows:

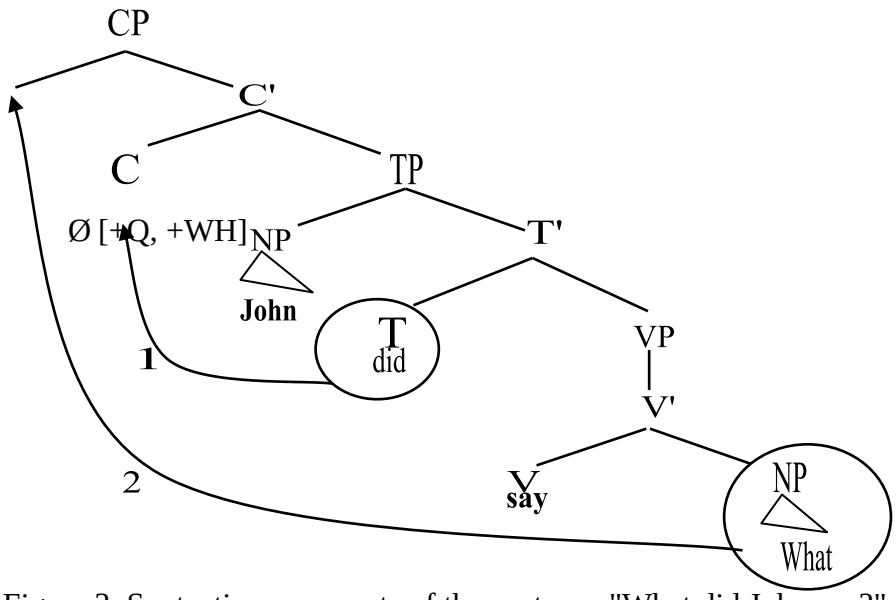


Figure 3. Syntactic movements of the sentence "What did John say?"

As illustrated in the tree diagram, the WH-word *what* which is in the position of complimentizer phrase specifier has constituent command over its effect which is in the lower noun phrase position. Therefore, this sentence is grammatically correct. This relationship is demonstrated in the S-structure of the sentence:

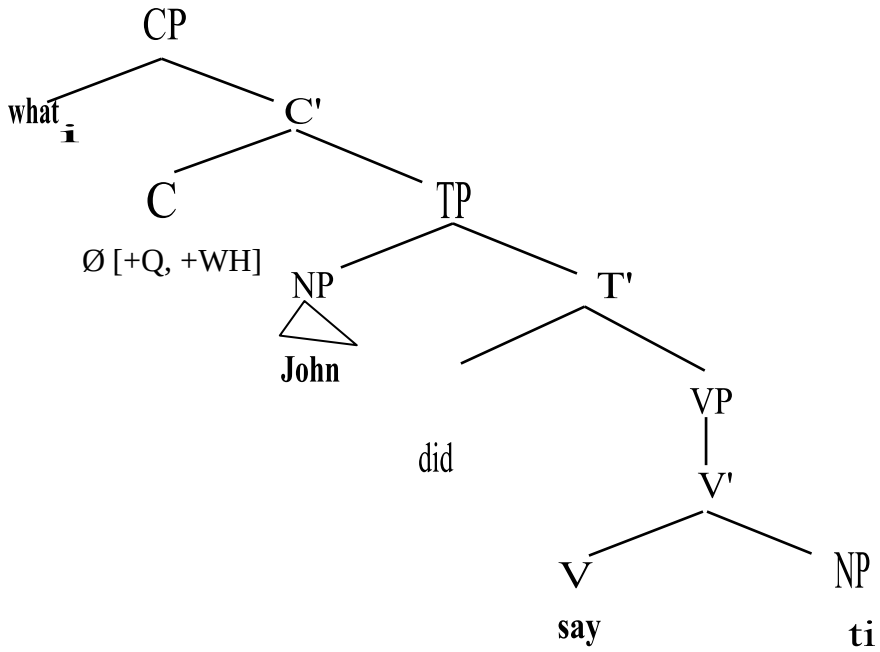


Figure 4. S-structure of the sentence "What did John say?"

5.2 Subjacency Condition

The phenomenon of "complex NP Island" was mentioned by Ross (1967) for the first time and based on it moving outside a clause which is inside a noun phrase is not permissible. Here the term "island" has a figurative meaning. Island is a place from which it is not possible to exit since it is surrounded by water. Therefore, the movement is restricted to the locations where it is possible. The syntactic islands are in the same condition in that it is not allowed to move outside them; inside movements are solely possible. Compound noun phrases are among the islands out of which movement is forbidden. Therefore, the following sentence in which the WH-word what has moved out of the Compound Noun Phrase Island is grammatically incorrect (Carnie, 2002: 294):

*What did Bill make | [$_{NP}$ the claim [$_{CP}$ that he read t $_{i}$ in the syntax book]?
Compound Noun Phrase Island

On this basis, Chomsky proposed the notion of "WH-island" stressing that when an interrogative phrase moves to the position of complimentizer phrase (CP), that complimentizer phrase (CP) is considered as an island and any movement outside of this island leads to ungrammatical sentences. "WH-island is shown in the following island:

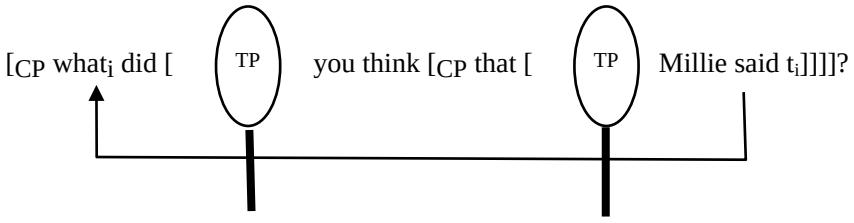
I asked [$_{CP}$ what$_i$ John kissed t_i].
WH-island

As evident, the WH-word *what* has moved inside the island, not out of it, and hence, the sentence is grammatical.

According to this principle, simultaneous movement of two WH-words is not allowed in one interrogative sentence, but the movement of one of them is authorized and the movement of the WH-word located inside the WH-island is forbidden. For the same reason the following sentence is ungrammatical:

*[CP How$_j$ do [TP you wonder [CP what$_i$[TP John bought t_i t_j]]]]?

Later Chomsky attempted to unify these two restrictions. He said that the movements are local and at the same time cyclic, i.e. instead of one-step straight movement of interrogative phrase from argument position to non-argument position of complimentizer phrase, it is better to explain the movement in a step-to-step fashion; the interrogative phrase initially moves to the position of lower complimentizer phrase specifier, and then from there moves toward the next complimentizer phrase specifier which is located in higher position. Chomsky (1977) called this process "Comp-to-Comp movement rule". He proposed the principle of "subjacency condition." As discussed earlier, according to this principle passing of any movement is only permitted from one barrier phrase (NP and TP). This principle guarantees local features of all movements. For further clarification, an example by Carnie (2002: 196) is given:



In this example, WH-movement has moved from two barrier phrases (TP) implying the violation of subjacancy condition, though the sentence is completely grammatical. This can be justified by "Comp-to-Comp rule" as well as cyclic WH-movement.

6. Persian Interrogative Sentence Types with Question Word

There are four types of interrogative sentences having question word in Persian:

- interrogative sentences without the movement of question word and any other parts of the sentence,
- interrogative sentences without the movement of question word and with the movement of other parts of the sentence,

- interrogative sentences with the movement of question word and pragmatic trigger,
- interrogative sentences with the movement of question word and patterning trigger from the original language in the process of translation.

The procedure of generating interrogative sentences which have question words in Persian is as follows: the question word or interrogative phrase generates the interrogative sentence just through substituting the place of different syntactic phrases such as noun phrase, adverb phrase, adjective phrase and prepositional phrase in D-structure. The sentence in the S-structure is seen just as it is in its D-structure signifying the fact that in both D-structure and S-structure it is located in the same position without applying any transformation. Two principles of case filter and theta criterion are met here. Following is an example:

[TP [NP چه کسی] [T [VP کتاب] [V خرید]]]؟

The interrogative phrase in this sentence is the question word چه کسی (meaning who) that substitutes the place of the subject of the sentence, which is a noun phrase, to construct an interrogative sentence in the D-structure. This word is in the aforementioned argument position. This question word receives the subjective state from the [+tense] inflection in the same position to meet the case filter principle. Meanwhile, the question word چه کسی is placed under government of [+tense] inflection and agreement TP so as to be definable within the framework of rules in case theory. The verb خرید (meaning buy) is assigned two roles: an external experience role and an internal patient role. In the sentence above, the word کتاب (meaning book) plays the theta patient role as the object of the verb. The question word چه کسی receives the theta experience role from the verb خرید for observing theta criterion principle. The question word is in the same position both in D-structure and S-structure without being applied to the transformational rule of question word movement. As a consequence, the resulting sentence is an interrogative sentence having a question word which, despite the fact that the rule of question word movement is not applied to it, is grammatically correct. The following tree diagram represents how the constituent parts of an interrogative sentence are related to one another:

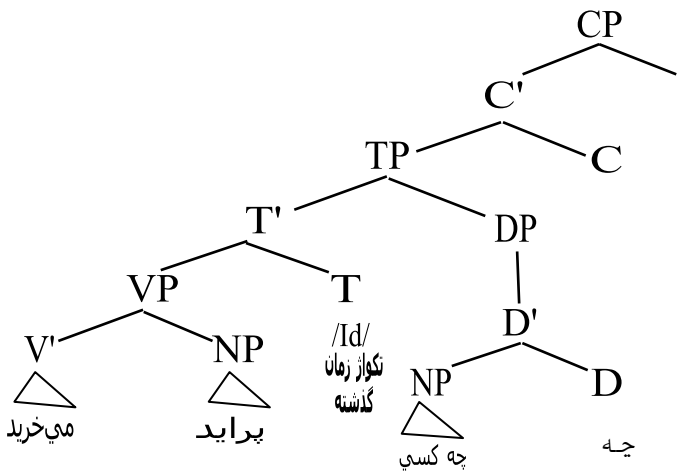


Figure 5. Tree diagram of the Persian interrogative sentence "چه کسی کتاب خرید؟"

As the diagram shows, the [+tense] inflection, which is a vocabulary head and grants the subjective case to the question word چه کسی, governs on the sentence for having structural dominance on it. Another reason is that the maximal projection that dominates over the question word چه کسی is also dominant on [+tense] inflection. There is no consensus among linguists regarding the landing position of question words in interrogative sentences containing question words in Persian. Miremadi (1997) holds the opinion that question word movement is toward the beginning of the sentence, but he has not exactly specified the landing position. Kahnemuyipour (2001) believes that the specifier of verb phrase is the landing position of question word. In fact, all the words about which the question word asks a question are located in the post-verb position in declarative sentences, and the pre-verb position in interrogative sentences with question words.

(a) statement sentence: حسن کتابو داد به **علی**. (Hassan gave the book to Ali.)
interrogative sentence: حسن کتابو به **کی** داد؟ (To whom did Hassan give the book?)
(b) statement sentence: علی کتابو گذاشت **رو میز**. (Ali put the book on the table.)
interrogative sentence: علی کتابو **کجا** گذاشت؟ (Where did Ali put the book?)

Even with the assumption that verb phrase specifier is the landing position of the question word, there exist sentences that reject this assertion because of having a landing position other than the aforementioned one. To illuminate the point two examples are given:

کجا این مذاکرات t_i انجام می پذیرد؟ (Where do these negotiations take place?)

چراi در مقابل امویان t_i قیام کردی؟ (Why did you upraise against Umayyad?)

Having these examples in mind, one can deduce that it is not possible to predict a fixed syntactic landing position for question word due to its pragmatic trigger. In fact, the question word movement, and consequently its landing position, is dependent on the textural and pragmatic considerations according to which the speaker moves the respective word. In addition, the intention s/he has from this sentence which can be accentuating a task or a person, expressing hopefulness, expressing disappointment, expressing regret, emphasis, objection, etc can play a role. Therefore, there is not always a fixed and ever-empty position for landing of question word in Persian interrogative sentences.

Furthermore, Mirsaeeidi (2006) believes that the landing position of question words in Persian, i.e. the position toward which the question word moves, is dependent on the type of question word. It implies that every question word tends to have a specific position in the sentence.

7. Comparing Interrogative Sentences with Question Word in English and Persian

As it has been discussed so far, the characteristics of WH-movement can be summarized as follows:

1) WH-word leaves a trace after its movement;
2) WH-word has constituent command over its effect after the movement;

3) subjacency condition is evidently observed while WH-movement rule is applied;
4) island constraints are taken into account in the structure of these sentences and in WH-movement process; and
5) principles of theta criterion and case-filter are satisfied when WH-movement rule is applied.

Through the comparison of the above features, the similarities and differences between Persian and English can be identified.

7.1 Similarities

The following similarities were observed between English and Persian interrogative sentences having question word:

1) observing case filter principle;
2) observing theta principle; and
3) dominance of case-generator to WH-word

7.2 Differences

The following differences were observed between English and Persian as far as interrogative sentences with question words are concerned:

1) the mandatory nature of WH-movement rule in English versus the optional nature of it in Persian;
2) fixed syntactic position of complimentizer phrase specifier for WH-words in English versus various syntactic positions of question words in Persian;
3) different D-structure and S-structure in English interrogative sentences versus identical D-structure and S-structure in Persian (in case of not applying WH-movement);
4) necessity of observing the two principles of constituent command and subjacency condition as constraint of WH-movements in the process of generating interrogative sentences in English versus their optional nature in Persian (in case of not applying WH-movement); and
5) syntactic trigger in the form of reviewing interrogative feature included in the position of complimentizer head for WH-movement versus pragmatic trigger of this movement in Persian.

8. Conclusion

According to the findings of this study, interrogative sentences having question word in English and Persian have some similarities as well as differences. The study revealed that observing case filter principle and theta criterion as well as the dominance of case-generator over WH-word are among the similarities. However, there are also some differences in the application of this rule between English and Persian: mandatory nature of WH-movement rule in English as opposed to its optional nature in Persian, syntactic movement of question word in English as opposed to its non-syntactic nature in Persian, syntactic trigger of WH-movement in English as opposed to its pragmatic trigger in Persian and finally the fixed

syntactic position of complimentizer phrase specifier for WH-words in English as opposed to various syntactic positions of question word in Persian are among them.

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