

# Remnant-movement Analysis of Questions with Final Wh-words

## Remnant-movement Analysis of Questions with Final Wh-words in Jordanian Arabic

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**Abstract:** This paper investigates a subclass of questions of which wh-word appears question-finally in Jordanian Arabic. It proposes that such questions are derived by movement of the wh-word to the left periphery of the question (i.e. the Spec of Focus Phrase; cf. Rizzi 1997), followed directly by movement of the remnant TP to a higher position (the Spec of Topic Phrase), c-commanding the already-moved wh-word. Pragmatic and syntactic evidence is supplied to motivate this proposal. Competing alternatives of the derivation of such questions (e.g. in-situ analysis and right-ward movement of final wh-words) are dismissed, following empirical evidence.

**Keywords**

Wh-movement - Remnant Movement - Jordanian Arabic - Left Periphery

## 1. Introduction

Jordanian Arabic (henceforth, JA) is predominately a wh-movement language where wh-words/expressions move to the left periphery (of the respective clause) in the overt-syntactic cycle (i.e. before the Spell-out point) (Abdel Razaq 2011, Jarrah 2017a,b, Jarrah 2019a). This property of JA is shown in the following examples. Sentence (1a) is a statement; sentences (1b-d) are possible derived questions of (1a).

- (1) a. *ʔiz-zalameh*                      *baaʕ*                      *ʔis-sijjaarah*  
the-man                      sold.PERF.3SG.M                      the-car  
*ʔimbaariħ*                      *bi-s-suug*  
yesterday                      in-the-market

'The man sold the car yesterday in the market.'

- b. *miin*                      *baaʕ*                      *ʔis-sijjaarah*  
who                      sold.PERF.3SG.M                      the-car  
*ʔimbaariħ*                      *bi-s-suug*  
yesterday                      in-the-market

'Who sold the car yesterday in the market?'

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c. <i>ʔeef</i>	<i>ʔiz-zalameh</i>	<i>baaʕ</i>
what	the-man	sold.PERF.3SG.M
<i>ʔimbaariḥ</i>	<i>bi-s-suug</i>	
yesterday	in-the-market	
'What did the man sell yesterday in the market?'		
d. <i>mata</i>	<i>ʔiz-zalameh</i>	<i>baaʕ</i>
when	the-man	sold.PERF.3SG.M
<i>ʔis-sijjaarah</i>	<i>bi-s-suug</i>	
the-car	in-the-market	
'When did the man sell the car in the market?'		

The de facto (standard) analysis of questions (1b-d) is that the wh-word that appears question-initially is base-generated in the same structural position of its corresponding declarative information (e.g., the object wh-word *ʔeef* in (1c) is base-generated as a complement of  $V^0$ ). Afterwards, the given wh-word undergoes an XP-movement to the left periphery (CP) of the relevant question. This movement occurs before the derivation of the question is sent to the interface levels (PF and LF) (see, e.g., Farghal 1994, Jarrah 2017a,b). This analysis essentially accounts for the morphological realization of the wh-word at the beginning of the question. Additionally, there is no  $T^0$ -to- $C^0$  movement in JA wh-questions, something that directly accounts for the occurrence of the (main) verb to

the right of the subject rather than the moved wh-word (effectively in non-subject wh-questions; see (1c,d)).

On the other hand, there exists some type of questions in JA where the wh-word is placed at the very end of the respective question. Questions in (2) are representative of this phenomenon, which is known with different terminologies such as post(-posed) wh-questions and final wh-questions (Myers 2007, Steensig and Drew 2008, Rosemeyer 2018). In this research, we refer to this phenomenon as P(ost)-wh-questions (with no commitment to the syntactic analyses of the relevant proposals).<sup>1</sup>

- (2) a. *baaʕ*                      *ʔis-sijjaarah*                      *ʔimbaariħ*  
          sold.PERF.3SG.M    the-car                      yesterday  
          *bi-s-suug*                      *miin*  
          in-the-market                      who

'Who was that sold the car yesterday in the market?'

- b. *ʔiz-zalameh*                      *baaʕ*                      *ʔimbaariħ*  
          the-man                      sold.PERF.3SG.M                      yesterday  
          *bi-s-suug*                      *ʔeef*  
          in-the-market                      what

'What was that the man sold yesterday in the market?'

Although such questions are not conventional but occasional (i.e. they are not the mainstream mechanism of wh-question formation) in JA, their syntactic properties and derivation undoubtedly offer insights into the (narrow-)syntax properties of question formation in JA (and possibly in other Arabic dialects with similar properties).

A point that is worth mentioning here is that such questions are productive in JA. Most consulted JA speakers (100 informants of different ages, backgrounds, and sexes) regard such questions as acceptable and even normal (i.e. not idiosyncratic), however, with unique properties that distinguish them from (unmarked) questions with initial wh-words. These properties include their special rising intonational contours (i.e., more emphatic focus is placed on the final wh-word, and there is a prosodic break between the previous linguistic material of the question and the final wh-word) and expressibility of the speaker's attitude. The high acceptability of such questions among native JA speakers motivate us to explore their natural frequencies, an aim for which a naturally-occurring corpus is built. More information about the corpus is provided in Section 2 which also sets the scene of the paper. Section 3 discusses the pragmatics of P-wh-questions in JA. Here we show that P-wh-questions bear particular pragmatic functions, including REPEAT and REPAIR (Fiengo 2009 and Rosemeyer 2018). Section 4 presents our proposed syntactic account of P-wh-questions in JA. The main proposal is that P-wh-questions are

syntactically derived by two consecutive movements. The wh-word first moves to the Spec of Focus Phrase, a separate layer within Rizzi's 1997 CP system. Second, the remnant TP moves to the higher Spec of Topic Phrase (Rizzi 1997), c-commanding the moved wh-word. This section also discusses several pieces of syntactic evidence in favour of the proposed analysis and dismisses other syntactic competing alternatives of the proposed analysis. Section 5 is the conclusion.

## 2. P-wh-questions in JA

As mentioned above, JA is predominately a wh-movement language. Although wh-in-situ questions (known also as echo-questions for some researchers) can be used in this language, particularly to deliver specific functions, the mainstream mechanism of wh-formation is through fronting wh-words/expressions to the beginning of the questions (see the examples in (1b-d) above). The instances in (3) below are wh-in-situ questions which are mainly produced by a special intonational contour (with rising intonation).

- (3) a. *ʔiz-zalameh*                      *baaʕ*                      *ʔeef*  
         the-man                      sold.PERF.3SG.M                      what

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<i>ʔimbaariḥ</i>	<i>bi-s-suug</i>
yesterday	in-the-market

'The man sold what yesterday in the market?'

b. <i>ʔiz-zalameh</i>	<i>baaʕ</i>	<i>ʔis-sijjaarah</i>
the-man	sold.PERF.3SG.M	the-car
<i>mata</i>	<i>bi-s-suug</i>	
when	in-the-market	

'The man sold the car yesterday when in the market?'

Note that the wh-word in (3a,b) appears in the same position of the corresponding declarative information. For instance, the object wh-word in (3a) appears to the right of the main verb and to the left of temporal and spatial information, exactly in the same environment of the object in declarative sentences (see (1a)). This can be syntactically interpreted as that the object wh-word remains in its base-generated position as the complement of  $V^0$ , without (overt) movement to the left periphery.

One main property of wh-in-situ questions in JA is that they are used as a direct way to ask about new information. As the informants of the study indicate, the questions in (3) are said when the sought-for information are important for the speaker.

This brief discussion of wh-in-situ questions is important as it reveals that P-wh-questions (see the example in (2) above) are not true

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instances of wh-in-situ questions. Unlike the case in the latter questions, the wh-word appears at the very end of P-wh-questions. At face value, the wh-word in P-wh-questions is post-posed to the end of the question, preceded by the other linguistic material of the question. This is clearly shown in (2b) above, which we reproduce here as (4).

(4) <i>baaʕ</i>	<i>ʔis-sijjaarah</i>	<i>ʔimbaariħ</i>
sold.PERF.3SG.M	the-car	yesterday
<i>bi-s-suug</i>	<i>miin</i>	
in-the-market	who	
'Who was that sold the car yesterday in the market?'		

The wh-word *miin* appears question-finally, preceded by the previous linguistic material of the question. This clearly contrasts with the position of the subject in declarative sentences where the subject normally appears sentence-initially. If question (4) is treated as a wh-in-situ question, the whole material before the subject wh-word should move to a higher structural position, so the linear word order is maintained. In this research, we provide evidence for such movement; however we also provide evidence for the movement of the subject wh-word *per se* to the left periphery, a matter that speaks against the wh-in-situ status of the wh-word of P-wh-questions.



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As mentioned above, P-wh-questions are productive and acceptable among JA speakers. 100 native speakers of JA (coming from different parts of Jordan) accept such questions, especially when they are used as a reaction of misheard or misunderstood information (which arise when, e.g., there is much background noise) (See section 3). In order to determine the frequencies of P-wh-questions in JA, a corpus of naturally-occurring data is built. The corpus consists of two main parts: spontaneous conversations and interviews. As for the first part, 60 conversations (each conversation is held between 6 to 8 participants and lasts 20-30 minutes) are recorded upon the approval of all participants who are told about the main purpose of the study after recordings are done (so the results are not prejudiced). The whole corpus of spontaneous conversations reached about 150000 words. 304 questions are found; 33 questions of them were P-wh-questions. The 33 P-wh-questions stand for 9.2% of the total number of questions. Three questions with an object wh-word, where no temporal, spatial, causal information is used, are eliminated, considering the proviso that such questions would be instances of wh-in-situ questions.

As for the interviews, 25 participants of JA speakers coming from the four main cities of Jordan (Amman, Irbid, Zarqa, and Jerash) and the rural areas of the north of Jordan are interviewed by the two researchers. The interviewees were asked questions about their acceptability of some made-up P-wh-questions. Recourse to interviews is mainly motivated by the

assumption that negative evidence (which does not normally occur in corpora) is an important indication of the inner structure of syntactic constructions (see, e.g., Holmberg 2017). The interviewees were also asked about the main occasions where such questions are acceptable.

Analysis of all of P-wh-questions found in the corpus in addition to the interviewees' responses reveals that such questions are not used to ask for new information. Rather, they are deployed to either confirm or doubt some information, already spoken by interlocutors. They are also used when the speaker fails to hear the interlocutors properly. Accordingly, this use of P-wh-questions entails that such questions are in fact reactions to the ongoing discourse. Evidence for this comes from, among other things, the fact that P-wh-questions, unlike questions with initial wh-words or in-situ questions, are strongly disfavored in out-of-blue contexts. The following section is allocated for pragmatic discussion of the use of P-wh-questions in JA. This discussion provides a clear way of understanding of the syntax of such questions.

### **3. Pragmatics of P-wh-questions**

According to our corpus in addition to the informants' views on the use of P-wh-questions, it appears that such questions are never used to start a

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conversation or appear in out-of-the-blue contexts. They are only found as a subpart of an ongoing conversation, primarily to perform two functions, namely REPEAT and REPAIR in sense of Rosemeyer (2018), following Fiengo (2009). Rosemeyer (2018) explores the pragmatic functions of what she calls postposed wh-interrogatives. She shows that such questions have a strong anaphoric character, being largely governed by 'Common Ground' understood to be a set of presupposed propositions (cf. Stalnaker 2002). Following Fiengo (2009), Rosemeyer (2018) proposes that postposed wh-interrogatives are indicative of the fact that the speaker is not able to realize the assertion made by the interlocutor. They are typically a request 'for the information necessary to complete the speech act' (p. 287). This is actually what P-wh-questions in JA are about. The following dialogue shows this function.<sup>2</sup>

(5) (context: two relatives discussing who broke one of their little sons' hand)

Speaker A: *dʒidd-i*                      *kasar*                      *?iid*    *jazan*.

Grandfather-my              broke.PERF.3SG.M              hand    Yazan

‘My grandfather broke Yazan’s hand.’

Speaker B: *kasar*    *?iid*                      *jazan*                      *miin?*

broke   hand                      Yazan                      who

‘Who was that broke Yazan’s hand?’

Speaker A refers to the discorsal fact that his grandfather broke Yazan's hand. Speaker B performing the P-wh-question presents himself as being unable to realize the assertion of Speaker A's utterance. This gives rise to what Ginzbrug (2012) call as a communicative mismatch.

Rosemeyer (2018, p. 299) argues for several discourse/pragmatic functions of post wh-interrogatives in Spanish: REPAIR, REPEAT, EXPLAIN, CHALLENGE, and ELABORATE. Our corpus reveals that P-wh-questions in JA can deliver these functions, however with noticeable occurrence of REPAIR and REPEAT.

Conversational REPAIR results when a speaker changes his/her mind in the process of uttering the sentence. For instance, instead of uttering an assertive sentence, he/she produces a P-wh-question that repairs his/her own previous utterance. Dialogue in (6) provides an illustrative example of this function.

(6) (*Context: Some family, referred to as  $\text{?ildzamaa}\text{ʕa}$  'the people', reject marrying one of their daughter to one of the interlocutors' relative).*

Speaker A:	$\text{?il-dzamaa}\text{ʕa}$	$\text{ma}$	$\text{giblu}$
	the-people	NEG	accept
	$\text{ji}\text{hku}$	$\text{ʕan}$	$\text{?is-sabab}$

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talk about the-reason

'The people did not accept talking about the reason'

Speaker B: *ʔisʔal* *χaalid* *bukrah* *ʔan* *ʔil-mawtʕooʕ*

Ask Khalid tomorrow about the-topic

'Ask Khalid tomorrow about the topic (reason).'

Speaker A: *leef* *χaalid* *kaan* *muf* *mihtamm*

Why Khalid was NEG interested

'Why Khalid! He was not interested.'

Speaker C: *jimkin* *ʕinduh* *maʕlomaat*

Possible with-him information

'It is possible that he has some information (about what happened)

Speaker B: *jisʔal* *bukrah* *miin*

Ask tomorrow who

'Who was that he asks tomorrow?

Speaker C: *χaalid*

Khalid

'Khalid!'

Speaker B: *ah χaalid.* *ʔiz-zalameh* *sʕaħib-hum*

Yes Khalid the-man friend-their

'Yes, Khalid! He is their friend.'

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Speaker B produces a P-wh-question when he realizes that there might be some confusion among the interlocutors because of his previous assertion (asking Khalid about the topic). As an on-line speech production, Speaker B wants to make sure about the answer of his question as a conversational REPAIR, hence reproducing his previous proposition as a question that is anaphoric in nature. This attempt to repair his conversational input is shown in his last utterance of *ah ʔaalid* which implies that the speaker recalculates his input and finds it correct. He also appends his confirmation with the reason why he selected Khalid among other people to consult for this topic. Khalid is their friend, so there is a possibility that they inform him about the reason of rejection. Note here that most of the used P-wh-question is part of the previous discourse and hence becomes part of the common ground which includes the given information that all interlocutors are familiar with. Following Myers's (2007) proposal for French post wh-interrogatives, it can be assumed that P-wh-questions in JA are used in contexts which are answerable or highly expected. Evidence for this comes from their prosodic properties. The P-wh-questions receive rising intonational contours with more emphatic focus is placed on the final wh-word. There is also a prosodic break between the previous linguistic material of the question and the final wh-word. According to Fiengo (2009, p. 41), these properties indicate 'an invitation for conversational; turn-taking [...] which demands responses'.

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Additionally, we propose that conversational REPAIR does not only arise as a self-repair but also to eliminate the hearer's diversion from the main topic, i.e. preserving the thematic continuity, a function which is common in the JA context. To explain this function, consider the following dialogue.

(7) (*Context: Work colleagues discussing the fate of a project that aims to increase their wages*)

Speaker A. *btihki dzadd?*  
speaking seriously  
*mata ?il-mafruuʕ ?inrafazʕ*  
when the-project rejected.PASS

Are you speaking seriously? 'When was the project rejected?

Speaker B. *?il-mawzʕuuʕ ?akbar min heek.*  
the-issue bigger than this  
*baddhummiʕ hada jistaʕiid*  
not-wanting anybody get.benefitted.

'The issue is bigger than this. They do not want anybody (of us) to get benefitted

Speaker A. *ok, bas ?il-mafruuʕ ?inrafazʕ mata*  
Ok, but the-project rejected.PASS when

'That is alright! When was that the project was rejected?

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Speaker A wonders about the time of the rejection of the project. Speaker B does not answer Speaker A's question, but diverts from the main topic to address another topic which revolves around the main motivation behind the rejection of the project. Using a P-wh-question, Speaker A brings the ongoing discussion back to the main topic, performing a conversational REPAIR.

The second function of P-wh-questions in JA is REPEAT. P-wh-questions can be used, as Rosemeyer argues, as a tactic to elaborate on previous beliefs and questions under discussion. P-wh-questions are a necessary precondition of further discursive steps. REPEAT appears mainly when one interlocutor is asked to assert his/her proposition of which some information seems wrong, creating a barrier against realizing the already-formulated assertion. The P-wh-question is thus an expression of an incomplete thought. This can be shown in the following dialogue.

(8) (*context: Three university colleagues discuss their university president's actions*)

Speaker A:	<i>ʔir-raʔiis</i>	<i>ma</i>	<i>riz<sup>ʕ</sup>i</i>	<i>jistagbil</i>
	the-president	not	agreed	receiving
	<i>ʔil-ʕamiid</i>		<i>ʔib-maktab-uh.</i>	
	the-dean		at-office-his	

“The president did not agree to receive the dean in his office.”



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Speaker A:    *ʔir-raʔiis*                      *ma*    *rizʕi*                      *jistagbil*  
                    the-president                      not    agreed                      receiving  
                    *ʔib-maktabuh*                      *miin?*  
                    at-office-his                      who

“ Who was that the president did not agree to receive in his office?

Speaker A:    *qaal*    *ʔil-ʕamiid!*    *ʔiddaktour*    *ʕimaad,*                      *gasʕdi.*  
                    PRT    the-dean!                      Dr.                      Imad,                      I mean

“The dean! Dr Imad, I mean.

The dialogue above shows that P-wh-questions can be used as a reaction that expresses the speaker’s surprise towards the interlocutor’s assertion. The P-wh-question produced by Speaker B (with rising intonation on the wh-word) prompts Speaker A to reassess his previous assertion (that the president rejects receiving the school dean, a situation which is odd at the university).<sup>3</sup>

The three dialogues above reveals that P-wh-questions in JA are part of the common ground of the ongoing discourse. Apart from the used wh-word/expression that stands for the information that speaker fails to assert, the rest of the question is accessible for the interlocutors, which is used as a background which is presented as presupposed information. The rest of the question can be said to be, syntactically speaking, topicalized, whereas the wh-word is contrastively focalized that the speaker contrasts it

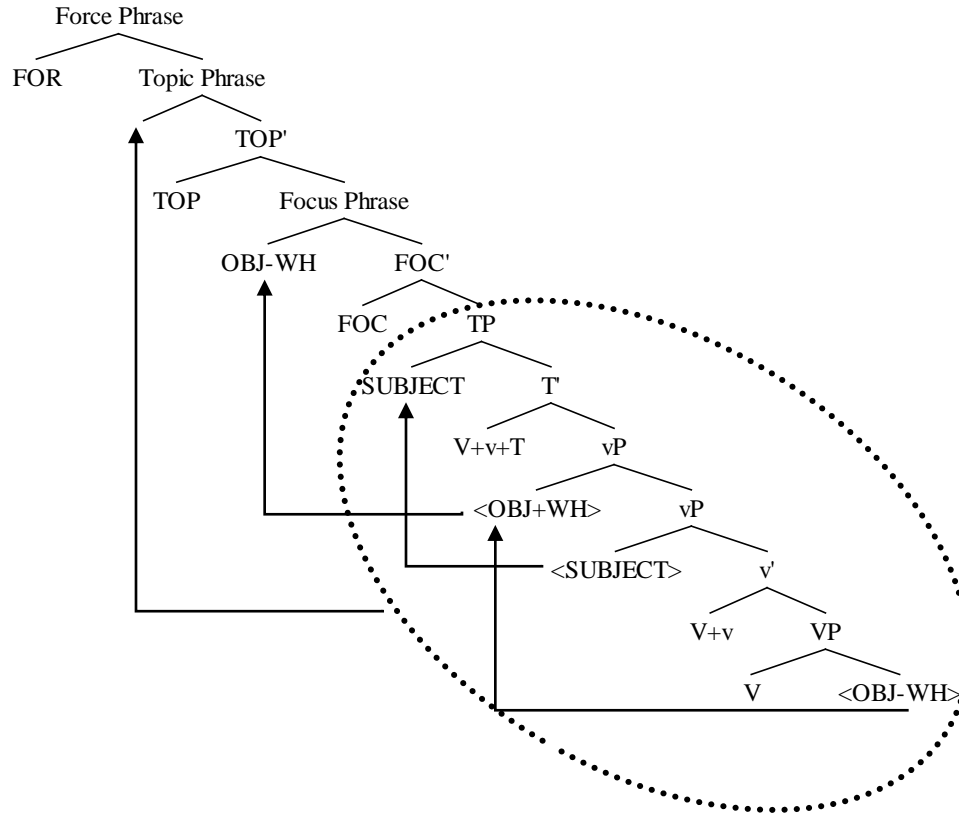
with a set of alternatives that are highly known for the engaging interlocutor. The final wh-word is used to query a specific piece of information of the previous discourse (see Rosemeyer 2018).

In the next section, we present our syntactic account of P-wh-questions in JA.

#### **4. Syntactic account of P-wh-questions in JA**

Our proposal for the derivation of P-wh-questions in JA is that they are derived by movement of the wh-word to the Spec of Focus Phrase, exactly in a similar fashion of the derivation of (unmarked) wh-questions in JA (see Jarrah 2017a,b). However, in P-wh-questions, the movement of the wh-word to the left periphery is followed by movement of the remnant TP to the Spec of higher Topic Phrase (that dominates Focus Phrase within Rizzi's 1997 CP system). The latter movement is the main difference between P-wh-questions and unmarked wh-questions which lack this movement. The tree diagram in (9) is a schematic representation of a P-wh-question with an object wh-word, as advocated for in this paper (silent copies are inserted between < >; all irrelevant details of the tree are skipped).<sup>4</sup>

(9)



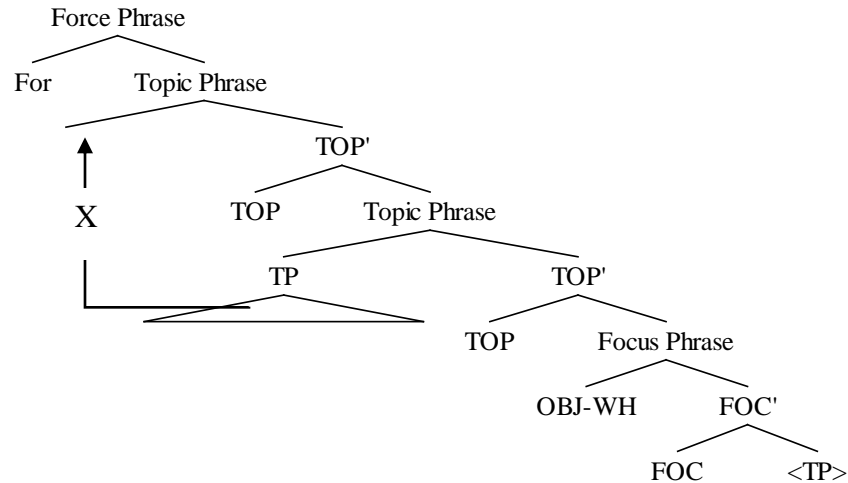
The first piece of syntactic evidence that lends support to the derivation of P-wh-questions as presented in (9) comes from the fact that no sub-extraction of any word of the remnant TP is possible in such questions. Given that all material that precedes the final wh-word in a P-wh-question is treated as a moved domain, any sub-extraction out of it is expected to be ruled out, according to Wexler and Culicover's (1980) Freezing Principle that bans any sub-extraction out of a moved domain (see also Stepanov

2001). This expectation is borne out as any sub-extraction out of the moved TP is strongly disfavored among JA speakers. See the following pair; (10a) is a P-wh-question with no sub-extraction, whereas ill-formed question (10b) contains sub-extraction of the object to the very beginning of the same question.

- (10) a. *ʃaaf*                      *ʔis<sup>ʕ</sup>-s<sup>ʕ</sup>abi*                      *b-l-mizraʕah*                      *miin?*  
          sold.PERF.3SG.M           the-boy                      in-the-farm                      who  
          ‘Who was that saw the boy in the farm?’
- b. \**ʔis<sup>ʕ</sup>-s<sup>ʕ</sup>abi* *ʃaaf*                                      *b-l-mizraʕah*                      *miin?*  
          the-boy                      saw.PERF.3SG.M                      in-the-farm                      who  
          Intended: ‘As for the boy<sub>i</sub>, who was that saw him<sub>i</sub> in the farm?’

According the analysis of P-wh-questions presented in this paper, question (10b) is ungrammatical because of the movement of the direct object to a position outside the remnant TP which already moves to the Spec of Topic Phrase. Although Topic Phrase is a recursive domain in that multi-projections of it can be freely generated (upon the need for it; Rizzi 1997), the object is disallowed to move to any position higher than that occupied by the moved TP. The object's sub-extraction is not allowed as the remnant TP is an opaque domain where no movement out of it is permitted. This can be schematically shown in (11).

(11)



Evidence that can support this line of analysis comes from the fact that grammaticality of question (10b) improves when a resumptive pronoun, which is co-indexed with the initial object, is attached to the verb, as shown in (12).

- (12) *ʔisʕ-sʕabi*      *ʃaaf-uh*      *b-l-mizraʕah*      *miin?*  
the-boy      saw.PERF.3SG.M-him      in-the-farm      who  
‘As for the boy, who was that saw him in the farm?’

The fact that the use of a resumptive pronoun on the verb considerably improves the grammaticality of the question is important. As is widely assumed in Arabic generative grammar, resumptive pronouns, unlike gaps, are indicative of the absence (and sometimes impossibility) of movement

(see Shlonsky 1992, Ouhalla 1997, Aoun et al. 2010). The word that is co-indexed with the resumptive pronoun (which is here the initial object) is directly base-generated in its surface position, whereas the resumptive pronoun is used as a compensation for the co-indexed word being not generated as a complement of the verb. The question in (12) contains a left-periphery-base-generated object which is structurally not part of the remnant TP that moves to the Spec of the (lower) Topic Phrase. This is why question (12) is grammatical as no violation of the Freezing Condition is created.

Note that the initial object in (12) above should be followed by an obligatory intonational break for the question to be accepted. The initial object is understood to be the topic of the discourse. This intonational break and the interpretative reading of the object make the most sense when the fact that the question in (12) is disallowed in embedded contexts, as shown in (13), is taken into consideration:

- (13) *\*saara*      *saʔl-at*      *ʔis<sup>ʕ</sup>-s<sup>ʕ</sup>abi*  
 Sara      asked.PERF-3SG.F-him      the-boy  
*ʃaaf-uh*      *b-l-mizraʕah*      *miin?*  
 saw.PERF.3SG.M-him      in-the-farm      who

Intended: ‘Sarah asked as for the boy, who was that saw him in the farm?’

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Sentence (14) below shows that sentence (13) should not be taken as evidence against the use of P-wh-questions in embedded contexts. P-wh-questions are allowed as long as the object is part of the remnant TP, i.e. no resumptive pronoun is used:

- (14) *saara*      *saʔl-at*      *ʃaaf*  
Sara      asked.PERF-3SG.F-him      saw.PERF.3SG.M  
*ʔis<sup>ʕ</sup>-s<sup>ʕ</sup>abi*    *b-l-mizraʕah*      *miin?*  
the-boy    in-the-farm      who  
‘Sarah asked as for the boy, who was that saw him in the farm?’

The ungrammatical question in (13) strongly indicates that the initial object, co-indexed with a resumptive pronoun on the verb in P-wh-question, occupies a structural position which is not available in non-root contexts. Following Frascarelli and Hinterhölzl (2007), Jiménez-Fernández and Miyagawa (2014) and Jarrah (2019b), it can be suggested that the object in such cases is an Aboutness Topic that occupies the Spec of the highest Topic Phrase in the articulated CP, where topics about which the rest of the question/sentence is about are base-generated. One main property of Aboutness Topic is that they are set off from the rest of the question/sentence by a longer intonational break and are only found in

root contexts. Contra Rizzi (1997), Frascarelli and Hinterhölzl (2007) provide evidence from Italian and German that topics in the left periphery are not of the same sort. They argue for three different types of topics, including Aboutness Topic, Contrastive Topic and Familiar Topic.<sup>5</sup> Building on Frascarelli and Hinterhölzl (2007), Bianchi and Frascarelli (2010) and Fernández and Miyagawa (2014) argue that Aboutness Topic is a root phenomenon, meaning they are not generated in non-root (embedded) contexts. Jarrah (2019b) shows that topic typology presented in Frascarelli and Hinterhölzl (2007) is applied to JA data, however, with severe restrictions on the types of topics allowed in non-root contexts.

The most important point to underscore here is that because there is no structural position available for the base-generated Aboutness-topic object in embedded contexts, the ungrammaticality of question (13) follows.<sup>6</sup> As it stands, the only way for the object to be topicalized in embedded P-wh-questions is only through being part of the remnant TP which is in turn a frozen domain that resists any movement out of it.

The same analysis above can carry over to the question in (15) below which is strongly disfavored when the adjunct *blmizraʕah* 'in the farm' occurs question initially.

- |                               |                  |                  |
|-------------------------------|------------------|------------------|
| (15) ( <i>*b-l-mizraʕah</i> ) | <i>ʔimħammad</i> | <i>laga</i>      |
| in-the-farm                   | Mohamamd         | found.PERF.3SG.M |



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*(b-l-mizraḥah)    ḥind    ḥil-karum    eef*  
 next to                    the            vineyard            what

‘What was that Mohamamd found in the farm next to the  
 vanguard?’

When the adjunct *blmizraḥah* appears at the very beginning of the question, it can be proposed that this adjunct is sub-extracted out of the remnant TP which is an opaque domain. Such dis-preference among JA speakers against the use of question (15) disappears when the wh-word is used in an initial position, as shown in (16):

- (16) *(b-l-mizraḥah)                    eef                    ḥimḥammad*  
          in-the-farm                    what                    Mohamamd  
          *laga*                    *(b-l-mizraḥah)*                    ḥind    ḥil-karum  
          found.PERF.3SG.M            next to                    the            vineyard  
          ‘What was that Mohamamd found in the farm next to the vanguard?’

The question in (16) is accepted with the adjunct *blmizraḥah* ‘in the farm’ either occurring at the beginning of the question or appearing in its normal linear position after the main verb. This can be accounted for, assuming that question (16) being not a P-wh-question is derived through the movement of the object wh-word to the Spec of Focus Phrase. No

movement of remnant TP is performed; hence TP is not an opaque domain as it is not subject to the Freezing Condition.

The second piece of syntactic evidence that provides support to the remnant movement analysis of P-wh-questions comes from the behavior of the so-called discourse particles which are used to convey the speaker's attitudes 'to the propositional content of the utterance, and relating the propositional content to the context of utterance' (Al-shamari 2017, p. 1) (see also Fischer 2006; Coniglio and Zegrean 2010, Bayer and Obenauer 2011). JA is a rich language in discourse particles. For example, Jarrah and Al-shamari (2017) investigates the syntax and functions of the discourse marker *ʃikil*, arguing that this discourse marker is an evidentiality marker that expresses the speaker's dependence on a third-party resource as evidence of his/her utterance. Furthermore, Jarrah and Al-shamari (2017) propose that *ʃikil* is a zero-level category that heads Evid<sub>ential</sub> Phrase, a high IP projection within Cinque's (1999) universal hierarchy of adverbs. Evid<sub>ential</sub> Phrase is situated above TP but under CP. Cross-linguistic evidence shows that discourse markers are immobile (Bayer 2012; Bayer and Obenauer 2011; Struckmeier 2014, Bayer and Trotzke 2015), so they are authentic signals of overt movement. In declarative sentences, *ʃikil* either precedes or follows the subject, as shown in the following pair.<sup>7</sup>

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(17) a. *ʃikil-uh*      *ʔil-muwazʕaf* *ʔarsal*      *ʔil-bariid*

PRT-3SG.M the-employee sent.PERF.3SG.M the-mail

‘Evidently, the employee sent the mail’.

b. *ʔil-muwazʕaf*      *ʃikil-uh*      *ʔarsal*      *ʔil-bariid*

the-employee      PRT-3SG.M sent.PERF.3SG.M the-mail

‘Evidently, the employee sent the mail’.

In questions, it is highly preferred that the (subject) wh-word precedes *ʃikil*, as shown in the following example.

(18) *miin* *ʃikil-uh*      (*?miin*) *ʔarsal*      *ʔil-bariid*

who PRT-3SG.M who SENT.PERF.3SG.M the-mail

‘Who did evidently send the mail?’

The high preference of having the wh-word before *ʃikil* can be attributed to the movement of the wh-word to the left periphery, which is the unmarked case of questions in JA (see above).

A point that is important in the case at hand is that *ʃikil* being an immobile discourse marker can be used as a diagnostic of overt movement in JA. In the corpus, two P-wh-questions where *ʃikil* is used are found. In the two questions, *ʃikil* appears question-finally, preceded by the wh-word

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(and the other linguistic material of the question), as evidenced in the following dialogue.

(19) (*Context: Some female staff are discussing their colleague's reasons of departure*)

Speaker A: *madʒida tarak-at ʔil-fuʔul*

Majida left.PERF-3SG.F the-work

*w-kull-ha zaʕlaanih*

and-all-it angry

'Majida left the work, and all of them (co-workers) are angry'

Speaker B: *fuʊ fiʰ, leeʔ!*

What there, why

'What is the matter?! (for her departure)

Speaker C: *ʕikiluh ʔabuu-ha diri*

PRT-3SG.M father-her knew.PERF.3SG.M

*ʕan ʔil-raatib li-sbuuʕ ʔil-maadʕi*

about the-salary the-week the-past

'Her father evidently knew about her salary.'

Speaker D: *ʔabuu-ha diri li-sbuuʕ ʔil-maadʕi*

Father-her knew.PERF.3SG.M the-week the-past

*ʕan ʔeeʔ ʕikiluh,*

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about	what	PRT-it
<i>muuf</i>	<i>?imrakkiz</i>	<i>ma-ʕak</i>
not	focused	with-you

'About what was that her father evidently new last week? I

am not focused (on your speech)

Speaker C: *raatib-ha galiil ?ikðiir*,

salary-her	low	much
<i>w-il-muwaasʕalaat</i>		<i>ʕalee-ha</i>
and-the-transportation		on-her

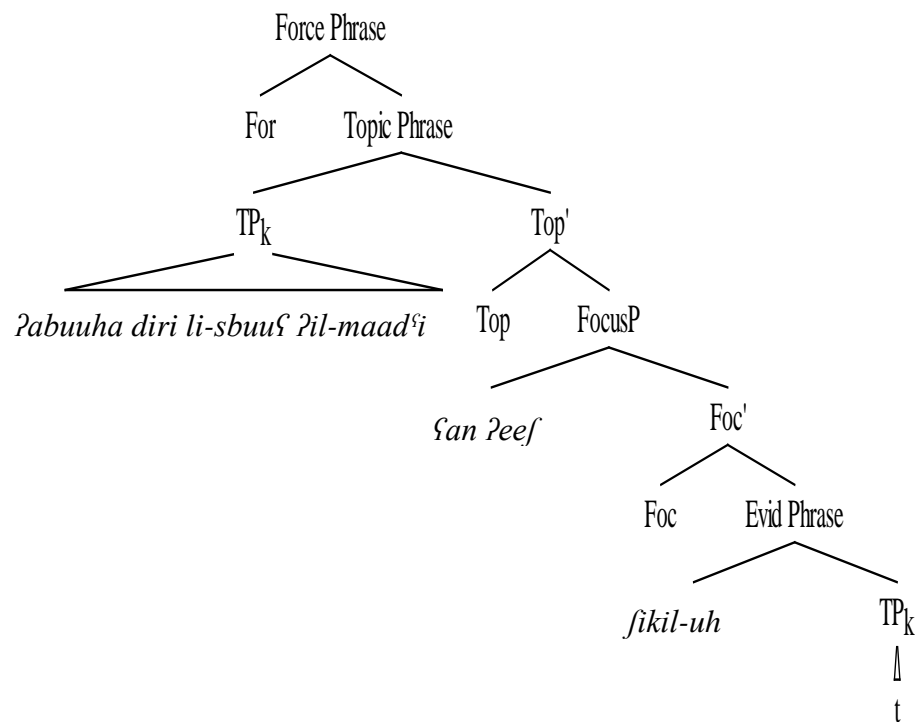
'Her salary is very low and you need to pay for the  
transportation.'

As shown in Dialogue (19), Speaker C answers Speaker B's question about the reason why Majida had left her work (although she was previously happy about it). Speaker C makes use of *ʕikil* because she does not have concrete evidence in favor of her proposition. Note that *ʕikil* appears sentence-initially, where *ʕikil* normally occurs. Speaker D fails to hear Speaker C properly, stating that she was not (fully) focused on what she has just said, requesting a repetition of her proposition in a form of a P-wh-question, with a particular focus on what her father had known about. The P-wh-question is here an indicator of a communicative mismatch (cf. Ginzburg 2012). The significant remark here is that *ʕikil*

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appears question finally, preceded directly by the wh-word. This linear order between *fikil*, the wh-word, and the rest of the question is promptly accounted for, following our syntactic treatment of P-wh-questions in JA. The wh-word leaves its position to CP, followed by the remnant IP which stands for background information that expresses given information the speaker and the interlocutor assert. These two movements results in the situation that *fikil* being immobile appears questions finally. The tree diagram in (20) represents the schematic representation of Speaker D's P-wh-question.

(20)





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yesterday                      what

'What did the school manager bring you yesterday?

The pair in (21) shows that *fuu* is not used as a wh-word that may appear in situ, indicating that *fuu* only occurs in questions with overt wh-movement. This is important because it can be used as a test whether P-wh-movement includes movement or not. Our data reveals that *fuu* is largely accepted in P-wh-questions, something that can be interpreted as that the final wh-word in P-wh-question is, at the very least, a result of some movement which we propose to target the left periphery of the relevant clause:

(22) *mudirr              ?il-midrasah      dzaab -?il-ku*  
manager              the-school              brought.PERF.3SG.M-to-you  
*?imbaarih      ?ee/fuu*  
yesterday              what

'What was that the school manager brought you yesterday?

On the other hand, an apparent counter-argument against the proposed analysis is that P-wh-questions are syntactically derived through the movement of the wh-word to the right periphery of the respective clause. Although this argument seems intuitive, there is strong evidence against it.



First, it fails to account for the position of the P-wh-word relative to *ʃikil*.

As we have shown above, *ʃikil* may appear at the end of P-wh-questions in JA, following the wh-word. In order to accommodate this fact with rightward movement analysis, a stipulation that *ʃikil* would also move to the right periphery is inescapable. Such a stipulation should be abandoned following the cross-linguistically attested proposal that discourse markers/grammaticalized CP/high IP heads are immovable.

Additional empirical evidence that speaks against the validity of right-ward movement analysis comes from P-wh-questions with an object anaphor. According to the Binding Theory (i.e., Condition A), anaphors should be c-commanded by a co-indexed antecedent (within an appropriate binding domain). The most relevant point here is that P-wh-questions where the subject wh-word is the antecedent, and the object is the anaphor are deemed ungrammatical by most of JA speakers (regardless of the context), as shown in (23):

- (23) \**gatl-at*                      *ħaalha*                      *bi-l-mizraʕah*                      *miin*  
         killed.PERF-3SG.F    herself                      in-the-farm                      who

Intended: 'Who was that killed herself in the farm?'

The ungrammaticality of sentence (23) challenges the right-ward movement analysis of P-wh-questions as under this proposal the wh-word

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still c-commands the object (as any movement even rightward should target a c-commanding position). On the other hand, the ungrammaticality of sentence (23) is easy to account for assuming remnant TP movement analysis to P-wh-questions. Following the two movements of the wh-word and remnant TP to the left periphery, the anaphor ends up not c-commanded by the subject wh-word, hence triggering the violation of Condition A of the Binding Theory. Sentence (23) also indicates that Condition A applies throughout the derivation.

Note in passing that sentence (23) improves considerably when the question is appended by *ʔilli*, as shown in (24).

(24) <i>ʔilli</i>	<i>gatl-at</i>	<i>haalha</i>
REL	killed.PERF-3SG.F	herself
<i>bi-l-mizraʕah</i>	<i>(kaan-t)</i>	<i>miin</i>
in-the-farm	was-3SG.F	who
'Who was that killed herself in the farm?'		

With the fact that the past tense copula *kaan* can be placed right before the subject wh-word, the question in (24) can be analyzed as an equational sentence, where the object anaphor is c-commanded by the subject *pro* inside the relative clause.

Additionally, rightward movement should be rejected on the grounds that JA (and Arabic dialects) do not allocate a right-ward position for contrastively-focused/ new-information elements. As proposed by Moutaouakil (1989) and Ouhalla (1997), among many others, new-information focus remains in situ, while contrastively-focused information moves to the left periphery (especially when there is no morphological identification). This implies that there exists no right-ward position allocated to contrastively-focused elements. Additionally, right-ward movement account of P-wh-questions is readily abandoned under an anti-symmetric approach to syntactic derivation (i.e. rightward is downward; Kayne 1994). Under this approach any right movement is treated as an improper step of derivation.

### **5. Conclusion**

This research investigated a subclass of questions in JA, where the wh-word appears at the end of the question. It provided evidence to the effect that such questions include movement of the wh-word to the left periphery of the relevant clause, followed by remnant-TP movement to a commanding position in the left periphery. This position is shown to be Topic Phrase that c-commands Focus Phrase whose specifier is filled with

the moved wh-word. Pragmatic analysis of such questions shows that they are strongly anaphoric, as they are a repetition of the previous utterance or some parts of it, something that makes them much dependent on the previous context. They are used as tools to express the speaker's surprise, disbelief, incredulity, or failure to assert some part of the ongoing discourse. We take this as evidence that the whole question (apart from the wh-word) acts as a background and hence topicalized, a fact that is in tandem with the proposed analysis. Other competing proposals (i.e. in-situ analysis of wh-word and right-word movement) are shown to fail to account for the pragmatic and syntactic intricacies of such questions.

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<sup>1</sup> Adjunct wh-words (e.g., temporal wh-words , spatial wh-words, etc.) can also appear at the very end of their questions, representing a possible instance of P-wh-questions, as shown in (i)

- (i)    *ʔiz-zalameh*        *baaʃ*                                *ʔis-sijjaarah*        *mata/ween?*  
         the-man                sold.PERF.3SG.M                the-car                when/where  
         'When/where was that the man sold the car?'

However, (i) can be viewed as an instance of a wh-in-situ question as temporal/spatial information normally appears at the end of declarative sentences in JA. This is why the

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discussion of adjunct-P-wh-questions does not much figure in the main analysis of P-wh-questions, presented in this paper.

<sup>2</sup> All dialogues are taken from the corpus.

<sup>3</sup> The other three functions of post wh-interrogatives (EXPLAIN, CHALLENGE, and ELABORATE), reported in Rosemeyer (2018) for Spanish are shown to derive from REPEAT, and they mainly arise when the speaker seeks for additional information about the interlocutor's assertion. This information may be an explanation, elaboration or a challenge that doubts the interlocutor's assertion. Our corpus reveals that such functions can be delivered by P-wh-questions. However, we opt not to discuss them because of limited space offered for this paper.

<sup>4</sup> The object wh-word is forced to land first in the outer Spec of vP, following the effects of the Phase Impenetrability Condition (i.e. just the edge of the phase and the head are accessible for further operations outside the phase; see Chomsky 2001). Afterwards the object-wh-word moves from the vP phase to the Spec of Focus Phrase which is located in the upper CP phase.

<sup>5</sup> Fernández and Miyagawa (2014, p. 284) mentions that Aboutness topic is defined as what the sentence is about'' (Reinhart 1981, Lambrecht 1994); or the constituent that is ''newly introduced, newly changed or newly returned to'' (Givón 1983). Contrastive topic is an element that induces alternatives which have no impact on the focus value and creates oppositional pairs with respect to other topics (Kuno 1976, Büring 1999), Familiar topic is the given or accessible (Chafe 1987) constituent which is Discourse)-linked with a pre-established aboutness topic.

<sup>6</sup> The implied suggestion that the initial object in P-wh-questions should be treated as an instance of Aboutness Topic is based on the fact that Contrastive Topic does not occur in questions (see Bocci 2007; Bianchi and Frascarelli 2010) and the remnant TP itself is Familiar Topic.

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<sup>7</sup> When the subject precedes *fikil*, it should be definite and/or specific. This follows from the position of the subject as a topic. We will not pursue this issue here.