

# 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 syntactically derived by the 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 the movement of the remnant TP to a higher position in the left periphery (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. the in-situ analysis and the right-ward movement of final wh-words) are dismissed, following empirical evidence.

**Keywords**

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

## 1. Introduction

Jordanian Arabic (henceforth, JA) is predominately a wh-movement language where wh-words/expressions move to the left periphery (of their respective clause) in the overt-syntactic cycle (i.e. before the Spell-out point) (Abdel Razaq 2011, Jarrah 2017a,b, Jarrah 2019). 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. <i>ʔiz-zalameh</i>	<i>baaʕ</i>	<i>ʔis-sijjaarah</i>
the-man	sell.PERF.3SG.M	the-car
<i>ʔimbaariḥ</i>	<i>bi-s-suug</i>	
yesterday	in-the-market	

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

b. <i>miin</i>	<i>baaʕ</i>	<i>ʔis-sijjaarah</i>
who	sell.PERF.3SG.M	the-car
<i>ʔimbaariḥ</i>	<i>bi-s-suug</i>	
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	sell.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	sell.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 takes place 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 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 to right of 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 in the related literature such as post(-posed) wh-questions and final wh-questions (Myers 2007, Steensig & 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. <i>baaʕ</i>                                    | <i>ʔis-sijjaarah</i> | <i>ʔimbaariħ</i> |
| sell.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?'  |                      |                  |
| b. <i>ʔiz-zalameh</i>                                 | <i>baaʕ</i>          | <i>ʔimbaariħ</i> |
| the-man   | sell.PERF.3SG.M      | yesterday        |
| <i>bi-s-suug</i>                                      | <i>ʔeef</i>          |                  |
| 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. In this section, we show that P-wh-questions bear particular pragmatic functions, including REPEAT and REPAIR (Fiengo 2009, 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 Spec of higher Topic Phrase (Rizzi 1997), c-commanding the 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).

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

*ʔimbaariḥ*      *bi-s-suug*  
yesterday      in-the-market

'The man sold what yesterday in the market?'

b. *ʔiz-zalameh*      *baaʕ*      *ʔis-sijjaarah*  
the-man      sell.PERF.3SG.M      the-car

*mata*      *bi-s-suug*  
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 a 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 is important for the speaker.

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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 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>
sell.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.

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.<sup>2</sup>

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 constructed 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 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**

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According to our corpus in addition to the informants' views regarding the use of P-wh-questions, it appears that such questions are never used to start a 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>3</sup>

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

Speaker A: *dzidd-i*                      *kasar*                      *?iid*    *jazan.*  
                 grandfather-my            break.PERF.3SG.M    hand    yazan  
                 ‘My grandfather broke Yazan’s hand.’

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Speaker B: <i>kasar</i>	<i>ʔiid</i>	<i>jazan</i>	<i>miin?</i>
break.PERF.3SG.M	hand	yazan	who
‘Who was that broke Yazan’s hand?’			

Speaker A refers to the 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 occurrences 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 *ʔildʒamaaʃa* 'the people', reject marrying one of their daughter to one of the interlocutors' relative).

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Speaker A: *ʔil-dʒamaaʕah ma gibl-u*

the-people NEG accept.PERF-3PL.M

*jihk-u ʕan ʔis-sabab*

talk.IMPERF-3PL.M about the-reason

'The people did not accept talking about the reason'

Speaker B: *ʔisʔal ʕaalid bukrah ʔan ʔil-mawḏʕuuʕ*

ask.IMR.2SG.M khalid tomorrow about the-topic

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

Speaker A: *leef ʕaalid kaan muf mihtam*

why khalid was.3SG.M NEG interested

'Why Khalid! He was not interested.'

Speaker C: *jimkin ʕind-uh maʕluumaat*

possible with-him information

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

Speaker B: *ʔisʔal bukrah miin*

ask.IMR.2SG.M tomorrow who

'Who was that he asks tomorrow?

Speaker C: *ʕaalid*

khalid

'Khalid!'

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

yes            khalid            the-man            friend-their

'Yes, Khalid! He is their friend.'

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 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 χaalid* 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

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being 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'.

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. <i>btiḥki</i>	<i>dʒad?</i>
speak.IMPERF.2PL.M	seriously
<i>mata      ʔil-maʃruuʃ    ʔin-rafaðʕ</i>	
when      the-project	PASS-rejected.3SG.M

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

Speaker B. <i>ʔil-mawðʕuuʃ</i>	<i>ʔakbar min    heek.</i>
the-issue	bigger than    this
<i>bad-humm-if</i>	<i>ħada            jistaʃiīd</i>
want-PL.M-NEG	anybody      get.benefitted.3SG.M

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

Speaker A. *ok, bas*    *?il-mafruuf*    *?in-rafaðʕ*                      *mata*

Ok, but   the-project    PASS-rejected.3SG.M    when

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

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 the realization of the already-formulated assertion. The P-wh-question is thus an expression of an incomplete thought. This can be shown in the following dialogue.



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

Speaker A: *ʔir-raʔiis*                      *ma*                      *riðʕi*  
the-president                      NEG                      agree.PERF.3SG.M  
*jistagbil*                                      *ʔil-ʕamiid*                      *ʔib-maktab-uh.*  
receive.IMPERF.2PL.M                      the-dean                      at-office-his

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

Speaker A:    *ʔir-raʔiis*                      *ma*                      *riðʕi*  
the-president                      not                      agree.PERF.3SG.M  
*jistagbil*                                      *ʔib-maktabuh*                      *miin?*  
receive.IMPERF.2PL.M                      at-office-his                      who

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

Speaker A:    *qaal*    *ʔil-ʕamiid!*                      *ʔid-daktour*  
PRT    the-dean!                      the-doctor  
*ʕimaad,*                      *gasʕd-i.*  
Imad,                      intention-my.

“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>4</sup>

The three dialogues above reveal 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 presented as presupposed information. The rest of the question is, syntactically speaking, topicalized, whereas the wh-word is contrastively focalized as the speaker contrasts it with a set of alternatives that are highly known for the engaging interlocutors. 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.

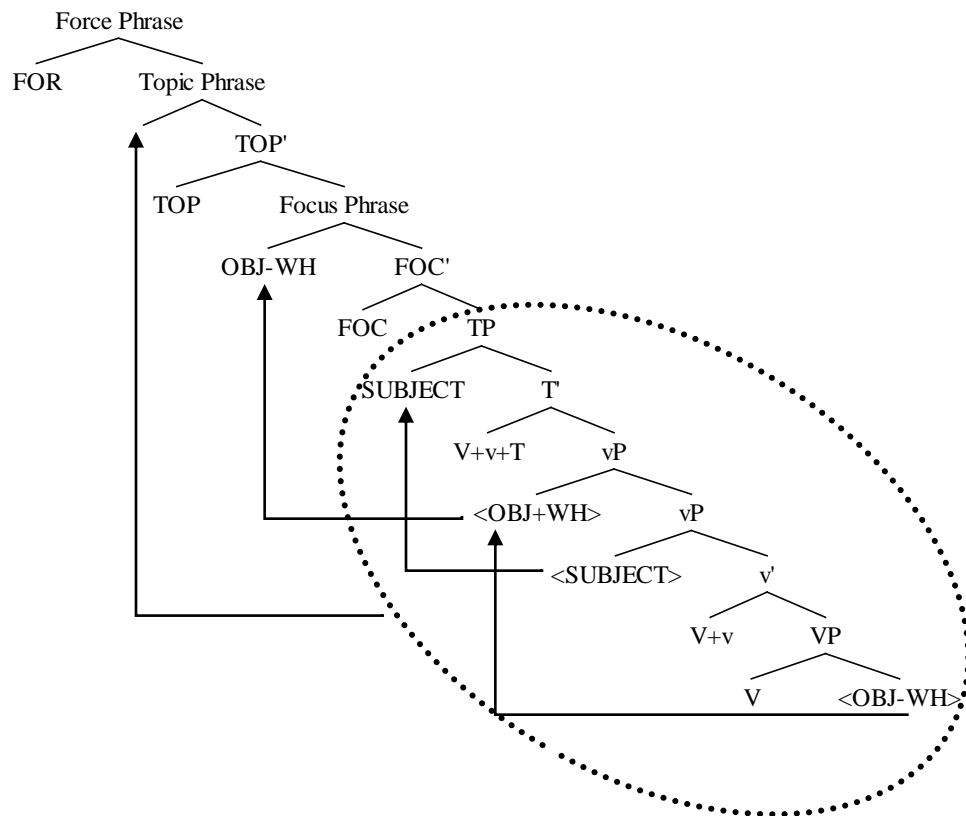
#### **4. Syntactic account of P-wh-questions in JA**

Our proposal of the derivation of P-wh-questions in JA is that they are derived by the 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).<sup>5</sup> However, in P-wh-questions, the movement of

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the wh-word to the left periphery is followed by the movement of the remnant TP to the Spec of the higher Topic Phrase (that dominates Focus Phrase within Rizzi's 1997 articulate CP system). The latter movement represents 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>6</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 & 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 beginning of the same question.

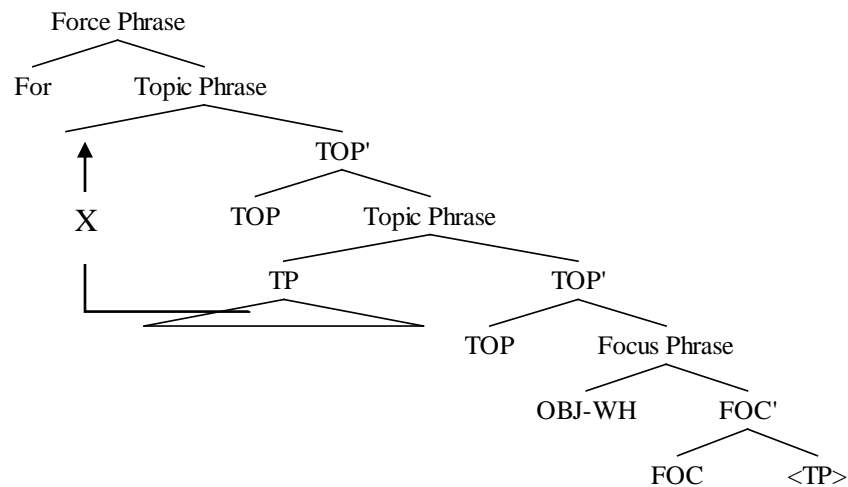
- (10) a. *ʔisʕ-sʕabi*      *b-l-mizraʕah*      *miin?*  
see.PERF.3SG.M    the-boy                  in-the-farm                  who  
‘Who was that saw the boy in the farm?’  
b. \**ʔisʕ-sʕabi*    *ʔaaf*                                  *b-l-mizraʕah*                  *miin?*  
the-boy       see.PERF.3SG.M                  in-the-farm                  who

Intended: ‘As for the boy<sub>i</sub>, who was that saw him<sub>i</sub> in the farm?’

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According to 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 moved 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 them; Rizzi 1997), the object is disallowed to move to any position higher than that occupied by the moved TP. The sub-extraction of the object 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 the 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                  see.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 normally 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 compensated 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 invoked.

The same analysis above can carry over to the question in (13) below which is strongly disfavored when the adjunct *blmizraʕah* 'in the farm' occurs question initially.

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- (13) (\**b-l-mizraḥah*)      *ʔimḥammad*      *laga*  
in-the-farm      Mohammad      find.PERF.3SG.M  
(*b-l-mizraḥah*)      *ʕind*      *ʔil-karum*      *eef*  
in-the-farm      next to the-vineyard      what  
‘What was that Mohammad found in the farm next to the  
vineyard?’

When the adjunct *blmizraḥah* appears at the beginning of the question, it is expected to be sub-extracted out of the remnant TP which is an opaque domain. The dis-preference among JA speakers against the use of question (13) disappears when the wh-word is used in an initial position, as shown in (14):

- (14) (*b-l-mizraḥah*)      *eef*      *ʔimḥammad*  
in-the-farm      what      Mohammad  
*laga*      (*b-l-mizraḥah*) *ʕind*      *ʔil-karum*  
find.PERF.3SG.M      in-the-farm      next to the-vineyard  
‘What was that Mohammad found in the farm next to the vineyard?’

The question in (14) is accepted with the adjunct *blmizraḥah* ‘in the farm’ occurring either at the beginning of the question or in its normal linear position after the main verb. This can be accounted for, assuming that

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question (14) 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 takes place; hence TP is not an opaque domain as it is not subject to the Freezing Condition.

The second piece of evidence comes from questions with more than one wh-word (we thank an anonymous reviewer for raising this point). Consider the question in (15) where the subject and the objects are wh-words.

- (15)      *miin*    *ʃaaf*                      *ʔeef*    *bi-l-mazaraʃah*  
              who    find.PERF.3SG.M                what    in-the-farm  
              'Who saw what in the farm?'

The object wh-word *ʔeef* should remain in situ as it cannot move past the subject wh-word *miin*, given relativized minimality (Rizzi 1990):

- (16)      \**ʔeef*    *miin*    *ʃaaf*                      *bi-l-mazaraʃah*  
              what    who    find.PERF.3SG.M                in-the-farm  
              Literally: 'Whom did who see in the farm?'

The relevant point here is that the subject wh-word in P-wh-questions cannot either appear to the left of the object wh-word, as evidenced in the following example:



- (17)        \**miin*    *ʃaaf*                                *bi-l-mazaraʕah*        *ʔeef*  
              who   find.PERF.3SG.M                in-the-farm                what

Intended: 'What was that who saw in the farm?'

Under the analysis presented in the paper, *ʔeef* moves first, and remnant TP moves next. This means that *ʔeef* must move past *miin*, which is not allowed, hence the ungrammaticality of the question. The ill-formed question in (17) is also evidence that the wh-words in P-wh-questions do not remain in situ; otherwise it would be hard to account for the ungrammaticality of the question.

The third 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 Coniglio & Zegrean 2010, Bayer & Obenauer 2011). JA is a rich language in discourse particles. For example, Jarrah & 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 for his/her utterance. Furthermore, Jarrah & Al-shamari (2017) propose that *ʃikil* is a

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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 & Obenauer 2011; Struckmeier 2014, Bayer & Trotzke 2015), so they are authentic signals of overt movement. In declarative sentences, *fikil* either precedes or follows the subject, as shown in the following pair.<sup>7</sup>

- (18) a. *fikil-uh*      *?il-muwað'ð'af* *?arsal*                      *?il-bariid*  
PRT-3SG.M   the-employee   send.PERF.3SG.M   the-mail  
'Evidently, the employee sent the mail'.
- b. *?il-muwað'ð'af*   *fikil-uh*                      *?arsal*                      *?il-bariid*  
the-employee      PRT-3SG.M      send.PERF.3SG.M   the-mail  
'Evidently, the employee sent the mail'.

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

- (19) *miin* *fikil-uh*                      *(?miin)* *?arsal*                      *?il-bariid*  
who   PRT-3SG.M      who   send.PERF.3SG.M      the-mail  
'Who did evidently send the mail?'

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The high preference of having the wh-word before *fikil* 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 this regard is that *fikil* being an immobile discourse marker can be used as a diagnostic of overt movement in JA. In the corpus, two P-wh-questions where *fikil* is used are found. In the two questions, *fikil* appears question-finally, preceded by the wh-word (as well as the other linguistic material of the question), as evidenced in the following dialogue.

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

Speaker A: *maadzida      tarak-at      ?if-fuyul*

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

*w-kull-ha      zaflaanih*

and-all-it      angry

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

Speaker B: *fuu      fiih, leef!*

what      there, why

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

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Speaker C: *ʃikil-uh*      *ʔabuu-ha*      *diri*

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

*ʃan*      *ʔir-raatib*      *li-sbuuʕ*      *ʔil-maaðʕi*

about      the-salary      the-week      the-past

'Her father evidently knew about her salary.'

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

father-her      know.PERF.3SG.M      the-week      the-past

*ʃan*      *ʔeef*      *ʃikil-uh,*

about      what      PRT-it

*muuʕ*      *ʔimrakkiz*      *ma-ʃaki*

NEG      focused.1SG.M      with-you

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

am not focused (on your speech)

Speaker C: *raatib-ha*      *galiil*      *ʔikθiir,*

salary-her      low      much

*w-il-muwaasʕalaat*      *ʃalee-ha*

and-the-transportation      on-her

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

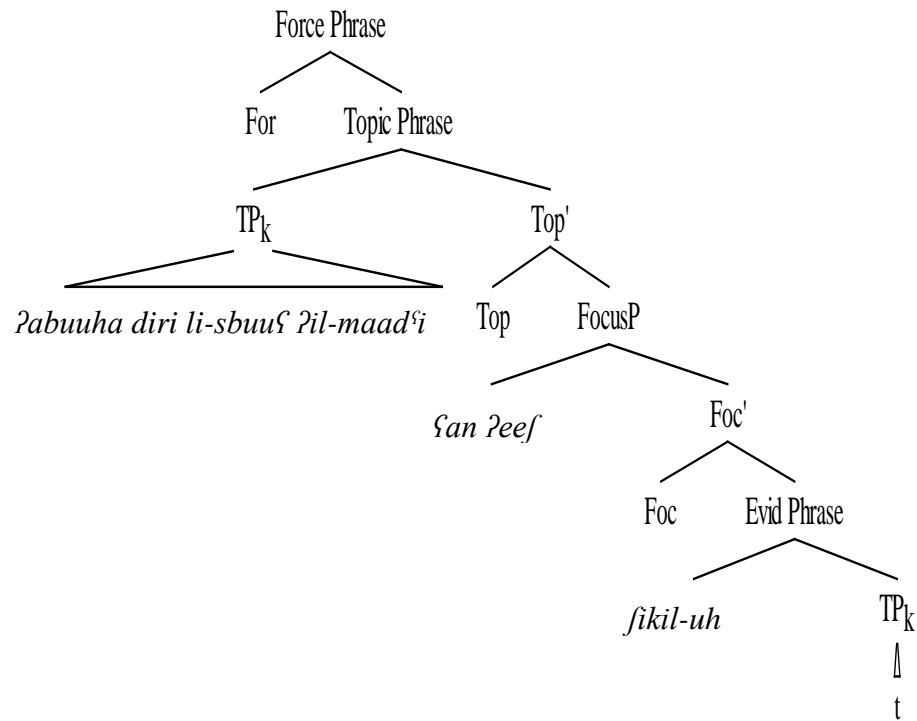
transportation.'

As shown in Dialogue (20), 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 *fikil* because she does not have first-hand evidence that supports her proposition. Note that *fikil* appears sentence-initially, where *fikil* normally occurs. Speaker D fails to hear Speaker C properly, stating that he 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 *fikil* 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 (21) represents the schematic representation of Speaker D's P-wh-question.

(21)

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The tree diagram in (20) proposes that the position of the wh-word at the end of P-wh-question is an epiphenomenal of the movement of the wh-word and the remnant TP to the CP of the respective question. Such movements are easy to discover in the presence of immobile expressions that are structurally positioned outside the domain of the moved TP, i.e. the high IP area or CP.

In addition to these three pieces of evidence (no sub-extraction, questions with multiple wh-words, and the position of *ʃikil* in P-wh-questions), we can find other ancillary, yet indicative pieces of evidence in favour of the proposed analysis of P-wh-words in JA. One piece of ancillary evidence comes from the fact that most JA speakers accept *ʃuu* and *ʔeef* as an object wh-word for a non-human entity in unmarked

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questions (with initial wh-words), but only *ʔeef* in wh-in-situ questions, as shown in the following examples:

- (22) a. *ʔeef//fuu*                      *mudiir*                      *ʔil-midrasah*  
               what                          manager                      the-school  
               *dʒaab-ʔil-ku*    *ʔimbaarih*  
               bring.PERF.3SG.M-to-you                      yesterday  
       'What did the school manager bring you yesterday?'  
 b. *mudiir*                      *ʔil-midrasah*                      *dʒaab-ʔil-ku*  
               manager                      the-school                      bring.PERF.3SG.M-to-you  
               *ʔeef//\*fuu*                      *ʔimbaarih*  
               what                          yesterday  
       'What did the school manager bring you yesterday?'

The pair in (22) shows that *fiuu* is not used as a wh-word that may appear in situ, indicating that *fiuu* 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 *fiuu* 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 as we propose targets the left periphery of the relevant clause:

- (23) *mudiir*        *ʔil-midrasah*    *dʒaab-ʔil-ku*  
manager        the-school        bring.PERF.3SG.M-to-you  
*ʔimbaarih*        *ʔeeʃʃuu*  
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 question. 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 *ʔikil*. As we have shown above, *ʔikil* may appear at the end of P-wh-questions in JA, following the wh-word. In order to accommodate this fact with the rightward movement analysis, a stipulation that *ʔikil* 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 the 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



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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 (24):

(24) * <i>gatl-at</i>	<i>haalha</i>	<i>bi-l-mizraḥah</i>	<i>miin</i>
kill.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 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 the 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 a violation of Condition A of the Binding Theory. Sentence (24) also indicates that Condition A applies throughout the derivation.

Note in passing that sentence (24) improves considerably when the question is appended by *ḥilli*, as shown in (25).

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(25) <i>ʔilli</i>	<i>gatl-at</i>	<i>haalha</i>
REL	kill.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 (25) 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 Moutouakil (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 the 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 has investigated a subclass of questions in JA, where the wh-word appears at the end of the question. It has provided evidence to the effect that such questions include the movement of the wh-word to the left periphery of the relevant question, followed by the 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. This property makes them 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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the-man	sold.PERF.3SG.M	the-car	when/where
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'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 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> Native speakers should judge the grammaticality of P-wh-questions using appropriate contexts. In section 3 we will discuss the main pragmatic contexts where such questions are used.

<sup>3</sup> All dialogues are taken from the corpus.

<sup>4</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>5</sup> In this research, JA is treated as an SVO language following the main literature in the field. See Parkinson (1981), El-Yasin (1985), Musabhien (2009), Al-Shawashreh (2016), and Jarrah & Abu Salem (2020), among others. Note here that JA is not different from many other dialects of Arabic in this regard, see Fassi Fehri (1993) for Moroccan Arabic, Aoun *at al.* (1994) for Lebanese Arabic, Shlonsky (1997) and Mohammad (2000) for Palestinian Arabic, and Benmamoun (2000) for Egyptian Arabic.

<sup>6</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., the edge of the phase and the head are only

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accessible for further operations outside the phase; see Chomsky 2001). Afterwards the object-wh-word moves to the Spec of Focus Phrase which is located in the CP phase.

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