

The Minimalist Program and Optimality Theory: Which is the Most Optimal? Wh-Elements as a Case Study

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ABSTRACT

This study analyzes wh-questions from the perspective of the theories of the Minimalist Program and Optimality Theory. We look at specific wh-constructions, including the gap strategy, the in-situ strategy, multiple wh-questions, and relativized wh-questions. This paper shows both the similarities and differences between OT and MP in analyzing wh-elements. One crucial difference is that OT solves the problem of optionality and clearly tackles some aspects of the syntax-pragmatics interface.

Keywords: Moroccan Arabic, optimality theory, pragmatics, focus, the minimalist program, wh-elements.

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I. INTRODUCTION

This paper aims to compare the Minimalist Program (Henceforth, MP) (Chomsky, 1995, 2000, 2001, 2005) and Optimality Theory (henceforth, OT) theory (Kager, 1999; Prince & Smolensky, 1993) to highlight their strengths and weaknesses in explaining syntactic phenomena. Although OT was initially applied in phonology, it has slowly started to be applied in the fields of pragmatics and syntax, among others. MP is a program that tries to explain syntactic structures using the principles of simplicity, economy, and parsimony (Chomsky, 1995). According to Chomsky (1998, p. 9), language is “an optimal solution to legibility conditions,” a conception that is similar to OT. Language cooperates with two external systems; these are the Conceptual-Intentional system (C-I), which interconnects with the Logical Form (LF), and the Sensorimotor system (SM), which interplays with the Phonetic Form (PF). OT is a general theory of grammar that came as a reaction to the earlier generative phonology and considered rules or constraints to be violable and surface-based (Prince & Smolensky, 1993). Its central premise is that output forms of language reflect a resolution of conflicts between competing constraints; this output form is optimal if it receives the least serious, minimal violations of constraints; therefore, language variation is the result of the hierarchical ranking of constraints (Kager, 1999), noting that constraint is a “structural requirement that may be either satisfied or violated by an output form” (Kager, 1999, p. 9). We take wh-questions as a case study in order to compare how these elements are derived via MP and OT. The paper is organized as follows: Section II gives a general description of Moroccan Arabic (henceforth, MA). Section III briefly describes MA wh-elements, especially the strategies used for question formation. Sections IV and V analyze wh-elements in MP and OT, respectively. We end the paper by summarizing and reflecting on the strengths and weaknesses of OT and MP in tackling the analysis of wh-elements in MA.

II. MOROCCAN ARABIC: DESCRIPTIVE PRELIMINARIES

A typical sentence in Moroccan Arabic (henceforth, MA) contains a subject and a predicate:

- 1) Mohamed mʃa l-ɖɖar
 Mohamed went.PAST.3P.SG.M to-the-home
 ‘*Mohamed went home.*’

SVO is the unmarked structure in MA, which is also the case for Arabic dialects (Musabbhien, 2008). MA also allows for the marked VSO order:

- | | | |
|-------------------|---------|-------------|
| 2) mfa | Mohamed | l-dḍar |
| went.PAST.3P.SG.M | Mohamed | to-the-home |

‘Mohamed went home.’

Example (2) is more marked and has a different meaning than (3): there is more emphasis on the action of going. Note that the two-word orders are not substitutable one for the other. The choice for one or the other has to do with what new information is given. There are other word orders in MA, and they are less frequently used. Consider the following examples:

- 3) l-ḡḡar Mohamed mja OSV
to-the-home Mohamed went
‘To home, Mohamed went.’
- 4) l-ḡḡar mja Mohamed OVS
to—the-home went Mohamed
‘To home went Mohamed.’

In both (3) and (4), /l-ḡḡar/ *‘to home’* is topicalized to the left periphery. The difference between (3) and (4) is that the former has the subject in a preverbal position whereas the latter has the subject in a postverbal position.

In this subsection, we observed that MA uses four main word orders. The unmarked is that of SVO and followed by VSO. OVS and OSV are the least frequently used word orders in MA. The following section gives some descriptive generalizations on the strategies used to construct *wh*-elements in MA.

III. A BRIEF DESCRIPTION OF WH-ELEMENTS IN MOROCCAN ARABIC

We can divide *wh*-elements in MA into three major types: subject *wh*-elements, object *wh*-elements, and adjunct *wh*-elements. We can present them respectively in the following examples:

- 7) Meriem qra-t l-ktab f-ḡ-ḡar
Meriem read.PAST.2P.F.SG the-book at-the-house
‘Meriem read the book at home.’
- 8) Jkun qra-t l-ktab f-ḡ-ḡar
who read.PAST.2P.F.SG the-book at-the-house
‘Who read the book at home?’
- 9) Jnu qra-t Meriem f-ḡ-ḡar
what read.PAST.2P.F.SG Meriem at-the-house
‘What did Meriem read?’
- 10) Fin qra-t Meriem l-ktab
where read.PAST.2P.F.SG Meriem the-book
‘Where did Meriem read the book?’

Based on comparing (3) and (4) subject *wh*-elements are those that question subjects. Specifically, /Jkun/ *‘who’* questions the subject Meriem. Example (9) is the result of /Jnu/ *‘what’* questioning the direct object /l-ktab/ *‘the book’*. The final example (10) contains the adjunct *wh*-element /fin/ *‘where’*, which questions the adjunct /f-ḡ-ḡar/ *‘at home’*. MA can also use the in-situ strategy. Let us see the following example:

- 11) Meriem qra-t l-ktab fin
Meriem read.PAST.2P.F.SG the-book where
‘Meriem read the book where?’

The *wh*-element /fin/ *‘where’* can stay behind in MA in a very restricted way; however, the in-situ strategy in MA is restricted in the sense that it is only used as an echo question and is sensitive to islands, as we will see in section 3.

A final structure we mention in our study is multiple *wh*-construction. Languages fall into three types in this regard. The first one has all the *wh*-elements moving to the left periphery (e.g., Bulgarian; Krapova & Cinque, 2008). The second type of language leaves all the *wh*-elements in-situ (e.g., Chinese; Liao & Wang, 2009). The final type of language has only one *wh*-element being fronted whereas the other(s) stay in-situ (e.g., English; Radford, 2004, p. 257). Let us see which type of language MA conforms with:

- 12) Jkun qra-t Jnu f-ḡ-ḡar
who read.PAST.2P.F.SG what at-the-house
‘Who read what at home?’

In (12), two wh-elements occur in the sentence. These are the subject wh-element /ʃkʊn/ ‘who’ and the object wh-element /ʃnu/ ‘what’. Selecting either of the following possibilities deems the sentence ill-formed:

- 13) *ʃkʊn ʃnu qra-t f-d-dar
who what read.PAST.2P.F.SG at-the-house
‘[Who what read at home?]
- 14) *qra-t ʃkʊn ʃnu f-d-dar
read.PAST.2P.F.SG who what at-the-house
‘[Read who what at home?]

(13) is ungrammatical because both argument wh-elements are fronted to the left periphery. (14) is ill-formed, for nominal wh-elements are in the in-situ position. Based on (12), (13), and (14), MA conforms with English-type languages: only one wh-element is fronted whereas the other(s) stay behind.

In this subsection, we reached the following conclusions and observations. First, MA can either front or leave the wh-elements in-situ. Second, the in-situ strategy is restricted to echoing questions. That is, when wh-elements are in-situ, only echo-reading is possible. Finally, MA is an English-type language that fronts only one wh-element and leaves other(s) behind. After briefly describing the structure of MA in terms of word order and the strategies used for wh-elements, the following two sections (cf. section 3 and 4) investigate how both MP and OT analyze these strategies.

IV. ANALYSIS OF WH-QUESTIONS FROM A MINIMALIST PERSPECTIVE

Let us first start with the first strategy of fronting question elements. Recall that we divided them into three classes: wh-subjects, wh-objects, and wh-adjuncts. Let us first begin with wh-subjects as in sentence (15) below:

- 15) ʃkʊn qra-t l-ktab
who read.PAST.2P.F.SG the-book
‘Who read the book?’

We follow the primary trend in the literature that subjects originate inside the verb phrase (i.e., the thematic domain) using the VP-internal subject hypothesis and the vP shell (Chomsky, 1955a, 1995; Koopman & Sportiche, 1991; Larson, 1988, 1990 among many others). Based on this and the idea that wh-subjects question the subject, we will show the following tree diagram (16) obtains:

16)

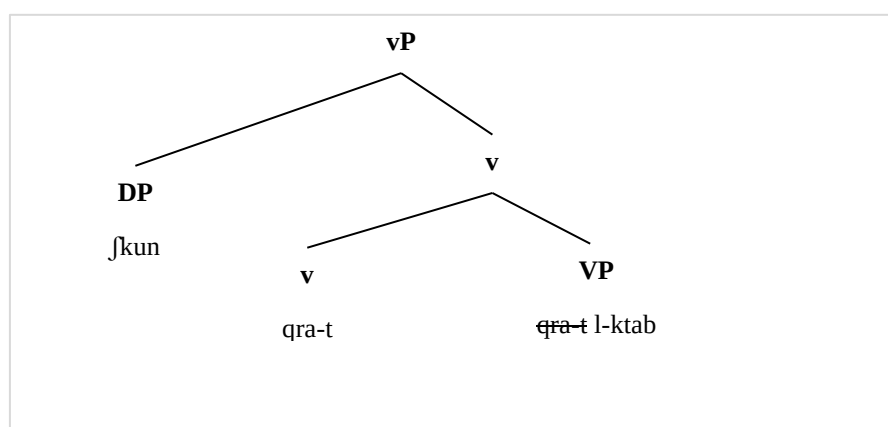


Fig. 1. Wh-subjects’ Base Position in [Spec, vP].

(16) shows that the wh-subject /ʃkʊn/ ‘who’ originates in [Spec, vP]. The verb /qra-t/ ‘read’ moves to T based on Chomsky’s (2005) feature inheritance model, which states that C and T form a complex C-T that acts as a probe and checks the [TNS] and [V] features on the goal v.

17)

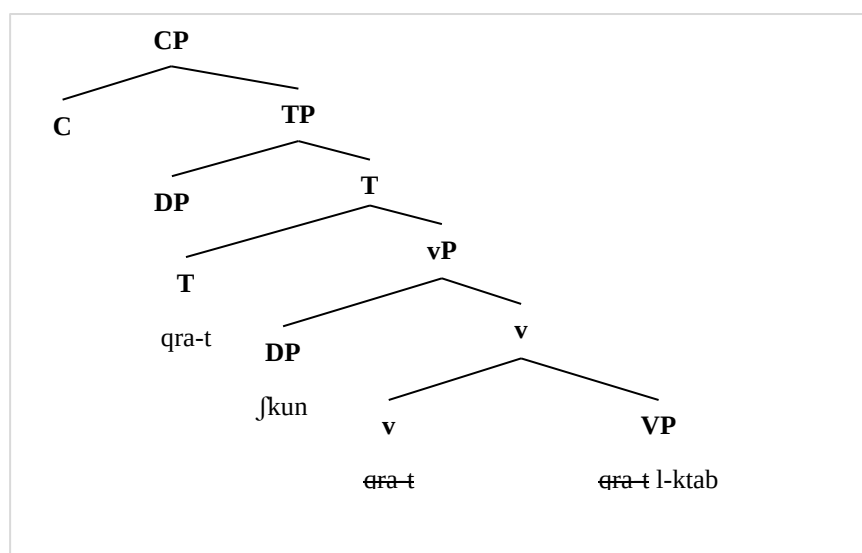


Fig. 2. V-to-v and v-to-T Movement in Moroccan Arabic.

One might ask whether /jkun/ ‘who’ moves from [Spec, vP] to [Spec, TP]. If the subject wh-element does not move, the sentence is deemed ill-formed, as we can see in the following example:

- 18) *qra-t jkun l-ktab
read.PAST.2P.F.SG who the-book
‘Who read the book?’

Based on (18), the wh-subject /jkun/ ‘who’ moved further than the verb to [Spec, TP]:

19)

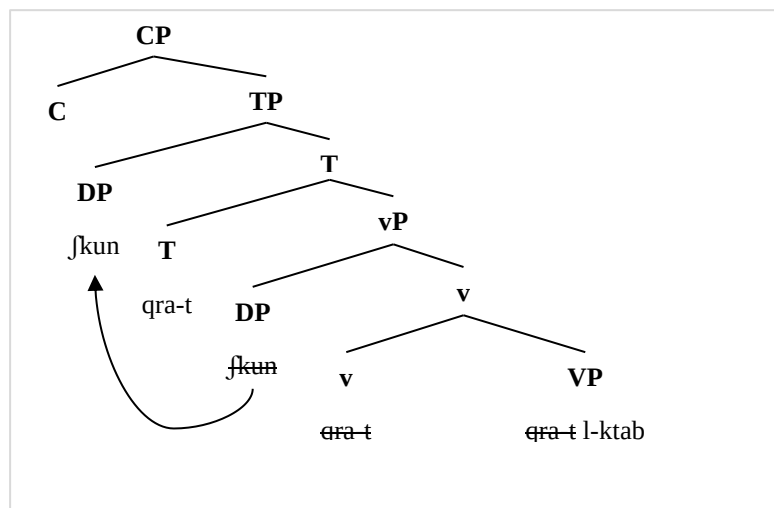


Fig. 3. Wh-subject Movement from [Spec, vP] to [Spec, TP].

The theoretical reasoning behind this movement is in order to check the [EPP] feature (i.e., Extended Projection Principle), a requirement that “a finite tense constituent T must be extended into TP projection containing a subject” (Radford, 2004, p. 64). It also moves to [Spec, TP] to check the nominative Case. According to Cheng (1997), every clause must be typed with appropriate illocutionary force. In our example (19), no indication shows that the structure has an interrogative force. For this reason, a [Q] feature is introduced in C to show this at the level of the LF (Baker, 1970; Chomsky, 1970; Chomsky, 1995). The uninterpretable [Q] feature on C probes for a wh-element that has an interpretable [Q] feature and attracts it to the specifier of CP. The movement of the wh-element of [Spec, CP] (i.e., the pragmatic domain) results in the deletion of the uninterpretable [EPP] and [Q] features, as seen in the following figure:

20)

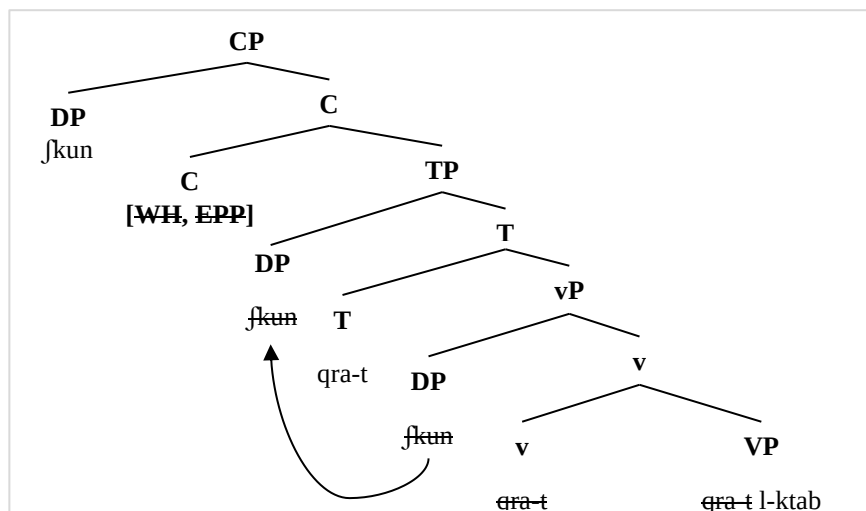


Fig. 4. Wh-subject Movement from [Spec, TP] to [Spec, CP].

A theoretical motivation of wh-elements to [Spec, CP] has to do with checking the [EPP] feature, a suggestion posited by Chomsky (2000, 2001). As soon as the wh-subject moves to [Spec, CP], the domain of the phase CP, which is the complement TP, undergoes a transfer. This means that no element in the TP is accessible for further operations. In other words, the domain of the phase CP, which is TP, becomes impenetrable. This condition is referred to, in the literature, as Phase Impenetrability Condition (henceforth PIC) (Chomsky, 2001, p. 5):

21) Phase Impenetrability Condition

The c-command domain of a phase head is impenetrable to an external probe (i.e., A goal which is c-commanded by the head of a phase is impenetrable to any probe c-commanding the phase).

A wh-subject can also appear with the complementizer /lli/ 'that'. In this situation, /lli/ 'that' is base generated in the C head:

- 22) [CP ʃkun [C lli qra-t f-ḡ-ḡar
who that read.PAST.2P.F.SG at-the-house
'Who read at home?']

A fundamental question that one might ask is, what is the difference between a structure that has the complementizer (e.g., (22)) and one that does not (e.g., (15))? In the Minimalist literature, it is proposed that a way to show this difference is through the claim that wh-elements actually move to [Spec, FocusP] and that the head Focus emphasizes the structure (Gad, 2011). However, this still does not solve the problem since it is claimed that wh-elements move to [Spec, FocusP] with or without the complementizer. In the next section, OT can explain this since it incorporates pragmatics. The same analysis can also extend to wh-objects and wh-adverbials. These elements move from their initial position (i.e., direct object and adverbial positions, respectively) and move to [Spec, CP] for [EPP] and [WH] checking purposes. Note that only wh-subjects and wh-objects allow the complementizer to co-occur with them, and it is impossible in wh-adverbials. The reason is simple. Wh-adverbials are not nominals to link up with the complementizer. Let us now move to multiple wh-construction:

- 23) ʃkun qra-t ʃnu f-ḡ-ḡar
who read.PAST.2P.F.SG what at-the-house
'Who read what at home?'

As we have said earlier, C, which hosts the [WH] and [EPP] features, attracts wh-elements to its specifier. What is interesting is that whereas it is possible to propose the wh-subject (e.g., (23)), the sentence is deemed ill-formed once we front, instead, the wh-object:

- 24) *[CP ʃnu [TP ʃkun qra-t f-ḡ-ḡar
what who read.PAST.2P.F.SG at-the-house
'Who read what at home?']

It seems that C prefers to attract the closest wh-element that its c-commands (Announi, 2019). In (24), the wh-object is further away than C compared to the wh-subject. This is summarized in a principle called Attract Closest Principle (Radford, 2004, p. 162):

25) *Closest Principle*

A head which attracts a given kind of constituent attracts the closest constituent of the relevant kind. Another question is why it is not possible to front both wh-elements:

- 26) *ǰkun ǰnu qra-t f-d-dar
who what read.PAST.2P.F.SG at-the-house
'[Who what read at home?]

One answer might be that C needs to attract only one wh-element to check the [WH] and [EPP] features. If another one is proposed, then there is no motivation for its movement; thus, the derivation crashes at LF. Let us now move to the in-situ strategy:

- 27) Meriem qra-t l-ktab fin
Meriem read.PAST.2P.F.SG the-book where
'Meriem read the book where?'

(27) has an interrogative illocutionary force. This means that the [WH] feature is present in C. The question is, how does the [WH] feature on C link up with the wh-element in-situ? In other words, how is scope assigned? One answer is provided by Pesetsky's (1987) Unselective Binding: a question operator in [Spec, CP] binds the variable, which is the wh-element. In this situation, we can interpret the interrogativity of the sentence.

We have talked about matrix wh-questions but did not mention embedded wh-questions, which have an interesting revelation. Consider the following example:

- 28) ǰmæd bya yʃræf ǰnu ʈra
Hmed want know what happened
'Hmed wants to know what happened.'
29) *ǰmæd bya yʃræf ʈra ǰnu
Hmed want .know happened what
'Hmed wants to know what happened.'

Example (29) in Cairene Arabic is grammatical; in fact, El-Touny (2011b, p. 23) states that the verb (in our case /bya/ 'want') subcategorizes for a [-WH] complement, and that is why the wh-question "gets into a checking relation with the functional head C – since it is the only head that is +Q". We use the same reasoning but argue that this is what pushes MA wh-element /ǰnu/ 'what' to be fronted to [Spec, CP]. That is, there is a need for the uninterpretable [Q] feature on C to search for its Goal and check its features; this results in the fronting of the wh-element, which carries a [Q] feature to be fronted to [Spec, CP].

This section looked at how wh-elements are analyzed from the Minimalist perspective. First, we saw that wh-subjects originate in [Spec, vP] and move to [Spec, TP] to check the [EPP] and Nominative Case features. The wh-subject moves further from [Spec, TP] to [Spec, CP] to check the [WH] and [EPP] features. As soon as the wh-element moves to [Spec, CP], the TP complement of C is shipped and transferred to PF and LF. We also said that the wh-subject could appear with the complementizer and stated that the Focus analysis is inadequate to show the difference between the complementizer's appearance and absence in wh-subject and wh-object construction. Second, we noted that multiple wh-construction is the outcome of C attracting the closest wh-element to it. It is not possible to front two wh-elements because C needs only one wh-element to check the [WH] and [EPP] features. Finally, we stated that in-situ wh-elements are bound by a question operator in [Spec, CP] via Unselective Binding. The next section explores the analysis of wh-questions from an OT perspective.

V. ANALYSIS OF WH-QUESTIONS FROM AN OPTIMALITY-THEORETIC PERSPECTIVE

This section looks at how wh-questions are analyzed from the perspective of OT. Note that the comparison between OT and MP in terms of the wh-question is not new. For example, El-Touny (2011a, 2011b) investigated the issue of the optionality of wh-questions in Cairene Arabic from a comparative perspective between OT and MP. It is crucial to apply her findings and see how a wh-movement language like MA interacts with the two 'competing' theories. Let us use some constraints surveyed by El-Touny (2011b, pp. 22–23) and see how they can be applied to MA;

- 30) Economy of Movement (STAY): Traces are not allowed (Grimshaw, 1995).
- 31) Full-Interpretation (FULL-INT): Lexical conceptual structure is parsed (Grimshaw, 1995).
- 32) Operator-In-Specifier (OP-SPEC): Syntactic operators must be in the specifier position (Grimshaw, 1995).
- 33) PARSE-SCOPE: Scope requirements stated in the input must be parsed (Legendre *et al.*, 1995).
- 34) PARSE-WH: [+WH] elements in the input must be parsed (Legendre *et al.*, 1995).
- 35) Subcategorization (SUBCAT): Outputs should meet the subcategorization requirements of the verb (this constraint is undominated) (Legendre *et al.*, 1995).

We first start talking about the two competing constraints OP-SPEC and STAY. If the former outranks the latter, then we find English-like wh-formation. The reverse happens in languages like Chinese, and it is STAY, which outranks OP-SPEC. Since MA is a wh-movement language, then we show the following Tableaux for example (36):

36)

TABLE I: OVERT WH-MOVEMENT IN MOROCCAN ARABIC		
	OP-SPEC	STAY
a. [CP f̣nu qra-t Meriem f-d-dar [CP What did Meriem read?]		*
b. [TP qra-t Meriem f-d-dar f̣nu [TP Meriem read what?]	*!	

Candidate (a) is the most optimal since it does not violate the highest-ranked constraint OP-SPEC. Candidate (b) fatally violates OP-SPEC constraint since the wh-element is left in-situ. Both Btoosh (2010) and Faraj (2018) show that OP-SPEC is the highest-ranked constraint in (Modern) Standard Arabic as well. One crucial observation we have made earlier is that it is actually acceptable to leave a wh-element in-situ, as seen in the following example:

- 37) Meriem qra-t f̣nu
Meriem read.PAST.2P.F.SG what
'Meriem read what?'

The question we raise here is that if we consider (37) grammatical, then candidate (b) should be regarded as grammatical in (36). We have two options here. We either modify our Tableaux (36) and somehow make both two candidates the optimal candidates, or we seek another explanation. In the case of MA, another explanation is the most feasible. Indeed, unlike optional wh-movement languages, which allow both wh-fronting and wh-in-situ, example (37) is merely an echo question. At the same time, the representation in (36) for candidate (b) has a non-echo reading. It should be noted that echo questions "are not requests for new information; they presuppose that the answer is already known; hence their interpretation depends on a restricted set of values for the wh-variable [which] corresponds to an input marked with a feature like D-linking" (Legendre *et al.*, 1995, p. 13). In other words, whereas candidate (b) in (36) is a request for new information, (37) is an echo question; hence, (37) will have a different Tableaux incorporating a different set of constraints. We propose the following new constraint:

- 38) *NEW-INF (New Information): [+WH] elements in the input should not contain new information. This means that, in the case of wh-elements having an echo reading, we get the following Tableaux:

39)

TABLE II: CONSTRAINT INTERACTION OF WH-ELEMENTS WITH ECHO READING			
	*New-INF	OP-SPEC	STAY
a. [CP f̣nu qra-t Meriem f-d-dar [CP What did Meriem read?]	*!		*
b. [TP qra-t Meriem f-d-dar f̣nu [TP Meriem read what?]		*	

Regarding echo-reading, *NEW-INF is the highest-ranked constraint; consequently, candidate (a) fatally violates *New-INF in addition to STAY. Candidate (b) incurs the least violations in terms of *New-INF and STAY. Since *NEW-INF is higher ranked than OP-SPEC, candidate (b) becomes the most optimal candidate in (39).

Let us now turn to another problematic issue and see if OT can solve it. Consider the following two examples:

- 40) [CP $\int$ kun qra-t f- $\dot{q}$ - $\dot{d}$ - $\dot{a}$ r
who read.PAST.2P.F.SG at-the-house
'Who read at home?']
- 41) [CP $\int$ kun [C lli qra-t f- $\dot{q}$ - $\dot{d}$ - $\dot{a}$ r
who that read.PAST.2P.F.SG at-the-house
'[Who that read at home?]' (Literal reading)]

One thing that is very interesting about MA is that it allows the presence and absence of the complementizer /lli/ 'that' (e.g., (40) and (41), respectively). El-Touny (2011b, pp. 25-26) discusses an optionality situation in English when it comes to the complementizer 'that':

- 42) I think that John is a fool.
43) I think John is a fool.

El-Touny (2011b) states that 'think' subcategorizes for either CP or TP. Therefore, two constraints are in play: SUBCAT and FULL-INT. The former is a faithfulness constraint, which ensures that the subcategorization of the verb is the same in the input and the output; the latter constraint "preserves the proposition of the sentence and the integrity of the input by not having either an extra element in the winner or missing elements already found in the input" (El-Touny, 2011b, p. 25). Therefore, the optimal candidate will violate neither SUBCAT nor FULL-INT. Deleting the complementizer 'that' will violate FULL-INT whereas having both a missing complementizer and CP projection violates both FULL-INT and SUBCAT, respectively. This case of optionality is explained through the fact that both (42) and (43) "come from different inputs; they are not candidates competing in the same competition;" consequently, "their treatment in OT is that of completely different sentences" (El-Touny, 2011b, p. 26).

Can our case be explained the same way as this English example? It is clear that our examples do not correspond to an issue of subcategorization. Let us explore our case of the optionality of the complementizer further. We claimed that both structures in (40) and (41) deal with the CP; the only difference is that whereas C hosts /lli/ 'that' in (41), it does not do so in (40). It is evident that / $\int$ kun/ 'who' is situated in [Spec, CP] in (41) since it is positioned to the left of C. However, it is not apparent that the same case happens in (40). To conform to the principle of economy (Chomsky, 1995), it is essential to state that the wh-subject stays in [Spec, TP] but only moves if /lli/ 'that' is present (Announi, 2021). Example (40) will have the following updated representation:

- 44) [TP $\int$ kun qra-t f- $\dot{q}$ - $\dot{d}$ - $\dot{a}$ r
who read.PAST.2P.F.SG at-the-house
'Who read at home?']

El-Touny (2011b) reports French optionality. Let us look at the following examples (Müller, 2001):

- 45) [_{CP} Qui [_{IP} as-tu [_{VP} vu t]]]
who have-you seen
- 46) [_{CP} [_{IP} Tu as [_{VP} vu qui]]]
you have seen who
'Who did you see?']

(45) and (46) are case pseudo-optionality; that is, the optional structures are the outcome of different candidate sets; this automatically means that each optional structure is the winner of its own competition (Müller, 2001). Looking at all of these observations, it is evident that the difference between (40) and (41) is more pragmatic than syntactic; in fact, the presence of /lli/ 'that' entails more emphasis. That is why we introduce this new discourse-related constraint called ALIGN-FOCUS, which states the following (El-Touny, 2011b, p. 29):

- 47) ALIGN-FOCUS: align contrastively focused constituents with left/right edge of VP (Samek-Lodovici, 1998).

This constraint guarantees that wh-questions move to [Spec, CP] and do not stay in [Spec, TP], for example. Therefore, to have a correct representation of (41), we have the following Tableaux (48).

Tableaux (48) shows that the OP-SPEC constraint is not enough to produce the most optimal candidate since both candidate's respect OP-SPEC (i.e., the wh-subject is in a specifier position, in [Spec, TP] and [Spec, CP], respectively). Thus, ALIGN-FOCUS guarantees that the most optimal candidate must be situated in [Spec, CP]. Instead of using OP-SPEC and ALIGN-FOCUS, Al-Oshari & Al-Shar'abi (2016) use the constraint Q-Marking, which shows that "at least one wh-phrase must move in order to create the proper Q-marking environment" (p. 159). We do not think this constraint can work since the Q-marking

can happen even at a long distance. That is, it is not new in the literature that there are languages that can, for example, agree with or license their meaning with other items from afar (e.g., Icelandic long-distance agreement, see Zeijlstra, 2012, pp. 527–530). In other words, the interrogative of the sentence can be interpreted without the wh-elements having to move to the left periphery. Therefore, we need an explicit constraint such as ALIGN-FOCUS that would dictate a movement to the left periphery.

48)

TABLE III: WH-CLEFT MOVEMENT IN MOROCCAN ARABIC

				ALIGN-FOCUS	OP-SPEC	STAY
a.	[_{CP} [_C lli [_{TP} f _{kun} qra-t	f-d-dar		*!		*
	who read.PAST.2P.F.SG at-the-house					
	<i>'Who read at home?'</i>					
b.	[_{CP} f _{kun} [_C lli [_{TP} qra-t	f-d-dar				*
	who that read.PAST.2P.F.SG at-the house					
	<i>'Who read at home?'</i>					

One might ask, how does OT distinguish between canonical wh-elements and wh-clefts? That is, how do we distinguish between wh-movement with and without the complementizer? The issue of complementizer optionality can be solved by the constraint TELEGRAPH (TEL), which entails that function words (i.e., complementizers) should not be pronounced (Broekhuis & Woolford, 2013, p. 126). When this constraint is the highest-ranked constraint, the sentence does not use the complementizer. Pesetsky (1997) proposed a constraint called Wh-C, which entails that a complementizer should not be pronounced. Another important optionality issue we have not mentioned yet is the optionality of the resumptive pronoun in the case of question formation. In MA, we can optionally use the resumptive pronoun with the wh-element. In this case, Keer (1999, p. 20) proposes the constraint *RES, which demands that a resumptive pronoun is not allowed. All of these facts show that OT can easily handle the issue of optionality, most notably complementizer and resumptive pronoun optionality.

VI. OPTIMALITY THEORY AND THE MINIMALIST PROGRAM: A COMPARISON

Both MP and OT have their way of showing the alternation between wh-movement and wh-in-situ strategies/languages. Whereas MP uses feature checking to explain such behavior, OT uses the ranking between two constraints. Although OT seems to easily display binarity, by switching one constraint over the other (i.e., changing the ranking), we get one type of language. However, it is not as easy, and once we dive into the syntax of wh-constructions, a simple ranking of constraints does not suffice. Samek-Lodovici (2006, p. 91) agrees and says that “a minimalist perspective would encourage a deeper understanding of universal constraints,” “Therefore, both theories have their strengths and weaknesses in showing the difference between wh-movement and wh-in-situ languages.

Another distinction between MP and OT is in terms of linguistic variation (Samek-Lodovici, 2006, pp. 77–80). That is, the two theories differ regarding whether universal constraints (or rules) are permitted to conflict with one another. MP considers linguistic variation as “accidental” (Samek-Lodovici, 2006, p. 88), unlike OT. Based on findings from the syntax of wh-elements, especially the wh-movement/wh-in-situ dichotomy, it seems that linguistic variation is inevitable, a consequence that seems to favor OT. However, essentially, the way a linguistic theory treats linguistic variation is, at the end of the day, based on perspectives: whereas OT treats rules as violable, MP does not. Therefore, this can also extend to the psychological reality of the concept of ‘ungrammaticality’. If it really does exist and matters in the processing of sentences, then MP is favored.

When it comes to accounting for the difference between echo in-situ questions and non-echo in-situ questions, OT can account for it. We proposed constraints that can regulate the distinction between the two constructions. Therefore, OT provides an advantage MP does not have: the clear incorporation of pragmatics. We use the word ‘clear’ because we can still see some glimpses of pragmatics in MP. These glimpses include the current analysis of wh-elements as a form of Focus Phrase. We should not forget that CP is often considered the pragmatic domain that hosts wh-elements, focalized, and topicalized elements, to name a few. However, OT can incorporate other pragmatic relations that are otherwise difficult to include in MP analysis.

So far, we have looked at how both MP and OT can explain wh-movement/in-situ strategies in their way. We also saw how OT could explain some phenomena whereby there is an interplay between syntax and pragmatics (i.e., echo and non-echo reading). Now, one clear example of MP not being able to explain a phenomenon whereas OT can is the case of optionality. In languages that have optional wh-movement (i.e., a wh-question can either be fronted or left in-situ), the MP cannot explain this since “there cannot be two

kinds of Cs, one that requires movement and another that does not” (El-Touny, 2011b, p. 21). This means that it is not economical to state that C can have both strong and weak features simultaneously. We also discussed the case MA, where complementizers can occur optionally with fronted wh-elements. In this regard, OT is better at explaining this optionality by presenting the ranking between constraints. In our case, we talked about Align-Focus, a constraint that demands wh-elements to appear with complementizers when there is a contrastive focus. Our conclusion, however, is not that OT and MP are two competing theories. We follow the proposal of Broekhuis and Woolford (2013), who state that MP and OT are complementary parts of a more general model of grammar. That is, whereas OT can handle specific issues, MP will handle others. We can even go further and ask, as hinted by Samek-Lodovici (2006, p. 91), what the Minimalist perspective can bring to OT-based inquiries and what the OT perspective can bring to the MP-based inquiries.

VII. CONCLUSION

This paper investigated some elements of wh-construction. These are the fronting strategy, the in-situ strategy, multiple wh-questions, and relativized wh-elements. The purpose was to analyze these wh-constructions in light of the two theories of MP and OT. We concluded that although both theories examine wh-elements in their own right, OT has the advantage of tackling the issue of the syntax-pragmatics interface.

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CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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