

Optionality in Cairene Arabic *wh*-questions between the Minimalist program and Optimality theory^{*}

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The aim of this study is to explore the optionality phenomenon found in Cairene Arabic (CA) matrix and embedded *wh*-questions, where a *wh*-phrase can be found either in-situ or in Spec-CP. This is explored within two competing theories, the Minimalist program (MP) and Optimality theory (OT). MP (Chomsky 1995) and OT (Prince & Smolensky 1994, 2002, 2004) provide different explanations for this phenomenon. In MP, the Optionality phenomenon in CA can be described in a purely syntactic way. The *wh*-feature of C can be checked by the *wh*-phrase either in the Spec-CP position or the in-situ position. In contrast, the OT analysis incorporates the discourse-related constraint ALIGN-FOCUS (WH) to tip the scale in favor of the optimal form. MP does not rely on other fields of linguistics such as discourse, which falls under the individual discretion of the speaker and not on standard rules. Hence, OT best describes this phenomenon.

1. Introduction

The sentence construction for *wh*-questions in Cairene Arabic (CA) (argument and adjunct alike) takes two forms: one with the *wh*-phrase in its base position, in-situ; and one where the *wh*-phrase is found in Spec-CP. The following example is one where the *wh*-phrase is in-situ:

- (1) el-walad fein?
The-boy where?
Where is the boy?
[CP Q [TP [PredicateP the-boy where]]]

In contrast, here is the same input but with the *wh*-phrase found in Spec-CP:

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- (2) fein el-walad?
 Where the-boy?
 Where is the boy?
 [CP where Q [TP [PredicateP the-boy]]]¹

This optionality phenomenon is dealt with by two competing theories, the Minimalist program (MP) and Optimality theory (OT). MP relies on feature checking to account for movement. The functional head (Probe) carries an uninterpretable feature which triggers the movement of an element (Goal) and gets into a checking relation with it to satisfy the uninterpretable feature. On the other hand, OT claims that the optimal candidate incurs as few violations as possible in the hierarchy of ranked constraints involved in the competition. This hierarchy is language specific.

The following is an account of the treatment of MP and OT to the optionality phenomenon found here. I'm arguing that MP best describes the situation in a purely syntactic method relying on feature checking of the wh-phrase in either positions: in-situ and in Spec-CP. Examples from Iraqi Arabic (IA) and Hindi are given in support of this. Whereas, I propose a new constraint to the family of Focus-related constraints that would allow the presence of the wh-phrase in Spec-CP. Examples from English and French are given in support of this claim.

The article is divided into 8 sections. Section 1 is the introduction. Section 2 deals with question formation in MP. Section 3 discusses a minimalist approach to optionality, with subsections for IA and Hindi. Section 4 is dedicated to a minimalist approach to the optionality in CA, with subsections for matrix and embedded wh-questions. Section 5 gives a simple account of question formation in OT, with a subsection for the prominent constraints used in the competitions. Section 6 gives an OT approach to optionality, with subsections for English and French. Section 7 deals with the OT account of optionality in CA, with subsections for matrix and embedded wh-questions. Section 8 is the conclusion followed by the list of references used.

1.1. A note on transcription

The transcriptions in this paper use IPA to represent the Arabic data. The following table is a chart of the IPA consonant symbols used along with their corresponding Arabic letters.

¹ The *Predicate Phrase* is the “Jumla Ismiya” of Standard Arabic.

	Labial	Plain		Emphatic		Palatal	Velar	Uvular	Pharyngeal
		Dental	Alveolar	Dental	Alveolar				
Nasal	م m	ن n							
Stop	voiceless		ت t	ط tʕ			ك k	ق q	
	voiced	ب b	د d	ض dʕ		ج (d)ʒ ~ g			
Fricative	voiceless	ف f	ث θ	س s		ص sʕ	ش ʃ	خ x ~ χ	ح ħ
	voiced		ذ ð	ز z	ظ ʔ ~ zʕ			غ ɣ ~ ʁ	ع ʕ
Trill			ر r						
Approximant		ل ~ lʕ				ي j	و w		

Figure 1. Modern Standard Arabic Consonant Phonemes.²

Due to space configurations, the following symbols are not present in the table:

- (1) The symbol for the Glottal Voiceless Stop (ʔ) (ε).
- (2) The symbol for the Glottal Voiceless Fricative (h) (δ).

Vowels use the standard IPA transcription system.

2. Question formation in the Minimalist program

In a language like English, where the wh-phrase of matrix wh-questions is obligatorily found in Spec-CP, the reason for moving the wh-phrase from its original position (its thematic-role position) to the left-most peripheral position (an A'-position) is the same: the Extended Projection Principle (EPP) feature carried by the functional head C is uninterpretable and thus serves as a Probe searching for a Goal that carries an interpretable wh-feature to check it; in consequence, the Goal moves from its position to get into a checking relation with the Probe.

In other languages, such as Chinese, C does not carry an uninterpretable EPP feature, thus prohibiting movement altogether. These languages (English and Chinese) have a clear-cut analysis of the appearance of wh-movement or lack thereof. This clear-cut analysis, however, is not applicable to CA.

It is a dialect like CA which has optionality in the location of the wh-phrase that is quite interesting. A clear-cut analysis like the above languages is not applicable. If CA had 2 Cs, one that allows the wh-phrase to remain in-situ and another C which prompts its movement, this solution would not be a valid one. The existence of two Cs in one

² This figure is taken from Wikipedia [http://en.wikipedia.org/wiki/Arabic_phonology].

language is not a practical solution. It goes against every economically-oriented description of the language in any theory of linguistic analysis.

3. A Minimalist approach to optionality

This section explores other languages that exhibit optionality and an MP analysis it. The analysis given to these languages can be applicable to CA.

3.1. Iraqi Arabic (IA)

Wahba (1991) gives an example from Iraqi Arabic (IA) where a wh-phrase carrying a +WH feature is licensed in any Spec position within the tensed domain of the +Q Comp. The following examples are taken from Wahba (1991: 258) and repeated here as (3).

In (3), the sentences show that the wh-phrase *meno* (meaning who) can appear in its base position and in all the intermediate Spec positions with a direct question interpretation:

- (3a) [CP₁ [Mona raadat [CP₂ [tijbir Suʔad [CP₃ [tisaʔed *meno*]]]]]]?

Mona wanted to-force Suʔad to-help who?

+TNS -TNS -TNS
- (3b) [CP₁ [Mona raadat [CP₂ [tijbir Suʔad [CP₃ *meno*_i [tisaʔed *e*_i]]]]]]?
- (3c) [CP₁ [Mona raadat [CP₂ *meno*_i [tijbir Suʔad [CP₃ *e*_i [tisaʔed *e*_i]]]]]]?
- (3d) [CP₁ *meno*_i [Mona raadat [CP₂ *e*_i [tijbir Suʔad [CP₃ *e*_i [tisaʔed *e*_i]]]]]]?

“Who did Mona want to force Suʔad to help?”
(Wahba 1991: no. 10)

The C position in IA does not require the wh-phrase to obligatorily move in order to have its WH-feature checked as in English. The verbs in the embedded clauses are [-TNS], hence the wh-phrase can be found in any intermediate Spec position. If an embedded clause contains a tensed verb, the wh-phrase cannot be interpreted as a matrix question but as an embedded one, the following examples represent this:

- (4a) [+WH [Mona_i ĥawlat [PRO_i *tifleri* feno]]]?
 Mona tried to-buy what
 “What did Mona try to buy?”
- (4b) *+[+WH [Mona tsawwarat [-WH [Ali iftara feno]]]?
 Mona thought Ali bought what
 “What did Mona think Ali bought?”
 (Wahba 1991: no. 15a-b)

Simpson (2000) corroborates Wahba’s views and says that the domain for checking the WH-feature in IA is the tensed domain of the +WH Comp. He tries to analyze the examples in a minimalist way since the examples in Wahba are pre-minimalist. He states his conclusions in the following points:

- a. All the wh-phrases of IA need their WH-feature to be checked.
- b. The functional head C in IA does not carry any uninterpretable features that demand any element to be moved to its Spec position.
- c. All the +WH features must be checked before Spell-Out. This explanation contra Bošković (1998) where C is introduced at LF.
- d. The checking domain for the WH-feature carried by the wh-phrase in IA is the tensed domain of the +Q Comp. The wh-phrase can occur in any intermediate Spec-position m-commanded by that +Q Comp and be interpreted as a main question.

3.2. Hindi

Simpson (2000) also gives examples from Hindi, where the wh-phrase can be found optionally in its base position or in Spec-CP. The wh-phrase can be checked in any position m-commanded by the +Q Comp in its own immediate tense domain:

- (5) [_{CP} [_{TP} Raam-ne [Mohan-ko kise dekhne-ke liye] kahaa]]
 Ram-ERG Mohan-ERG whom to-see for told
 “Who did Ram tell Mohan to look at?”
 (Simpson 2000: no. 18)

- (6) [CP₁ kaun [TP Raam-ne [VP kahaa [CP₂ ki t aayaa-hE]]]]
 who Ram- ERG said that has-come
 “Who did Ram say has come?”
 (Simpson 2000: no. 20)

Both the IA and Hindi’s minimalist analysis can be applied to CA as in the following section.

4. Optionality in Cairene Arabic (CA): A Minimalist approach

For a minimalist analysis of CA, there cannot be two kinds of Cs, one that requires movement and another that does not. The optionality phenomenon is apparent throughout CA’s wh-questions, in both the argument wh-phrases and the adjunct ones, in matrix and embedded wh-questions alike.

4.1. Matrix wh-questions

4.1.1. Argument wh-questions

The following is an example of an argument wh-phrase found in-situ:

- (7) ḥasal ʔeh?
 happened what?
 “What happened?”
 [CP Q [TP [VP happened what]]]

The following is an example of an argument wh-phrase found in Spec-CP, a prominent feature of these examples is the obligatory presence of *ʔilli* (meaning ‘that’) base-generated under C:

- (8) ʔeh ʔilli ḥasal?
 what that happened?
 “What happened?”
 [CP what_i that [TP [VP happened t_i]]]

Examples (7-8) show that the presence of the wh-phrase in either position is a perfectly acceptable occurrence in CA. Furthermore, analogous to IA and Hindi, it is the WH feature carried by the wh-phrase that gets into a checking relation with the functional head C and is checked either in-situ or in Spec-CP.

4.1.1.1. *ʔilli* (meaning ‘that’)

The complementizer *ʔilli* is the slang form of the Standard Arabic (SA) form *ʔallaði* (meaning that). This word is used as a modifier of nouns. They are a family of modifiers that are gender specific. An example is the following:

- (9) ʔal-ketab-u ʔallaði katab-tu-h yakoon-u l-ak.
 the-book_i that wrote-I-it_i is to-you.
 (NOM. MSC. SNG.) (MSC. SNG.)
 “The book that I wrote is yours.”
 [CP₁ [TP the book_i [CP₂ that wrote-I-it_i] [VP is yours]]]

This complementizer is base generated in C and it is only used with argument wh-phrases found in Spec-CP.

4.1.2. Adjunct wh-questions

Examples (10-11) show Adjunct wh-phrases³ in both in-situ and Spec-CP positions:

- (10) ʔamalt keda leh?
 did+you this why?
 “Why did you do this?”
 [CP Q [TP [VP did+you this why]]]
- (11) leh ʔamalt keda?
 why did+you this?
 Why did you do this?
 [CP why_j Q [TP [VP did+you this t_j]]]

Adjunct wh-questions behave in the same manner as argument ones; the wh-phrase can be found in the optional position. However, there is a difference in that the adjunct wh-phrase found in Spec-CP does not require the presence of the complementizer *ʔilli*.

³ This is one example of an adjunct wh-phrase. All the adjunct wh-phrases in CA follow the same rules.

4.2. Embedded wh-questions

Like matrix wh-questions, embedded wh-questions also have optionality in the position of the wh-phrases. The following example is of an argument wh-phrase:

- (12) Mona *ʕawza* *teʕraf* *ħasal* *ʔeh.*
 Mona wants.FEM. SNG. know happened what.
 ‘‘Mona wants to know what happened.’’
 [CP₁ [TP₁ Mona [VP₁ wants [CP₂ [TP₂ [VP₂ know [CP₃ Q [TP₃ [VP₃ happened what]]]]]]]]]]

The verb *ʕawza* (meaning ‘want’) subcategorizes for a [-WH] complement. Hence, the wh-phrase gets into a checking relation with the functional head C3 since it is the only head that is +Q.

Optionality continues with embedded questions like matrix questions. In example (13) the wh-phrase of the same input as example (12) appears in Spec-CP3 position:

- (13) Mona *ʕawza* *teʕraf* *ʔeh* *ʔilli* *ħasal.*
 Mona wants.FEM. SNG know what that happened
 ‘‘Mona wants to know what happened.’’
 [CP₁ [TP₁ Mona [VP₁ wants [CP₂ [TP₂ [VP₂ know [CP₃ what_i that [TP₃ [VP happened t_i]]]]]]]]]]

Optionality of the positions of wh-phrases in embedded questions continues with every wh-phrase in CA. Optionality persists with argument and adjunct wh-phrases alike. Examples (14-15) show adjunct wh-phrases in the in-situ and in Spec-CP positions respectively:

- (14) *ana* *shoft* *el-nas-di* *ʕamalet* *keda* *leh.*
 I saw the-people-these did-they this why.
 ‘‘I saw why these people did this.’’
 [CP₁ [TP₁ I [VP₁ saw [CP₂ [TP₂ the-people-these [VP₂ did [NP this] [AdvP why]]]]]]]]

- (15) *ana* *shoft* *leh* *el-nas-di* *ʕamalet* *keda.*
 I saw why the-people-these did-they this.
 ‘‘I saw why these people did this.’’
 [CP₁ [TP₁ I [VP₁ saw [CP₂ why_j [TP₂ the-people-these [VP₂ did [NP this] [AdvP t_j]]]]]]]]

In the above examples, the adjunct wh-phrase occurs freely in either Spec-CP or in its base position. The wh-feature carried by the wh-phrase is checked by the functional head C in either position.

5. Question formation in Optimality theory

In a language like English, the wh-phrase must move obligatorily to satisfy the high-ranked constraint OP-SPEC, violating another constraint that prohibits movement called STAY. But since OP-SPEC out-ranks STAY and must be preferentially satisfied in English, the competition between the candidates is settled for optimal form that has movement of the wh-phrase. In a language like Chinese, the ranking of the above two constraints is reversed, with STAY out-ranking OP-SPEC, hence no movement of the wh-phrase is found in Chinese, it remains instead in-situ.

In a language that has optionality like CA, it is quite hard to explain if a solution for the optionality is to propose two ranking hierarchies for its questions' constructions.

5.1. The constraints used in the analysis

The following constraints are proposed for the present analysis of Cairene Arabic:

- a. Economy of Movement (STAY): Trace is not allowed. (Grimshaw 1995, 1997)
- b. Full-Interpretation (FULL-INT): Lexical conceptual structure is parsed. (Grimshaw 1995, 1997)
- c. Operator-In-Specifier (OP-SPEC): Syntactic operators must be in specifier position. (Grimshaw 1995, 1997)
- d. PARSE-SCOPE: Scope requirements stated in the input must be parsed. (Legendre et al. 1995)
- e. PARSE-WH: [+WH] elements in the input must be parsed. (Legendre et.al. 1995)

- f. Subcategorization (SUBCAT): Outputs should meet the subcategorization requirements of the verbs (this constraint is undominated). (Legendre et. al. 1995)

6. An Optimality-theoretic approach to optionality

There are instances in English declarative sentences that have an optional occurrence of an element. Although questions are the subject of consideration in CA, there is a shared concept in OT approaches to English declaratives. French examples of optionality in wh-questions are also considered here.

6.1. Optionality in English

An example of optionality in English is in the use of *that*:

(16) I think that John is a fool.

(17) I think John is a fool.

The verb *think* subcategorizes for either a CP or an IP. This is a case of a difference in the input, which consists of the verb, its arguments, auxiliaries if found, and the tense).

- a. input for (16): think (x, y), x = I, y = CP; Tense = present; Comp = that.
- b. input for (17): think (x, y), x = I, y = IP; Tense = present;

The competition for example (16) is shown in the following tableau. The constraint Subcategorization (SUBCAT) insures that the subcategorization of the verb found in the input is represented in the output. The other constraint, Full-Interpretation (FULL-INT), 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:

	SUBCAT	FULL-INT
☞ a. [CP ₁ [IP ₁ I [VP think [CP ₂ that [IP ₂ John is a fool]]]]]]		
b. [CP ₁ [TP ₁ I [VP think [CP ₂ [IP ₂ John is a fool]]]]]]		*!
c. [CP [TP ₁ I [VP think [IP ₂ John is a fool]]]]]]	*!	*

Table 1. The competition for example (16).

Candidate (a) satisfies both constraints. Candidate (b) loses because it violates FULL-INT. Candidate (c) loses because it violates both constraints.

The explanation for this case is that both these examples come from different inputs; they are not candidates competing in the same competition. Hence, their treatment in OT is that of completely different sentences. This solution is the foundation upon which I will construct my argument for different inputs in the case of CA wh-questions.

6.2. Optionality in French

In French, optionality occurs in matrix questions with only wh-argument phrases. Müller (2001) argues that these optional sentences belong to different candidate sets; hence each is the winner of its own competition.

(18a) [CP Qui [IP as-tu [VP vu t]]]
 who have-you seen

(18b) [CP [IP Tu as [VP vu qui]]]
 you have seen who

“Who did you see?”

(Müller 2001: no. 4a &b)

Müller does not provide a detailed analysis for French. However, he argues that French can be a language that is analyzed within OT as one that has pseudo-optionality, which means that in the case of the above examples (18a-b), the two sentences are generated from two inputs, and they are not competing against one another. In my analysis of CA, the

conclusions for CA can also be applicable to French, since this is a language that exhibits the same type of optionality.

7. Optionality in Cairene Arabic: An Optimality-theoretic Approach

The current analysis shows that CA is a language that OT fails to account for in terms of its optionality phenomenon without resorting to other fields of linguistics besides syntax to convey an analysis.

This study treats optionality as a discourse-related phenomenon; other OT accounts of optionality are found in the papers of Samek-Lodovici (1998, 2005) and Costa (2001), where analyses of such phenomena cannot be explained without resorting to modules of grammar other than syntax⁴.

7.1. Matrix wh-questions

Optionality in OT is analyzed as exhibiting differences in inputs for every sentence. The examples do not compete with each other; rather they are the winners of separate competitions, as (19) (which is a reproduction of example 8) and (20) (contrast with example 9) demonstrate:

(19) ?eh ?illi ħasal?
 what that happened?
 “What happened?”

(20) *?eh ħasal?
 *what happened?
 “What happened?”

Argument wh-phrases found in Spec-CP must include the presence of *?illi*, an element that is vital to the grammaticality of the sentences. If it is not present in the candidates as it is present in the input, the sentences are rendered ungrammatical. The following tableau represents the competition for example (19):

⁴ Prosody is also included in Samek-Lodovici’s and Costa’s papers in the form of the constraint STRESS-FOCUS. This constraint is violated by focused elements that do not receive the stress they need. This constraint goes hand in hand with any focused element that must receive the stress it needs; and since its effect is redundant, it is not included in the competitions. However, in the present analysis, other fields of linguistics than syntax are likewise introduced to account for what is otherwise a purely syntactic phenomenon. In Samek-Lodovici (2005: 4) he writes: “prosodic and syntactic constraints can intermingle”.

	FULL-INT	STAY	OP-SPEC
☞ a. [CP what _j that [IP [VP happened t _j]]]		*	
b. [CP what _j [IP [VP happened t _j]]]	*!	*	
c. [CP [IP [VP happened what]]]	*!		*

Table 2. The competition for example (19).

Candidate (a) is the optimal form, violating only STAY. Candidates (b) and (c) do not parse the complementizer *ʔilli* as it is present in the input; this violates FULL-INT fatally for both candidates. They incur a violation of STAY and OP-SPEC respectively.

An interesting loser is the following, where *ʔilli* is present in the output but the wh-phrase does not move to Spec-CP:

- (21) *ʔilli hasal ʔeh?
That happened what?

Example (21) is ungrammatical, but if it is compared to the grammatical example (19), the outcome is not a logical result that would be found in a competition. The following tableau represents the competition between these two candidates:

	FULL-INT	STAY	OP-SPEC
☞ a. [CP what _j that [IP [VP happened t _j]]]		*	
b. [CP that [IP [VP happened what]]]			*

Table 3. The competition between examples (19) and (21).

Both candidates satisfy the higher-ranked constraint FULL-INT and they incur the same number of violations to STAY and OP-SPEC respectively. But the important question here is: how is it that candidate (b) with a violation of the low-ranked constraint OP-SPEC loses to candidate (a) with a violation of the higher-ranked constraint STAY?

The answer that OT provides is one which includes a constraint that is ranked higher than *STAY*⁵, which the winner candidate does not violate. In this case it is the discourse constraint *ALIGN-FOCUS*.

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

This constraint is violated by misaligned focused elements. For example, the wh-phrase *ʔeh* (what) in (19) is focused. It then moves cyclically to the left of VP, to its landing position at Spec-CP since operators only move to Spec positions. An available Spec position is Spec-IP, but when the wh-phrase moves there, the sentence is still ungrammatical. The next Spec position is in Spec-CP, so the wh-phrase moves there and the sentence is grammatical. Moving the wh-phrase violates *STAY* twice but it satisfies the higher-ranked constraint *ALIGN-FOCUS*. The following tableau shows this with the introduction of the new constraint *ALIGN-FOCUS*:

	ALIGN-FOCUS	FULL-INT	STAY	OP-SPEC
☞ a. [_{CP} what _j that [_{IP} t _j ' [_{VP} happened t _j]]]			**	
b. [_{CP} that [_{IP} [_{VP} happened what]]]	*!			*
c. [_{CP} that [_{IP} what _j [_{VP} happened t _j]]]	*!		*	

Table 4. The introduction of the constraint *Align-Focus*.

The optimal form (a) violates *STAY* twice, by moving *ʔeh* from its argument position to Spec-IP then Spec-CP in a cyclic movement. Candidate (b) violates *ALIGN-FOCUS* fatally, rendering the sentence ungrammatical, in addition to a violation of *OP-SPEC*. In candidate (c), even with the satisfaction of *OP-SPEC* (the operator is in Spec-IP) the sentence is still ungrammatical because the wh-phrase did not reach its appropriate landing site.

Another constraint of the *ALIGN-FOCUS* family I introduce is *ALIGN-FOCUS (WH)*, which accommodates for wh-phrases moving to the Spec-CP

⁵ The new constraint's relationship with *FULL-INT* is still undetermined; it can be higher in the hierarchy, or they can share the same important status. This is not uncommon in OT analysis, where two constraints are not in a strict dominance relation.

position in languages that have no obligatory movement of these wh-phrases otherwise:

ALIGN-FOCUS (WH): focused wh-phrases move to the Specifier position of CP.

This new constraint is violated by focused wh-phrases that are not found in Spec-CP. The input must include the Focus property of the wh-phrase as in the following input for example (19):

input (19): happen (x), x = what (Focused); Tense = past; Comp = that.

CA, as a rule, does not have obligatory wh-movement to Spec-CP. That is the reason behind ranking OP-SPEC low in the hierarchy. To account for this optional movement is the point of this work. Pseudo-optionality in the case of the presence of *ʔilli* (that) is explained using the information found in the input. If the Comp is found in the input, it is found in the output. The other kind of optionality that could not be explained by different inputs is one where both the candidates share the exact same input, but differ in the placement of one element i.e. the wh-phrase.

Choosing the discourse-related constraint ALIGN-FOCUS (and ALIGN-FOCUS (WH), which is the one used in the analysis henceforth) is logical in a sense that since both candidates share the same input and every element in this input contains the same characteristics of the words represented in it, then the only way for their placements to differ is discourse-related. The speaker chooses which word to focus on (in this case a wh-phrase).

An example of an adjunct wh-phrase is the following; with adjunct wh-phrases, the presence of *ʔilli* ('that') is prohibited and optionality persists:

- (22) ʔel-kalam-dah ʔasal ʔezzay?
 the-thing-this happened how?
 “How did this thing happen?”
 input: happen = x; x = this thing; Adverb = how; Tense = past.

	FULL-INT	STAY	OP-SPEC
☞ a. [CP Q [IP this thing [VP happened how]]]			*
b. [CP how _j [IP this thing [VP happened t _j]]]	*!	*	
c. [CP that [IP this thing [VP happened how]]]	*!		*

Table 5. The competition for example (22).

Candidate (a) is the optimal form even though it violates the low-ranked constraint OP-SPEC, but since it is a low-ranked constraint; its violation does not harm the winner. Candidate (b) has the wh-phrase in Spec-CP when it is not specified in the input that it is focused which violates FULL-INT. The candidate also violates STAY as well. Candidate (c) violates FULL-INT but for a different reason: it contains the complementizer *that* when it is not mentioned in the Input.

- (23) ʔezzay el-kalam-dah ʔasal?
 How the-thing-this happened?
 How did this thing happen?
 input: happen = x; x = this thing; Adverb = how (focused);
 Tense = past.

	ALIGN-FOCUS (WH)	FULL-INT	STAY	OP-SPEC
☞ a. [CP how _j Q [IP this thing [VP happened t _j]]]			*	
b. [CP Q [IP this thing [VP happened how]]]	*!	*		
c. [CP how _j that [IP this thing [VP happened t _j]]]		*!		

Table 6. The competition for example (23).

Candidate (a) is the winner even with the violation of STAY. Candidate (b) fails to satisfy the higher-ranked constraint ALIGN-FOCUS (WH) in not having the wh-phrase in Spec-CP. It also fails to fully interpret the elements of the input; the wh-phrase is focused in the input which should be present in the output, hence the violation of FULL-INT. Candidate (c) satisfies the higher-ranked constraint, but it has an extra element that is not present in the input, i.e. the Comp *that*, which violates FULL-INT fatally.

7.2. Embedded wh-questions

The following examples exhibit a case of pseudo-optionality, in the sense of Müller (2001), where what looks like the same elements coming from the same input are in fact from different inputs. These winners don't belong to the same input:

- (24) ?ana ?arfa ?el-nas-di ?amal-o keda leh.
 I know the-people-this did-they this why.
 “I know why these people did this.”
 input: know (x, y), x = I, y = CP; Tense = present; did (x, y), x = they, y = this; Adv = *leh*; Tense = past; Scope = narrow.

	PARSE-SCOPE	PARSE-WH	FULL-INT	STAY	OP-SPEC
☞ a. [_{IP} I [_{VP} know [_{CP} Q [_{IP} the-people-this [_{VP} did-they this why]]]]]]		*			*
b. [_{CP} Q [_{IP} I [_{VP} know [_{CP} [_{IP} the-people-this [_{VP} did-they this why]]]]]]	*!				*
c. [_{IP} I [_{VP} know [_{CP} why _j Q [_{IP} the-people-this [_{VP} did-they this t _j]]]]]]			*!	*	

Table 7. The competition for example (24).

Candidate (a) is the winner of this competition; it violates the constraints PARSE-WH by not interpreting the sentence as a matrix question, and OP-

SPEC with the wh-phrase remaining in-situ. Candidate (b) violates the high-ranking constraint PARSE-SCOPE by interpreting the sentence as a matrix question, it also violates OP-SPEC. In candidate (c), the wh-phrase is found in Spec-CP of the lower clause, and it does not violate the high-ranking constraint PARSE-SCOPE, however, it violates the constraint FULL-INT fatally by not adhering to the Input’s properties of the wh-phrase *leh* (why): in this example it is not focused, hence the violation of FULL-INT and the subsequent violation of STAY. The wh-phrase need not move from its base position.

Candidate (c), of the above example, has a different constraint profile. The constraint ALIGN-FOCUS (WH) is added into the competition to settle it as the winner. Candidate (c) is repeated as the following example (25):

- (25) *ʔana ʕarfa leh ʔel-nas-di ʕamal-o keda.*
 I know why the-people-this did-they this.
 “I know why these people did this.”
 input: know (x, y), x = I, y = CP; Tense = present; did (x, y),
 x = they, y = this; Adv = why (Focused); Tense = past; Scope = narrow.

	PARSE-SCOPE	ALIGN-FOCUS (WH)	PARSE-WH	FULL-INT	STAY	OP-SPEC
a. [_{IP} I [_{VP} know [_{CP} why _j Q [_{IP} the-people-this [_{VP} did-they this t _j]]]]]			*		*	
b. [_{CP} Q [_{IP} I [_{VP} know [_{CP} why _j [_{IP} the-people-this [_{VP} did-they this t _j]]]]]]	*!					
c. [_{IP} I [_{VP} know [_{CP} Q [_{IP} the-people-this [_{VP} did-they this why]]]]]]		*!		*		*

Table 9. The competition for example (25)

Candidate (a) is the optimal form in this competition; it violates PARSE-WH and STAY, but the higher-ranked constraints are satisfied. Candidate (b)

loses because it violates the high-ranked constraint PARSE-SCOPE by interpreting the sentence as a question. Candidate (c) incurs the most violations: it violates ALIGN-FOCUS (WH) by not moving the focused wh-phrase to Spec-CP, it also violates FULL-INT for the same reason (the properties of the wh-phrase in the input were not present in the output), and it violates the constraint OP-SPEC.

The main difference between examples (24) and (25) is the fact that the wh-phrase is focused in example (25) which prompts it to move to Spec-CP. These two examples will not compete with each other, for they have different inputs; they are the winners of their separate competitions. This is a case of pseudo-optionality, where the properties of the elements in the input play a significant role in choosing which candidates are to compete in a single competition and the constraints profile used.

8. Conclusion

The Minimalist account best explains this optionality phenomenon in Cairene Arabic in a purely syntactic analysis. The uninterpretable wh-feature carried by the Q operator is checked by the wh-phrase in its base position (in-situ) or in Spec-CP. The optionality phenomenon is found in both matrix and embedded questions and with argument and adjunct wh-phrases alike. Optionality in Iraqi Arabic and Hindi can be explained in the same way.

An Optimality-theoretic account of this optionality relies on the discourse-related constraint ALIGN-FOCUS, from which another constraint is introduced to account for the +WH element found in Spec-CP. This constraint is ALIGN-FOCUS (WH); it is added to the hierarchy to help choose the optimal form. This is a drawback in the theory, for it includes Focus, which falls under individual discretion rather than standard syntactic rules. Optionality in French can thus be analyzed the same way as in CA. Iraqi Arabic has proven to be difficult to analyze in an Optimality-theoretic approach, so further research is necessary.

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