

# Production of Adjunct Wh-Questions in Egyptian Arabic Monolingual and Egyptian Arabic-English Bilingual Children

Riham Hafez Mohamed<sup>1\*</sup>

<sup>1</sup>PhD Candidate, Hispanic Studies (Linguistics), Department of Languages & Cultures, Western University, Ontario, Canada

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\*Corresponding author: Riham Hafez Mohamed

PhD Candidate, Hispanic Studies (Linguistics), Department of Languages & Cultures, Western University, Ontario, Canada

## Abstract

This pilot study examines the production of Egyptian Arabic (henceforth EA) adjunct wh-questions (e.g., when) among two EA-English bilingual Children living in Ontario, Canada and an EA monolingual child living in Cairo, Egypt. The control group consists of two first-generation adult Egyptian immigrants in Ontario, Canada. The focus of the study is on the position of wh-phrases in EA wh-adjuncts, which exhibits a surface overlap between English and EA. In typical English wh-adjuncts, and wh-arguments as well, leaving the wh-phrase where it was originally generated (wh-in-situ) is ungrammatical and the wh-phrase must occur clause-initially (fronted wh-phrase) (Radford, 2004). In EA wh-adjuncts, there are two possible positions of the wh-phrase, fronted wh-phrase and wh-in-situ (Wahba, 1984). Findings from an oral elicited production task showed that the EA monolingual child significantly preferred wh-in-situ (94.4% of the time), and a fronted wh-phrase occurred only once in his responses. In contrast, the EA-English bilingual children predominantly preferred fronting the wh-phrase (97.3% of the time). As the fronted wh-question is the only grammatical option in typical English wh-questions, this result may indicate a possible crosslinguistic influence from English, the majority language of the bilinguals' society, into EA. Regarding the adult controls, they showed true optionality as they produced roughly around the same amount of the fronted wh-phrase and wh-in-situ, 52.8% and 47.2% respectively. The results are discussed in relation to the crosslinguistic influence hypothesis of Müller and Hulk (2001) and the developmental trajectory proposed by Shin & Miller (2021).

**Keywords:** Child bilingualism, Egyptian Arabic, English, adjunct wh-questions, fronted wh-phrases, wh-in-situ. Child heritage speakers, acquisition of morphosyntactic variation, crosslinguistic influence.

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## 1. INTRODUCTION

This pilot study examines the production of Egyptian Arabic (henceforth EA) adjunct wh-questions (e.g., when) among two EA-English bilingual children living in Ontario, Canada and an EA monolingual child living in Cairo, Egypt<sup>1</sup>. The control group consists of two first-generation adult Egyptian immigrants in Ontario, Canada. The focus of the study is on the position of wh-phrases in wh-adjuncts, which exhibit a surface overlap between English and EA. In typical English wh-adjuncts, leaving the wh-phrase where it was originally generated (also called wh-in-situ) is ungrammatical and the wh-phrase must occur clause-initially (fronted wh-phrase) (Radford, 2004), as illustrated in (1).

(1) Where did Ahmed put my glasses?

In EA, there are two possible positions of the wh-adjuncts, wh-in-situ and fronted wh-phrase (Wahba,

1984), as shown in (2a) and (2b) respectively<sup>ii,iii</sup>. So far, no pragmatic distinctions have been found in the literature.

(2) a. Ahmed hat naḡarty feen?  
 Ahmed put.3SGM glasses-my where  
 'Where did Ahmed put my glasses?'

b. Feen Ahmed hat naḡarty feen?  
 ↑  
 Where Ahmed put.3SGM glasses-my

This study has two main objectives. Firstly, to explore how EA children acquire morphosyntactic variation in their native language. Secondly, to examine whether the production in the EA-English bilingual children differs from the production of the EA monolingual child due to possible interaction between the bilinguals' two languages.

The first goal of this paper is to examine children's acquisition of morphosyntactic variation. To achieve this goal, I draw on the four-step developmental trajectory proposed by Shin & Miller (2021). According to Shin & Miller's model, children go through four developmental steps to acquire variable grammatical patterns, "(1) learn the two forms sequentially; (2) use both forms, but without any true variation at all; (3) vary between forms, but in limited contexts, particularly contexts that provide abundant evidence of variation in the input; and finally (4) extend variation to more contexts" (Shin & Miller, 2021, p. 2).

In the present case we examine morphosyntactic variation between moving a wh-phrase or leaving it in situ. A great deal of previous work has focused on French, the grammar of which includes this type of variation. In French, there are three possible positions for the wh-phrase: fronted wh-phrase with subject-verb (S-V) inversion; fronted wh-phrase without S-V inversion; or wh-in-situ. Following Shin & Miller's (2021) model, it is expected that children begin with a stage where they either always move the wh-phrase or always leave it in situ. Research has found a tendency in children to start with leaving the phrase in situ rather than fronting it, which can be explained if, following Guasti (2016), we assume "children avoid movement in syntax, of the wh-word or of the verb, if this is an option in their language" (Guasti, 2016, p.250). Evidence for this position can be found in Hamann (2006) who studied the early production of wh-questions in three typically developing French children (average age 2;3) and eleven French children with specific language impairments (average age 6;7). Hamann examined which option the French children would prefer of the three available grammatical options in their native language, fronted wh-phrase with S-V inversion, fronted wh-phrase without S-V inversion or wh-in-situ. The findings showed that all the participants markedly avoided the movement of the wh-phrase or the verb and preferred wh-in-situ.

The second goal of this paper is to examine whether there is a possible interaction between the bilinguals' two languages. In fact, language differentiation in bilingual children has been thoroughly studied by language acquisition scholars, who investigate whether children who acquire two languages early in their childhood start with one or two linguistic systems. For many years, it was believed that bilinguals begin with a transitional stage where only one linguistic system is available to them (Volterra & Taeschner, 1978). However, many scholars criticized this view, suggesting that bilingual children have two separate linguistic systems (De Houwer, 1990, Paradis and Genesee, 1996; Döpke, 1998; Müller 1998; Müller and Hulk, 2001, among others). Nonetheless, some of these scholars believed that the two linguistic systems develop autonomously without or with little interaction (De Houwer, 1990, Paradis and Genesee, 1996), while

others argued that the two linguistic systems have a crosslinguistic influence on each other (Döpke, 1998; Müller 1998; Müller and Hulk, 2001; Silva-Corvalán, 2014).

More recent research has focused on examining the conditions that allow crosslinguistic influence to occur between the two languages in bilingual children. Müller and Hulk's (2001) hypothesis is one of the most influential in this regard. It draws on the important role of the grammatical structure in determining whether there is crosslinguistic influence between the two linguistic systems as well as in predicting the direction of influence. According to Müller and Hulk (2001), the most vulnerable grammatical structures for crosslinguistic influence are those that satisfy the following conditions: a) they involve a syntax-pragmatic interface and b) they exhibit a surface overlap between the two languages. In the words of Müller and Hulk, "Crosslinguistic influence occurs once a syntactic construction in language A allows for more than one grammatical analysis from the perspective of child grammar and language B contains positive evidence for one of these possible analyses" (Müller and Hulk, 2001, p. 1). According to this hypothesis, if both conditions are met, the direction of the influence is expected to be from language B into language A because language B provides the bilingual children with strong positive evidence of one of the grammatical analyses available in language A.

Even though Müller and Hulk's (2001) hypothesis considered the syntax-pragmatics interface as a condition for crosslinguistic influence, there are cases where crosslinguistic influence can also occur in structures relevant to narrow syntax, provided that there is an overlap between the two languages for these structures. Evidence for this tendency came from several empirical studies that examined purely syntactic domains that have a surface overlap between the two languages of the bilinguals (Albirini *et al.*, 2011; Montrul *et al.*, 2015; Cuza, 2013, 2016). For example, the studies of Albirini *et al.*, (2011) and Montrul *et al.*, (2015) showed that if one of the early bilinguals' languages exhibits flexible word order (language A) while the other has rigid word order (language B), the bilinguals tend to prefer the option that is available in language B, as long as language B is their dominant language. Albirini *et al* (2011) examined word order in declarative sentences in Egyptian and Palestinian adult early bilinguals residing in the United States. Although Arabic allows S-V and V-S word orders in declarative sentences, the findings showed that the EA participants significantly preferred rigid S-V-O word order, which is the grammatical word order in English. Similarly, Montrul *et al.*, (2015) found that Spanish and Romanian adult early bilinguals, residing in the United States, had difficulty comprehending sentences with V-S-O order, although both Spanish and Romanian allow V-S and S-V word orders.

Although there is a rich body of literature on the acquisition of morphosyntactic variation (Shin & Miller, 2021; Grinstead, 2004; Newkirk-Turner & Green, 2016) and crosslinguistic influence (Döpke, 1998; Müller 1998; Müller and Hulk, 2001; Silva-Corvalán, 2014), no study to date has investigated these research areas in EA wh-questions. Therefore, the current study aims to contribute to the growing body of research about children's acquisition of variation and the possibility of crosslinguistic influence in narrow syntax by investigating the production of EA adjunct wh-questions. The two experimental groups in this study are EA-English bilingual children living in Ontario, Canada and an EA monolingual child living in Cairo, Egypt.

The bilingual children who participated in this study are also considered part of a specific type of early bilingual speakers known as child heritage speakers (child HSs). In this study, I adopt Kupisch and Rothman's (2018) definition of a heritage speaker (HS), "An HS is a native-speaker bilingual of a minority language spoken at home and either also a native speaker (in the case of 2L1) or a child L2 learner of the majority language of the society in which she/he lives and is educated. Under either scenario, it is virtually inevitable that the HS will wind up being dominant in the societal majority language." (Kupisch & Rothman, 2018, p. 567). Kupisch & Rothman's definition was adopted in my study for the following reasons: First, it explicitly describes HSs as native speakers of their native minority language, which is also referred to as the heritage language (HL); second, this definition clarifies that HSs almost always become dominant in the majority language (ML) of their society; third, this definition avoids considering HSs as receptive bilinguals, admitting in this way that the proficiency of HSs in their HL spans a broad spectrum, from merely receptive ability to full productive ability and even to monolingual-like command of the language in some cases (e.g., Alarcón, 2011; Polinsky, 2008, among others).

The current study is guided by the following research questions:

1. Will the EA monolingual child prefer producing wh-adjuncts with wh-in-situ, given the previous studies from other languages that suggest that children avoid movement in syntax?
2. Will the EA-English bilingual children prefer producing wh-adjuncts with fronted wh-phrase, possibly due to cross-linguistic influence from English into their HL?
3. Will the adults show true optionality between the wh-in-situ and the fronted wh-questions?

Based on Hamann's (2006) findings, it was hypothesized that the child in Egypt would greatly prefer wh-in-situ over fronted wh-phrases. Based on the results of Albirini *et al* (2011) and Montrul *et al* (2015),

it was predicted that bilingual children would opt to use the fronted wh-phrase because it is the only grammatical option in English typical wh-questions<sup>iv</sup>. Regarding the control group (the adult group), it was expected that they would show true optionality as there is no evidence in the literature about EA adult grammars that adults prefer one position over the other or that the choice is somehow pragmatically determined.

The paper is organized in the following manner. Section 2 presents the types of wh-phrases and briefly analyzes the syntax of wh-questions in English and EA. Section 3 describes the methodology. Section 4 is dedicated to the results and discussion. Finally, section 5 concludes the paper with the outcomes of this study and possible future studies.

## 2. WH-QUESTIONS IN ENGLISH, AND EGYPTIAN ARABIC

Concerning the types of wh-questions, an essential distinction between argument and adjunct wh-questions (wh-argument and wh-adjunct) should be made. On the one hand, wh-arguments are the entities participating in the predicate relation, such as *?eh* 'what' in EA (as shown in example (3b) below), that is, these entities are required by the argument structure of the verb.

- (3) a. Ahmed *ištara* bait.  
Ahmed buy.3SGM house  
'Ahmed bought a house.'
- b. Ahmed *ištara* ?eh?  
Ahmed buy.3SGM what  
'What did Ahmed buy?'

On the other hand, wh-adjuncts do not obey any requirement of the verb. They are used to add information about time, place, reason, manner, etc. This study focuses only on three EA wh-adjuncts, *feen* 'where', *?imta* 'when', and *leeh* 'why'. In EA wh-adjuncts, there are two possible positions of the wh-phrase, fronted wh-phrase and wh-in-situ (Wahba, 1984). Example (4a) shows the position in which the EA adjunct wh-phrases are generated, and examples (4b) and (4c) illustrate their position as fronted wh-phrases and wh-in-situ respectively.

- (4) a. Ahmed *ištara* bait *embareh/ fi* Aswan.  
Ahmed buy.3SGM house yesterday/ in Aswan.  
'Ahmed bought a house yesterday/ in Aswan.'
- b. ?imta/ Feen Ahmed *ištara* bait?  
when/ where Ahmed buy.3SGM house  
'When/Where did Ahmed buy a house?'
- c. Ahmed *ištara* bait ?imta/ feen?  
Ahmed buy.3SGM house when/ where  
'When/Where did Ahmed buy a house?'

In both English typical wh-arguments and wh-adjuncts, the wh-phrase must move to the spec-CP (fronted wh-phrase) (Radford, 1997, p. 17), as shown in the examples in (5a) and (6a). Leaving the wh-phrase in the position in which it is generated (wh-in-situ), as shown in (5b) and (6b), is ungrammatical with both English wh-arguments and wh-adjuncts.

- (5) a. What did Ahmed buy?
- b. \*Did Ahmed buy what?
  
- (6) a. When did Ahmed buy the chocolate?
- b. \*Did James Ahmed the chocolate when?

The example in (5a) contains the verb *buy*, which is transitive, that is, it obligatorily carries a direct object argument. The direct object argument is realized in this example by the interrogative *what*, which is projected as a sister to the verb. It is assumed that the wh-phrase moves to initial position of the clause (to the spec-CP) due to the interrogative features of the complementizer (C), leaving behind a copy that remains unpronounced. This is indicated by crossing the copy out in the syntactic representation in (7). A similar analysis applies to the adjunct clauses.

(7) What did Ahmed buy ~~what~~?

In comparison, fronted wh-phrase, as in (8a), is ungrammatical in EA wh-arguments with *?eh* ‘what’. The grammatical option, in this case, is leaving the wh-in-situ (Lassadi, 2003), as shown in (8b).

- (8) a. \*?eh Moħamed ištara ?eh?  
What Mohamed bought.3SGM  
‘What did Mohamed buy?’
- b. Moħamed ištara ?eh?

Mohamed bought.3SGM what

Example (8a) is ungrammatical due to using fronted wh-phrase in wh-arguments. However, fronted wh-phrases can be grammatical in wh-arguments if the following two conditions are met: a) the argument wh-phrase is immediately followed by the complementizer *illi*, b) a resumptive pronoun that agrees with the wh-phrase in number and gender is inserted in the wh-phrase’s extraction site (Wahba, 1984, p. 20). Example (9) illustrates using fronted wh-phrase with the resumptive pronoun *-h* (in the extraction site of the argument wh-word *?eh*), and the complementizer *illi*.

- (9) ?eh illi Moħamed ištara-h?  
What that Mohamed bought.3SGM-it  
‘What did Mohamed buy?’

With respect to EA wh-adjuncts, both fronted wh-phrases and wh-in-situ are grammatically correct (Wahba 1984) as shown in (10a) and (10b).

- (10) a. ?imta Moħamed ?ištara ?il-šoçolata ?imta?  
  
When Mohamed bought.3SGM the-chocolate  
‘When did Mohamed buy the chocolate?’
- b. Moħamed ?ištara ?il-šoçolata ?imta?  
Mohamed bought.3SGM the-chocolate when

In sum, the position of wh-phrases contrasts between English and EA in wh-arguments but overlaps in wh-adjuncts. As table 1 shows, the wh-movement is obligatory in English wh-arguments but ungrammatical in EA wh-arguments. In wh-adjuncts, EA allows two options, moving the wh-phrase or leaving it in situ while English allows only one of these options, wh-movement.

**Table 1: Wh-movement in English, and Egyptian Arabic main-clause wh-questions**

	Wh-movement in wh-argument	Wh-movement in wh-adjunct
<b>English</b>	Obligatory wh-movement	Obligatory wh-movement
<b>Egyptian Arabic</b>	no wh-movement (obligatory wh-in-situ instead)	Optional wh-movement

### 3. METHODOLOGY

#### 3.1. Participants

Three children and two adults took part in this study. As for the adult participants, they were two female native speakers of EA (age 39 and 47). They were from the first-generation of Egyptian immigrants in Canada. They arrived in Ontario, Canada after the age of 25 and lived there for at least two years. As for the three child participants (age 6), two of them were female EA-English bilinguals living in Ontario, Canada. The third child was an EA monolingual male living in Cairo, Egypt. The parents of all the five participants, adults and children, were native speakers

of EA. All the participants in this study had no language, hearing or learning impairments.

With respect to the two bilingual children, they were kindergarten students at the time of this study. Both participants were born and raised in Egypt until the age of 4;3 and 4;4. Then, they immigrated with their families to Ontario, Canada. Their mean length of residence in Canada at the time of testing was two years. Regarding the patterns of language exposure and use, the children were exposed to EA within their household and at social gatherings such as religious celebrations with their Arab neighbours and community. These children used both English and EA



to communicate with their parents while they preferred to speak English with their siblings and friends, even with their Arab friends. The children's parents reported that their children mainly used EA to communicate with their relatives back in Egypt, over the phone. At the public schools that these children attended, English was the language of instruction. Therefore, they only spoke English at school, for the entire duration of the school day, 7.5 hours.

Regarding the child in Egypt, he was also a kindergarten student at the time of testing. He was born and raised in Cairo, Egypt. EA was the only language that the child was exposed to from birth until he attended school, at the age of 4;6. Although both EA and English were the languages of instruction in the school that the child was attending, his parents reported that the child used only EA to communicate with his family and friends. His use of English was limited at school, and he felt more comfortable speaking in EA. Moreover, French was one of the subjects that the child studied at school, but his parents reported that his proficiency in French was very low.

### 3.2. Procedure and tasks

The experiment was carried out with the approval of the Western Research Ethics Board in Canada. Informed consent was obtained from the adult participants and the parents/guardians of the children prior to participating in this study. After signing the consent form, they completed a 10-minute language background questionnaire. The adult participants filled the questionnaire for themselves, and the parent/guardian of the children filled the questionnaire on behalf of their children. This questionnaire included questions about the language background of the participants such as the age of onset of bilingualism, the order of acquisition of each language, the language of instruction, and length of residence in Canada (if applicable).

After filling out the questionnaire, the participants completed the main task, which was an elicited production task. This task took approximately 30 minutes, and it was conducted entirely in EA. It aimed to elicit responses that contained three EA wh-adjuncts, *feen* 'where', *leeh* 'why', and *?imta* 'when'. The task consisted of 18 scenarios which were distributed as follows; 7 scenarios for *feen*, 6 for *leeh*, and 5 for *?imta*. At the beginning of the task, the

participants were introduced to two puppets, a doll and a teddy bear. The participants were told that these puppets were learning to speak EA and they needed the participant's help to form questions in EA. Then, the researcher narrated the scenarios, one at a time, while moving the puppets to act out the scenario that she was narrating. By the end of each scenario, the researcher requested that the participant help the puppet to ask a question about the scenario. The following is an illustration of a scenario and its expected responses.

#### (11) The scenario:

The doll's mom told her that she bought movie tickets for her and her friends. The doll wants to know what time they are going to the movie. Help the doll ask.

#### The expected responses:

- a. *?imta hanrooh ?il-cenima?*  
When FUT-go.1PL the-movie theatre  
'When will we go to the movie theatre?'
- b. *Hanrooh ?il-cenima ?imta?*  
FUT-go.1PL the-movie theatre when

The aim of this scenario was to elicit a response that contained the EA wh-adjunct *?imta* 'when'. As the movement of the wh-phrase in EA wh-adjuncts is optional, the participants were expected to respond with one of the two grammatical options, a fronted wh-phrase (11a) or a wh-in-situ (11b).

### 3.3. Data collection and analysis

The elicited production task was audio-recorded for all five participants. Each utterance was then transcribed and coded according to two variables, group (EA-English bilingual children, EA monolingual child, and adult controls), and the position of the wh-phrase (fronted wh-phrase and wh-in-situ). For each group, the percentage of fronted wh-phrase and wh-in-situ responses was calculated.

## 4. RESULTS AND DISCUSSION

The elicited production task consisted of 18 scenarios acted in front of the participants to elicit responses that contained three EA wh-adjuncts, *feen* 'where', *leeh* 'why', and *?imta* 'when'. Table 2 shows the distribution of fronted wh-phrases and wh-in-situ in the two experimental groups and the control group.

**Table 2: Elicited Production Task. The overall distribution of fronted wh-phrase and wh-in-situ (in percentage and absolute numbers) within the groups**

Group	Fronted wh-phrases	Wh-in-situ
EA-English bilingual children	97.3% (36/37)	2.7% (1/37)
EA monolingual child	5.6% (1/18)	94.4% (17/18)
First-generation EA immigrants	52.8% (19/36)	47.2% (17/36)

As expected, the EA monolingual child avoided movement in syntax. The results showed that

he produced wh-in-situ 94.4% of the time. This finding aligns with previous research (Hamann, 2006; Soares,

2003) that found that children tend to not move the wh-word and the verb if their language has this option. As table 2 shows, the EA monolingual child in Egypt left the wh-phrase in situ in 17 out of the 18 wh-questions. The only case where he chose to use the fronted wh-phrase is shown in (12):

**(12) The scenario:**

The doll couldn't find her mom's glasses. Help the doll ask her dad about the place of the glasses.

**The response of the child control:**

Feen ya baba naḡaret mama ya baba?  
Where dad glasses mom dad  
'Where are mom's glasses, dad?'

With respect to adult controls, they used both fronted wh-phrases and wh-in-situ without showing any preference for a particular one. They fronted the wh-adjuncts 52.8% (19/36 responses) of the time and used wh-in-situ 47.2% (17/36 responses) of the time.

Regarding the EA-English bilingual children, one of them produced the fronted wh-phrase 100% of the time (18/18 responses). The other bilingual produced also fronted wh-phrases for all the 18 stimuli, but she added an additional copy of the wh-phrase in its extraction site in one of her responses. This instance is illustrated in (13):

**(13) The scenario:**

The doll's sister ruined her drawing, and the doll is very upset. The doll wants to know the reason her sister did that. Help her ask.

**The bilingual's response:**

Leeh ʔinti ʔataʕti ʔil-sora ʔilli ʔna wi  
Why you.F cut.2SGF the-picture COMP I and  
saḡbet-i kont baʕmel-haa maʕ saḡbit-i leeh?  
friend-my was.1SG doing-it with friend-my why  
'Why did you cut the picture which my friend and I  
were colouring?'

As example (13) presents, this bilingual child produced the wh-phrase *leeh* 'why' two times in the same question, once as a fronted wh-phrase and once as a wh-in-situ. This example shows that this bilingual participant was aware of the existence of both positions in her native language.

There was another instance where the same bilingual child who produced question (13) used both fronted wh-phrase and wh-in-situ to respond to one of the stimuli. However, this occurrence of the wh-in-situ has not been considered in the overall distribution of utterances because it occurred in an embedded question, a research area beyond the scope of this study. Example (14) shows this case.

**(14) The scenario:**

The doll could not find her phone and she has been looking for it for a long time. Help the doll ask the teddy bear about the place of her phone.

**The bilingual's response:**

Feen ʔil-mobile bitaʕi? ʔna miʕ ʕarfa howa feen.  
Where the-phone mine? I not know.1SG it where.  
'Where is my phone? I do not know where it is.'

In example (14), this child asked a simple question with fronting the wh-phrase *feen* 'where'. Then, she followed her question with an embedded question that contained the same wh-phrase in-situ. 'ʔna miʕ ʕarfa howa *feen*.' (I not know.1SG it where, 'I do not know where it is'). Interestingly, the child was aware that the fronted wh-phrase was ungrammatical in the embedded question that she produced, '\*ʔna miʕ ʕarfa *feen* howa.' (I not know.1SG where it, 'I do not know where it is'). This example shows that when the bilingual's preference contradicted the grammaticality of the question formation, she correctly used the only grammatical way to form this EA embedded question. This response indicates that this bilingual child acquired when the variation is prohibited and when it is allowed in EA wh-questions.

The results show that all the child participants are still in the first step of the developmental trajectory of Shin & Miller (2021). To clarify, all the child participants almost always preferred one of the variable patterns available in their native language. Nonetheless, they differed in the option that they chose, wh-in-situ for the EA monolingual in Egypt (17/18 responses) and fronted wh-phrase for the EA-English bilinguals in Canada (18/18 responses for one the bilinguals and 18/19 for the other). This difference between the two groups may be due to several environmental factors derived from residence outside the homeland, Egypt. The main environmental factor is that English is widely used in the community, and it is the language of instruction in the schools in Ontario, Canada. In contrast, the bilingual children use EA in restricted contexts, such as to interact with their immediate family. This unbalanced exposure between English and EA can explain why the bilingual children preferred fronted wh-phrases, which is the only grammatical option in English typical wh-questions.

The findings of this study also align with the growing body of literature that suggests that crosslinguistic influence can also occur in purely syntactic domains, not only in domains that involve a syntax-pragmatics interface (Albirini *et al.*, 2011; Montrul *et al.*, 2015; Cuza, 2013, 2016). To clarify, the position of wh-phrases in EA wh-adjuncts does not exhibit syntax-pragmatics interface. Yet, when the EA input provides the bilingual children with two options and the English input provides them with positive evidence for one of these options, they preferred to

produce the option that overlaps between English and EA, namely a fronted wh-phrase. This result can be a possible indication of crosslinguistic influence from English into EA. However, it should be interpreted with caution because this study was a pilot study with only five participants. Therefore, more research with a larger sample is needed to attest these findings.

In sum, the child in Egypt predominantly preferred the wh-in-situ while the bilingual children preferred the fronted wh-phrases. The adult control supports showed true optionality between wh-in-situ and fronted wh-phrase.

## 5. CONCLUSION AND FUTURE WORK

To conclude, this paper examined the position of wh-phrases in EA wh-adjuncts (e.g., when and why) in the production of EA-English bilingual children living in Ontario, Canada and an EA monolingual child living in Cairo, Egypt. The control group consists of two first-generation adult Egyptian immigrants in Ontario, Canada. This study has two main objectives. Firstly, to explore how EA children acquire morphosyntactic variation in their native language. Secondly, to examine whether the production in EA-English bilingual children would differ from that production of the EA monolingual child due to possible interaction between their two languages.

This study was driven by three research questions, 1) whether the EA monolingual child in Egypt would prefer the wh-in-situ; 2) whether the bilingual children in Canada would prefer the fronted wh-phrase, and 3) whether the adult controls would show true optionality. To answer these research questions, an elicited production task was conducted. In this task, two puppets acted 18 scenarios in front of the participants. Then, the participants were requested to help one of the puppets to form a question about each scenario. The scenarios were designed to elicit responses that contained three wh-adjuncts, *feen* 'where', *leeh* 'why', and *?imta* 'when'. The analysis focused on the position of the wh-adjuncts.

The findings showed that the EA monolingual child significantly preferred wh-in-situ (94.4% of the time). In contrast, the EA-English bilingual children predominantly preferred fronting the wh-phrase (97.3% of the time). As the fronted wh-question is the only grammatical option in typical English wh-question, this result may indicate a possible crosslinguistic influence from English into EA. Regarding the adult controls, they showed true optionality as they produced roughly around the same amount of the fronted wh-phrase and wh-in-situ, 52.8% and 47.2% respectively. The results are discussed in light of the crosslinguistic influence hypothesis of Müller and Hulk (2001) and the developmental trajectory proposed by Shin & Miller (2021).

In this study, the effect of social factors such as age and gender were not considered. Therefore, the current study can be replicated by recruiting an equal number of male and female EA participants, monolinguals and early bilinguals, from different age groups. This potential study can help us better understand whether there is an interaction between developmental age, gender, and crosslinguistic influence. Another potential study can focus on examining the development of EA adjunct wh-questions in EA-English bilingual children (future HSs) and adult heritage speakers of EA (current HSs) living in English-speaking countries. Such comparison is essential to understand whether an aspect of grammar is fully acquired in childhood and then eroded in adulthood, or whether this aspect of grammar experiences different levels of attainment compared to monolingual children and adults. Finally, it will be important to establish whether crosslinguistic influence can lead to ungrammaticality in some cases. This can be done by comparing adjunct and argument wh-phrases. I would predict that ungrammaticality is not an option.

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## NOTES

<sup>i</sup> In order to distinguish between the two experimental groups in this paper, I will be referring to the child who participated from Egypt as the EA monolingual child, although I recognize that he had some knowledge in English. However, the child's parent reported that his use of English was very limited in school and that EA was his only language of communication with his family, friends, and community.

<sup>ii</sup> The following symbols are used to transcribe the Egyptian Arabic consonants. They are adopted from Bassiouney, R., & Benmamoun, E. (2018).

Symbol	Corresponding Arabic consonant	Articulation (voicing, place of articulation, and manner of articulation)
ʔ	أ	voiceless glottal stop
h	ح	voiceless pharyngeal fricative
ʃ	ش	voiceless alveopalatal fricative
ɖ	ض	emphatic voiced alveolar stop
ʕ	ع	voiced pharyngeal fricative
ʒ	ج	voiced alveopalatal fricative

<sup>iii</sup> The following abbreviations are used in the paper: 1, 2, 3 for first, second, and third person, respectively; SG = singular; PL = plural; M = masculine; F = feminine; FUT = future; COMP = complementizer.

<sup>iv</sup> There are some situations where wh-in-situ is grammatical in English, including echo questions and questions with more than one wh-element. However, these exceptions will not be discussed in the current study as they are beyond the current study's scope.