Morphological acquisition of verb agreement inflections in Egyptian children (3;0-6;0): a preliminary study

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Abstract

Background: This study investigates the morphological acquisition of agreement inflections of the imperfective and perfective verbs in typically developing Egyptian Arabic-speaking children between 3;0 and 6;0. It also tries to call attention to the inaccurate use of the terms 'present tense morpheme' and 'past tense morpheme', and the need for a change in terminology, which is not just simply a change, but will have potentially significant impact on the field of language development in Arabic, whether typical or atypical and its theories.

Method: Thirty children were recruited and divided into three age groups separated by one-year-interval. For the imperfective verbs, two syllabic structures were investigated ('CVC.CVC (Structure 1) and CV.'CVC$_a$C$_a$ (Structure 2)) and their corresponding perfective structures ('CV.CVC and CVC$_a$C$_a$ respectively). Five verbs were tested for each structure. An average of 90% correct usage of agreement inflections for each group was used as the threshold for mastery acquisition for the imperfective and perfective verbs, in the context of present and past tense respectively.

Findings: The results showed that children in Group I did not acquire to a mastery level any of the forms. Children in Group II acquired all forms except for Structure 2 for both the imperfective and perfective verbs, but with very small percentages below the acquisition threshold. Children in Group III acquired all forms to a mastery level.

Discussion: The results showed that the use of imperfective verbs instead of both structures of the perfective verbs was a predominant error type in the youngest group. This might be for a number of reasons. One of the reasons might be the difficulty of the metalinguistic concept of the perfective verb as children start acquiring what is "here and now" first. The results revealed that a default type error was the predominant error type used to substitute both the imperfective and perfective verbs, in the youngest group. Such default form is more likely an imperative-like error which was used as a means of reducing the morphological load of the imperfective agreement paradigm which is a more complex paradigm. Even in the case of the perfective, it is more likely that children were intending to use the imperfective as they might not have acquired the perfective yet and as above, the errors resembling the imperative resulted from simplifying the agreement prefix of the imperfective.

Keywords: morphological   acquisition,   verb   agreement   inflections, imperfective verbs, perfective verbs, tense, imperative-like error, default type error, Egyptian Arabic

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1. Introduction

Research has been scarce with regard to Semitic languages and in particular Arabic, which seriously reduces the possibility of acquisition norms to be drawn and assessments to be developed, in particular for assessing children who may have developmental language impairments. Thus, one of the aims of the current study is to contribute to the field of language acquisition of Egyptian Arabic by providing some developmental trajectory data of the morphological acquisition of agreement inflections in imperfective and perfective verbs in a group of typically developing Egyptian Arabic-speaking (EATD) children aged 3;0 to 6;0.

The second aim is to reveal the nature of the main error patterns produced by these children, i.e., whether these errors are imperatives or imperative-like errors.

The third aim is to draw attention to the terminology used by researchers on language acquisition on Arabic in general and on Egyptian Arabic (EA) in particular. The tendency to study the acquisition of 'present tense morpheme' and 'past tense morpheme', which implies the existence of both tense 'morphemes' in Arabic, is an inaccurate implication. This doesn't mean that EA doesn't have present or past tense on a syntactic level or context level. As a result of adopting such a terminology, the results of these studies become imprecise/confusing somehow. On the other hand, adopting the new terms will have its impact on theories of language acquisition in Arabic in TD and atypically developing children. This aim will be achieved through the literature review of some of the studies on Arabic verbs morphological acquisition.

This part reviews types of verbs, tense, agreement, imperatives and verb morphology acquisition in Arabic.

1.1. Types of verbs

In general, the verb paradigm in Arabic consists of a root, a vocalic pattern and one or more affixes carrying the inflectional agreement features of number, person and gender. Both the root and vocalic pattern form the verb stem (Benmamoun, 2000). The verbs with tri-consonantal roots are considered simple verbs as they do not include any additional consonants. Other types of roots fall outside the scope of this study.

Regardless of verb type, there are two morphological forms of verbs in Arabic: the perfective and the imperfective. Different types of agreement affixes are attached to the verb stem in the case of the perfectives and imperfectives (Benmamoun, 2000). More details on these two types are provided later on.

Three types of the imperfective syllabic structures of the tri-consonantal verb are pertinent to this study. These are the syllabic (phonological) structure [1]CVC.CVC (which will be referred to as Structure 1), the structure CV.[1]CVC$_a$C$_a$ (which will be referred to as Structure 2) and the structure [1]CVV.CVC (which will be referred to as Structure 3), while the corresponding structures of the perfective form for these structures are

[1]CV.CVC, CVC$_a$C$_a$ and [1]CV.CVC[2] respectively. More details will be given later on.

1.2.   Tense

There is an ongoing debate concerning the issue of the nature of tense and aspect in Arabic. According to Benmamoun (2000, p.24) "the perfective Arabic. A long debated and still unresolved issue within Arabic linguistics has revolved around the information (features) that these two forms carry. The specific question is whether, in addition to agreement, these two forms carry temporal and aspectual features."

There are several perspectives with respect to the morphological realisation of tense (past and present)[3] and aspect. The following section will review some of these perspectives with a focus on tense, as aspect falls outside the scope of this study.

Based on McCarthy's account (1979, 1981) of autosegmental nature of Arabic morphology, some linguists (e.g., Bahloul, 1994) assumed that the vocalic melody/pattern carries tense/aspect and voice information. This assumption was based on the fact that the vocalic melody/pattern is not the same for the imperfective and the perfective. For example, contrast the vocalic melody/pattern (in bold) of the perfective in /k**a**t**a**b/ '(he) wrote', and that of the imperfective in /j**a**kt**u**b/ '(he) writes' (/jiktib/ in EA). The two vocalic melodies are different.

On the other hand, Benmamoun (2000) assumed a different perspective. In his book, Benmamoun was investigating two dialects: Moroccan Arabic and EA, with a comparison to Standard Arabic, with a solid ground explanation regarding tense in EA whether morphologically or syntactically. This makes his study of more importance than other studies on Arabic. He assumed that the vocalic melody carries only voice information, while tense is not realised by 'an independent morpheme'.

Benmamoun's perspective was based on the assumption that the vocalic melody for active verbs is different from passive verbs. This is true in case of both the perfective and imperfective forms. Thus, Benmamoun agreed that the vocalic melody carries voice distinction, but to claim that it carries both tense and aspect information in addition to voice is still a matter of debate. According to Benmamoun, this is because tense is an inflectional category, but voice is a derivational category. Thus, it is very unlikely that they are expressed via the same vocalic melody. Benmamoun concluded that the vocalic melody does not play a role in tense and aspect realisation.

Some linguists might argue that agreement features also carry information about tense (see Mitchell and El-Hassan, 1994). However, according to Benmamoun, evidence from Standard Arabic (SA) falsifies

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[2]CVC could be also used as a perfective form in the case of Structure 3.
[3]Only the present tense and past tense will be discussed. The future is out of scope of this study.

such an argument. The negative 'laysa' which is limited to present tense sentences, carries the same agreement suffixes of the perfective which indicates that such suffixes only carry agreement information. Perfective verbs occur only in past tense contexts. Thus, the perfective form carries 'abstract' past tense features. The past tense is a phonologically 'null' realisation, i.e., it is not expressed by an 'overt' affix. Benmamoun supports this existence of the (abstract) past tense morpheme using evidence, such as, the blocking of movement of intervening morphologically independent heads and the occurrence of perfectives in a certain word order in idioms (for more details, refer to Benmamoun, 2000).

For the imperfective form, Benmamoun argues that the affixes of the imperfective verb carry only agreement features. The imperfective verb is assumed to be morphologically not specified for aspect or tense. This assumption is supported with the fact that the imperfective form occurs in many contexts, such as the context of present tense (/jiktib/ '(he) writes/is writing'), future tense (/ħajiktib/'(he) will write'), past tense (/kaːn bijiktib/[4] '(he) was writing') and in non-finite clauses (/ʕaːwiz jiktib/ '(he) wants to write'). Thus, the imperfective does not carry aspectual or temporal features. The imperfective verb is a realisation of a non-finite verb/non-tensed verb form (Benmamoun, 1999 & 2000). On the other hand, present and past tenses are to be studied syntactically (for example, refer to Ouali, 2018).

There are many scholars that support the argument that present and past tenses are unmarked morphologically (for example, Aoun et al., 2010 and Oulai, 2018). There is no disagreement about the imperfective not marking tense (H. Oulai, personal communication, February 24, 2022), but regarding the perfective form, there is a different argument that considers that the perfective as the imperfective doesn't mark tense because it does not always occur in past tense contexts. It occurs also in other contexts (H. Oulai, personal communication, February 24, 2022). Oulai (2018) gives an example from Moroccan Arabic where the perfective occurs in present perfect context. Consequently, it is not marked for tense, since it occurs in different tenses.

It is out the scope of this research to prove which one of these arguments regarding the perfective is valid. For the purpose of this research, neither of the arguments will affect the results. One of the arguments of the perfective is that it marks tense but the past tense morpheme is an abstract morpheme, i.e., it is not realised phonologically. For the other argument, the perfective doesn't mark tense. In all cases, the imperfective will be the form that is not marked for tense. In this study, the theoretical framework of Benmamoun (2000) for tense is adopted where past tense is an abstract morpheme.

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[4]In EA, the progressive or habitual aspect is expressed by the use of the aspectual marker/morpheme /bi/ (Benmamoun, 2000). He refers to the imperfective verb without the aspectual marker as 'bare' form.

Consequently, the change of terminology will have an influential impact on the theories of language acquisition in both typical and atypical Arabic-speaking children.

A very recent study by Xu[5] (2022) on EA perfective and imperfective verbs but it is from a different angle. Xu argues that the formation/occurrence of the perfective form is derived from the imperfective (the input) by using statistical methods. This could be the cause for the more common occurrences of the imperfective than the perfective in the speech of young children as mentioned by (Aljenaie, 2010). Xu suggests that many studies on Arabic language acquisition are required. The application of Xu study was on a limited number of verbs (wazn I), then, it still needs validity. Also, such type of quantitative studies on Arabic are rare, and this paper is the first to investigate both paradigm structure and lexical representation, thus, further studies are still required.

1.3.   Agreement

Verbs are obligatorily inflected for agreement features. Agreement features include person (1st, 2nd & 3rd), number (singular & plural) and gender (masculine & feminine). In the case of the perfective, only one kind of affix (suffixes) is added which carries all agreement features, while in the imperfective, two kinds of affixes (prefixes and suffixes) are used (Benmamoun, 2000). For the imperfective, prefixes carry the person feature. Suffixes carry the number feature. On the other hand, gender is carried by the number feature if the latter is phonologically realised. If not, gender is realised through the person prefix. The only exception is the second person singular feminine, where it is realised by a suffix (Benmamoun, 2000) (see Tables 1-3 for agreement affixes of perfective and imperfective paradigms of Structures 1, 2 & 3 in EA). It is clear that Arabic has rich morphology which licences null subjects (e.g., Benmamoun,2000; Mahfoudhi & Abdalla, 2017).

Table 1

EA Perfective for the Verb 'write' (Structure 1) (based on Benmamoun (2000))

Person	Number	Gender	Affix	Verb+Affix	English Gloss
1	Singular	M/F	-t	/kaˡtabt/	(I) wrote
1	Plural	M/F	-na	/kaˡtabna/	(We) wrote

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[5]This study follows the theoretical framework of Benmamoun.

2	Singular	M	-t	/kaˡtabt/	(you) wrote
2	Singular	F	-ti	/kaˡtabti/	(you) wrote
2	Plural	M/F	-tu	/kaˡtabtu/	(You) wrote
3	Singular	M	-0	/ˡkatab/	(He) wrote
3	Singular	F	-it	/ˡkatabit/	(She) wrote
3	Plural	M/F	-u	/ˡkatabu/	(They) wrote

EA Imperfective for the Verb 'write' (Structure 1) (based on Benmamoun (2000))

Person	Number	Gender	Affix	Affix+Verb	English Gloss
1	Singular	M/F	ʔa-	/ˡʔaktib/	(I) write
1	Plural	M/F	ni-——-uª	/ˡniktib/	(We) write
2	Singular	M	ti-	/ˡtiktib/	(you) write
2	Singular	F	ti-——-i	/tikˡtibi/	(you) write
2	Plural	M/F	ti-——-u	/tikˡtibu/	(You) write
3	Singular	M	ji-	/ˡjiktib/	(He) writes
3	Singular	F	ti-	/ˡtiktib/	(She) writes
3	Plural	M/F	ji-——-u	/jikˡtibu/	(They) write

[a][u] was used in EA, but now it is dropped except for certain places in Alexandria where they still use it.

Table 2

EA Perfective for the Verb 'pull' (Structure 2)

Person	Number	Gender	Affix	Verb+Affix	English Gloss
1	Singular	M/F	-t	/çadˡdeːt/[a]	(I) pulled
1	Plural	M/F	-na	/çadˡdeːna/	(We) pulled
2	Singular	M	-t	/çadˡdeːt/	(You) pulled
2	Singular	F	-ti	/çadˡdeːti/	(You) pulled
2	Plural	M/F	-tu	/çadˡdeːtu/	(You) pulled
3	Singular	M	-0	/çadd/	(He) pulled
3	Singular	F	-it	/ˡçaddit/	(She) pulled
3	Plural	M/F	-u	/ˡçaddu/	(They) pulled

[a][eː] was added to break the consonant cluster to conform to the phonological rules in EA.

EA Imperfective for the Verb 'pull' (Structure 2)

Person	Number	Gender	Affix	Affix+Verb	English Gloss
1	Singular	M/F	ʔa-	/ʔaˡçidd/	(I) pull
1	Plural	M/F	ni—u[a]	/niˡçidd/	(We) pull

2	Singular	M	ti-	/ti¹çidd/	(You) pull
2	Singular	F	ti—i	/ti¹çiddi/	(You) pull
2	Plural	M/F	ti—u	/ti¹çiɨdu/	(You) pull
3	Singular	M	ji-	/ji¹çidd/	(He) pulls
3	Singular	F	ti-	/ti¹çidd/	(She) pulls
3	Plural	M/F	ji—u	/ji¹çiddu/	(They) pull

ᵃ[u] was used in EA, but now it is dropped except for certain places in Alexandria where they still use it.

Table 3

EA Perfective for the verb 'eat' (Structure 3)

Person	Number	Gender	Affix	Verb+Affix	English Gloss
1	Singular	M/F	-t	/ʔa¹kalt/	(I) ate
1	Plural	M/F	-na	/ʔa¹kalna/	(We) ate
2	Singular	M	-t	/ʔa¹kalt/	(you) ate
2	Singular	F	-ti	/ʔa¹kalti/	(you) ate
2	Plural	M/F	-tu	/ʔa¹kaltu/	(You) ate
3	Singular	M	-0	/¹ʔakal/	(He) ate
3	Singular	F	-it	/¹ʔakalit/	(She) ate
3	Plural	M/F	-u	/¹ʔakalu/	(They) ate

EA Imperfective for the Verb 'eat' (Structure 3)

Person	Number	Gender	Affix	Affix+Verb	English Gloss
1	Singular	M/F	ʔa-	/ˈʔaːkul/	(I) eat
1	Plural	M/F	ni-——-uª	/ˈnaːkul/	(We) eat
2	Singular	M	ti-	/ˈtaːkul/	(you) eat
2	Singular	F	ti-——-i	/ˈtakli/ᵇ	(you) eat
2	Plural	M/F	ti-——-u	/ˈtaklu/ᵇ	(You) eat
3	Singular	M	ji-	/ˈjaːkul/	(He) eats
3	Singular	F	ti-	/ˈtaːkul/	(She) eats
3	Plural	M/F	ji-——-u	/ˈjaklu/ᵇ	(They) eat

ª[u] was used in EA, but now it is dropped except for certain places in Alexandria where they still use it.

ᵇThe vowel in /kul/ is dropped when a vocalic suffix is added. This is usually done in the case of the imperfective of Structure3.

As Tables 1 to 3 show, there is no gender distinction for first person singular or plural, in the perfective or imperfective paradigm. Also, there is no gender distinction for the second- and third-person plural neither in the perfective nor in the imperfective paradigm. In EA, the masculine plural (originally derived from SA) is used for both masculine and feminine plural, unlike SA, where there is a gender distinction.

For the perfective paradigm, the first person singular and second person singular masculine are homophonous. Also, for the imperfective paradigm, the second person singular masculine and third person singular feminine are homophonous. The presence of contextual clues disambiguates the confusion. For the perfective, the agreement suffixes are added to the third person singular masculine perfective which doesn't have a suffix ('zero' suffix), such as /katab/ "(he) wrote" (Structure 1), /ʃadd/ "(he) pulled" (Structure 2) and /ʔakal/[6]

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[6]/kal/ could be also used as a perfective form for Structure 3.

"(he) ate" (Structure 3). For the imperfective, the agreement affixes are attached to */ktib/ (Structure 1), /çidd/ (Structure 2) and /kul/ (Structure 3), for example. It must be noted that */ktib/ by itself is not a phonological word in EA as it doesn't allow initial clusters (Harrell, 1957). On the other hand, /çidd/ and /kul/ by themselves are phonological words in EA which resemble the singular masculine imperative (for the imperatives, refer to section 1.3).

Tables 1 to 3 illustrated the fusional nature of agreement features in Arabic where more than one feature is expressed by the same affix. An example from the imperfective is expressing person and gender features by the same prefix in the case of third person feminine (/ti/). A more obvious example of this fusional nature is the perfective, where the suffixes carry all the agreement features. It was suggested by Peters (1995) that the acquisition of the fusional nature of inflections poses difficulties for child language acquisition.

1.4.   Imperatives

It is important to illustrate the imperative as it is relevant to the current study. According to Benmamoun (2000), (positive) imperatives do not carry an affix which marks person. They are derived from the imperfectives. These imperative paradigms in EA of Structures 1, 2 and 3 are presented in Table 4.

Table 4

EA (Positive) Imperative (write)

Number	Gender	Affix	Affix+Verb
Singular	M	?i-—-0	/^{l}?iktib/
Singular	F	?i-—-i	/?ik^{l}tibi/
Plural	M/F	?i-—-u	/?ik^{l}tibu/

EA (Positive) Imperative (pull)

Number	Gender	Affix	Affix+Verb
Singular	M	-0	/çidd/
Singular	F	-i	/^{l}çiddi/
Plural	M/F	-u	/^{l}çiddu/

EA (Positive) Imperative (eat)

Number	Gender	Affix	Affix+Verb
Singular	M	-0	/kul/
Singular	F	-i	/ˈkuli/
Plural	M/F	-u	/ˈkulu/

As Table 4 shows, there are three different forms of the imperative: masculine singular, feminine singular and plural (without gender distinction). If the imperative paradigm of 'write', 'pull' and 'eat' were compared to the second person paradigm of the imperfective in Tables 1, 2, and 3 respectively, it is noticed that they are similar to each other, except that the person agreement prefix is not present in the case of the imperative verb paradigm.

In the case of the imperative verbs of Structure 1, the person agreement prefix is changed into a glottal stop; more precisely, the consonant in the agreement prefix was converted into a glottal stop, as the consonant marks the morphological distinction in the agreement prefix. In the case of imperative verbs of Structure 2, the person agreement prefix is omitted. This is also the case for Structure 3 (the verb 'eat'). There is only one addition in the case of the plural imperative of Structure 3. The vowel (in bold), that was in the third person singular of the imperfective, as in /ˈjaːkul/ which was dropped when the plural vocalic suffix was added, is retained (see Table 3). Thus, the resulting form for the plural imperative is /kulu/ to avoid the beginning with a cluster and thus conforming to the rules of EA phonology.

1.5.   Verb Morphology Acquisition in Arabic

Few studies exist on the morphological acquisition in EA in general[7]. The main problem in reviewing the available studies on EA or Arabic in general as a basis for comparison to the current study is the different theoretical perspective in conceiving tense in Arabic. These studies assume that both present tense morpheme and past tense morpheme exist. Even, when these studies started to use the other terminology, they were stumbling, i.e., mixing up both perspectives.

None of these studies presented a concrete segment to denote the present or past tense morphemes. Some of these studies incorrectly used the agreement prefixes of the imperfective verb as if they were present tense morphemes. Thus, the comparison will be incompatible.

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[7]There are other studies on verb acquisition in other Arabic dialects. For example, Abdallah (2002) and Basaffar & Safi (2012) on Saudi Arabic.

The review will be on two studies on Egyptian Arabic by Fahim (2005, 2017), two studies on Kuwaiti Arabic by Aljenaie (2005, 2010) and a recent study on Palestine Arabic by Taha et al. (2021) to clarify this idea and mention some of their results but with caution.

The study by Fahim (2005) was on 12 EATD children aged between 1;0 and 4;4 and three EA children with developmental language impairment (DLI). Five of these TD children were studied longitudinally and seven were studied cross-sectionally. Both spontaneous language and structured tasks were used. Spontaneous language was collected from 10 of the participants, while structured tasks were administered to six of the participants. Pertinent to our current study are the results from the imperative verbs, which according to Fahim (2005), are the earliest verb forms to be produced in early language acquisition. In the early stages of syntactic development (1;11–3;3), the singular masculine imperative was often used by the participants instead of the singular feminine forms when the addressee was a female, except for very few children. Fahim attributed the use of preferred gender forms by some children to factors such as the child's sex and her/his experience as an addressee. She also reported other children who use both genders correctly and incorrectly.

With regard to the use of perfective and imperfective verbs, the results of Fahim's (2005) study showed that perfective verbs in the third person singular masculine are correctly produced in early syntactic development because this is the simplest form of verbs. The age range of acquisition of the perfective is between 2;4 and 3;1. The acquisition was based on 80% correct usage in four or more obligatory contexts. The number of children was five. Perfective errors appeared occasionally but were less frequent than imperfective errors. According to Fahim, a 'default' verb—which is a verb form which 'resembles' the imperative—was noticeable in the 'early' production of verbs. It was produced in the case of the imperfectives. These 'default' errors occurred at the age range was 1;5-3;1.

Fahim (2005, p.166) assumed that this form is a result of segment or syllable omission, or changing a verb pattern for a pattern with simple syllabic structure. The morphological analysis that Fahim (2005) used to illustrate this point does not quite correspond with the data[8]. When a child wants to say 'he is drinking', s/he does not say /bi-yi-ʔiʃrab/ as reported in Fahim (2005). The form is /bi-yi-ʃrab/, thus, the result of omissions will not be /-ʔiʃrab/, but /-ʃrab/.

Fahim (2005) added that if the resulting form is unpronounceable in the language (EA), children add a sound at the beginning of the form to make it pronounceable, which makes it 'appear' as the imperative. Fahim speculated that that this form resembled the imperative without reaching a definitive answer. This is an important point to which will be revisited in the Discussion section.

Another study by Fahim (2017) on the spontaneous production of six EATD children, age range 2;3-4;6 participating as a control group for three EA children with DLI. The EATD children showed similar results regarding the frequent correct production of perfectives compared to imperfectives. Two

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[8]Fahim, in her other study (2017), analysed similar examples correctly in some instances and incorrectly in others.

error patterns occurred in the case of the imperfectives. The first was agreement errors and the second was the use of a default form which resembled the imperative or imperfective-stem.

In the study by Fahim (2005), she adopted the approach that present tense and past tense markers morphologically occur, but it is not clear what the tense marker is. This might give more support for the other approach[9]. In her other study (2017), she adopted Benmamoun's perspective for the imperfective, while for the perfective, it is not clear which perspective was adopted, but it seems that she adopts a framework that 'marks' for tense, where is not clear what the tense marking is.

The study of Aljenaie (2005), based on the spontaneous production of three TD Kuwaiti Arabic-speaking children (at the age of two, for a six-month duration), showed 'early' correct usage of inflected verbs. In Aljenaie's study, the children's correct usage was predominant. The default form error type (a form which resembled imperatives) was also occasionally produced by the TD Kuwaiti Arabic-speaking children when describing ongoing actions. In her more recent study (Aljenaie, 2010) on the spontaneous production of three children aged between 1;8 and 3;1, the results showed that imperfective and perfective verb agreement inflections occurred correctly 89% - 97% of the time. The small percentages of errors were agreement errors (3–11%). In only 2-12% of the errors, the children used a default form error type which resembled 'the imperfective bare verb' to describe ongoing actions.

Aljenaie remarked that the children did not produce forms which are not allowed in KA, such as *ktib and explained this as resulting from the setting and operativity of the Stem parameter at an early age (Hyams, 1986). The non-use of un-allowed verb forms in the language was evident also in Fahim's studies.

In Aljenaie's study (2010, p.859), there are a number of points to be criticised. For instance, she mentioned that in Arabic verb morphology, the grammatical inflections (tense, number, person and gender) are conflated into one infix. This is quite confusing as she is following Benmamoun's theoretical approach which considers that past tense is an abstract morpheme and present tense morpheme doesn't exist. Even number, person and gender inflections are not considered infixes.

In addition, Aljenaie (2010) misinterpreted Benmamoun's (1999, 2000) argument. She mentioned that "the children used a non-finite form which is identical to the imperfective verbal bare stem to describe ongoing action, which is consistent with Benmamoun's argument (1999, 2000) that the imperfective bare verb is the default form in Arabic." (Aljenaie, 2010) [Abstract]. She uses examples as safar, naam, and sawi which are not the imperfective bare form that Bemamoun refers to, which in this case, they will be ye-saafir, ye-naam, and ye-sawi or whatever other suitable agreement features. The bare imperfective form for Benmamoun is the one without an aspectual morpheme

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[9]The same applies to the studies of Abdallah (2002) and Basaffar & Safi (2012) on Saudi Arabic.

prefix but keeping its agreement features. Consequently, what Aljenaie was talking about is a different point from Benmamoun.

A recent study by Taha et al. (2020) studied tense and subject-verb agreement in third person verbs in Palestinian Arabic-speaking (PA) children with and without developmental language disorder. There were 32 TD children aged between 3;0 and 8;0. Taha et al. (2020) followed the same theoretical framework of the current study, i.e., that of Benmamoun (2000). In PA, the perfective verb refers to past and completed actions (Abu-Ghazaleh, 1983, p.125), and hence the authors referred to it as past tense. Also, they mentioned that the imperfective verb refers to an ongoing activity that could be in the present or past time (Benmamoun, 2000) and investigated only the indicative mood occurring in sentences with present tense interpretation and hence referred to it as present tense. The TD children produced agreement with 97% accuracy. They produced past tense with 98% accuracy and the present tense with 94% accuracy. Regarding tense errors, the most common substitute was the use of the imperfective verb. The use of imperative verb substitute also occurred, but with less frequency. Regarding agreement errors, the most common gender error was the use of the masculine verb in place of the feminine verb, while the most common number error was the omission of the plural suffix –u.

In this study, the researchers mentioned 'marking' of tense, although there is no present tense morpheme and the past tense morpheme has no morphological realisation. This might be a result of their use of the term 'tense' which lead to this confusion. It would have been more appropriate to use the term 'imperfective' instead of the term 'present tense' and use the term 'perfective' instead of the term 'past tense' as they mentioned at the beginning. The use of the term 'tense' might have influenced/shaped their way of thinking.

It was clear also from many of the studies on morphological development of verbs in different Arabic dialects that there is a kind of confusion caused by using different theoretical frameworks. In all of the studies reviewed above, if the other terms were used instead, they might have reached different results, interpretations and implications.

In sum, those different Arabic dialects have their inconsistencies in applying the theoretical framework they are adopting regarding 'tense', thus, only the studies on EA will be summarised (Fahim, 2005 & 2017) but with caution. In EA, the imperative verbs were the earliest verbs produced in language development, with the singular masculine imperative often used in place of the singular feminine. Because of its simple form, the perfective third person singular masculine was correctly produced in early syntactic development. Perfective errors appeared occasionally and were less frequent than imperfective errors. Finally, a 'default' verb form which resembled the imperative was noticed in the 'early' production of verbs by participants in place of the imperfective verbs.

2. Methodology

Before presenting the methodology of the study, it should be noted that this study was preceded by a pilot study which helped in giving some insights regarding the type of errors these children produce (imperative or imperative-

like errors) and helped in the selection of certain verbs (as the verb 'eat').

2.1.   Participants

Thirty EATD children (15 girls, 15 boys) participated in providing some developmental data for EA. They were recruited from nurseries, and through personal contacts in Alexandria. They ranged from 3;2 to 5;11 and were treated as three separate groups: Group I: ages 3;2 to 3;9 (mean age: 41.88 (months), SD: 2.66). Group II: ages 4;2 to 4;11 (mean age: 54.11 (months), SD: 3.33). Group III: ages 5;0 to 5;11 (mean age: 65 (months), SD: 3.82). For these children, the 'Goodenough draw-a-man' test (Goodenough, 1975) was administered to make sure that their mental age was in line with their chronological age.

2.2.   Experimental task

A structured experimental task was used to investigate the acquisition of agreement inflections of imperfective (in present tense context) and perfective verbs (in past tense context). To elicit the imperfective verbs, pictures were used. To elicit the perfective verbs, the researcher used 'yesterday', 'yesterday morning' or 'this morning' instead of using pictures, to indicate past time (or perfective). This is because some of the selected verbs could not be presented— or clearly presented—in the perfective via pictures, as in 'smell' and 'push'. At the beginning of the session, three model/practice verbs were given: 'open', 'play', and 'go up' (nine for each of the imperfective and perfective). For example, in order to elicit the verb 'open' in the imperfective, third person masculine singular, only one picture was presented to the child: a picture with a boy opening the door. The child was asked "what is the boy doing?" (/ʔil-walad/ 'the boy' /bi-jiʕmil/ '(he) is doing' /ʔeːh/ 'what?'). The researcher replies with the model reply to illustrate the idea to the child followed by practice items.

Following that, the researcher says "Yesterday, yesterday morning or this morning, the child did the same thing, what did he do?" (/ʔimbaːriħ/ 'yesterday', /ʔimbaːriħ/ 'yesterday'/ʔil-ṣubħ/ 'the morning' ('yesterday's morning'), or /ʔil-nahaːrdah/ 'today' /ʔil-ṣubħ/ 'the morning' (today's morning'), /ʔil-walad/ 'the boy' /ʕamal/ '(he) did' /nafs/ 'same' /ʔil-ħaːgah/ 'the thing', /ʕamal/ '(he) did' /ʔeːh/ 'what?'), and so on. In order to facilitate the production of the perfective, one or more of these different alternatives of temporal adverbs were used depending on how the child responded. This is because the child might not know that a specific word takes the perfective.

Although the use of different temporal verbs to elicit the perfective was not the best decision, their use was obliged because of the nature of some verbs as 'smell'. However, the multiple practice items helped the child understand the task. Model and practice items were presented as for the imperfective verbs.

As mentioned before, the inflections of imperfective verbs (in present tense context) and perfective verbs (in past tense context), are inflected for person,

number and gender. Ten verbs were selected based on their frequent occurrence in preschool children's speech (Karam-Eldin, 1990). Also they were easy to represent as pictures, at least for the imperfectives. These verbs were 'drink', 'wear', 'wash', 'write', 'go down', 'jump', 'push', 'pull', 'smell', and 'cut with scissors'.

The selected verbs take two arguments and are optionally transitive. The verbs have simple syllabic structure. The rationale behind the selection of verbs with relatively simple structures was to minimise the influence of external factors, so the focus was on the morphological point under investigation. Because the EA children in this study include young children from the age of three, it might have been hard to determine whether their difficulty with other types of verbs would have been a result of their phonological difficulty or morphological difficulty or even both.

Five of the selected verbs were of the imperfective (third person singular) structure ˡCVC.CVC (Structure 1) (drink, wear, wash, write, and go down) and five of the imperfective structure CV.ˡCVC$_a$C$_a$ (Structure 2) (jump, pull, push, smell, and cut with scissors). As mentioned before, the corresponding structures of the perfective verb (third person singular) for these structures are ˡCV.CVC and CVC$_a$C$_a$, respectively (see Appendix A).

Although the latter structure of the imperfective (Structure 2) is liable to unstressed syllable deletion process as the first syllable is unstressed—unlike that of Structure 1 where the first syllable is stressed—it was included as it might provide broader perspective for assessing the verbs under investigation. In the phonological (syllabic) structure of the perfective form CVC$_a$C$_a$, the second and third consonants of the root are identical. For example, /çadd/ '(he) pulled' (perfective, 3rd person, masculine, singular). In final position, these identical consonants are phonetically realised as one consonant but often it is relatively longer than the usual length of the sound, but usually does not reach the duration of double consonants. These identical consonants are phonetically fully realised as geminates when a suffix is attached. For example, [çæddɪt] '(she) pulled' (perfective, 3rd person, feminine, singular). However, for the ease of transcription, these two consonants will be phonetically transcribed just as one consonant when they occur in final position.

The 10 verbs used for each of the imperfective and perfective were elicited in third person (he, she and they). As a result, there were 30 verb elicitations for each of the imperfective and perfective (60 items in total).

Although the imperfective was presented first then the perfective for each verb item, there were some exceptions: all the youngest EATD participants, i.e., Group I (in the age range from 3;2 to 3;9), and two EATD in Group II (in the age range from 4;2 to 4;11). For these participants, the imperfective was presented first for all verbs, followed by the perfective. It was easier for them to understand the task in this way.

A final remark is that an additional verb ('eat') (Structure 3) was added to the above verbs to provide some qualitative information regarding the use of imperative-like errors, as will be illustrated later. In addition, it had only one representation, unlike the other two structures where each was represented by five verbs, making the comparison incompatible. As mentioned before, the

syllabic structure of this verb is [1]CVV.CVC for the imperfective (/jaːkul/ '(he) eats') (see Table 3) and [1]CV.CVC or CVC for the perfective (/ʔakal/ or /kal/ '(he) ate') (see Table 3).

2.3.   Data analysis

Verb errors were categorised as agreement errors (number, gender, person, or more than one agreement feature), change of verb form errors (use of the imperfective instead of the perfective and vice versa), or both change of verb form and agreement errors. There was also a category for imperative or imperative-like errors.

If the child used another verb with the same syllabic structure, it was accepted and analysed. For example, if a child used 'go up' instead of 'go down', it was accepted, as both are of the same syllabic structure. If a different structure was used, it was excluded. Children's responses were excluded if they were unclear. No-responses also were excluded from the analyses[10].

3. Findings

The results of the experimental task were divided into six forms:

Imperfective verbs in total (30 items), Structure 1 -imperfective verbs (15 items), Structure 2 -imperfective verbs (15 items), Perfective verbs in total (30 items), Structure 1 -perfective verbs (15 items) and Structure 2 -perfective verbs (15 items).

Mastery acquisition was defined when the group of children had an average of 90% correct usage of agreement inflections for imperfective and perfective verbs.

Figures 1, 2 and 3 below show the results of the correct production of agreement affixes of perfective and imperfective (Figure 1), agreement affixes of perfective and imperfective for Structure 1 (Figure 2) and agreement affixes of perfective and imperfective for Structure 2 (Figure 3).
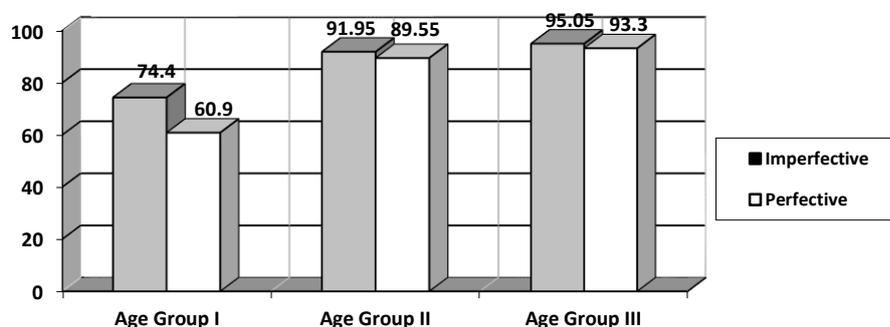

Figure 1. Correct agreement affix production of perfective and imperfective (% correct) by age group

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[10]The excluded responses were the highest for the youngest group (GI). They were 11% for the perfectives in total and 20% for the imperfectives in total.
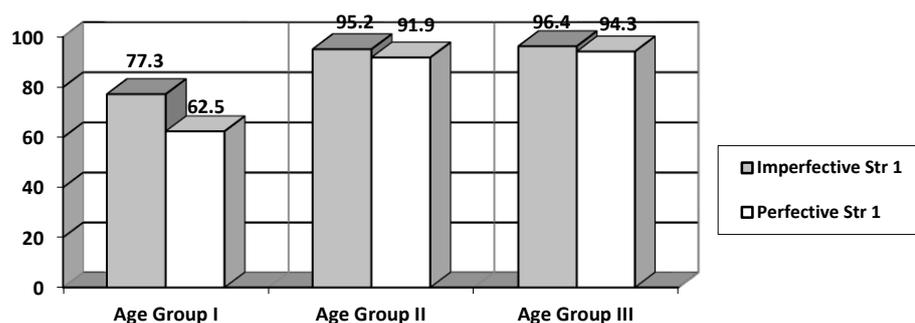
Figure 2. Correct agreement affix production of perfective and imperfective of Structure 1 (% correct) by age group
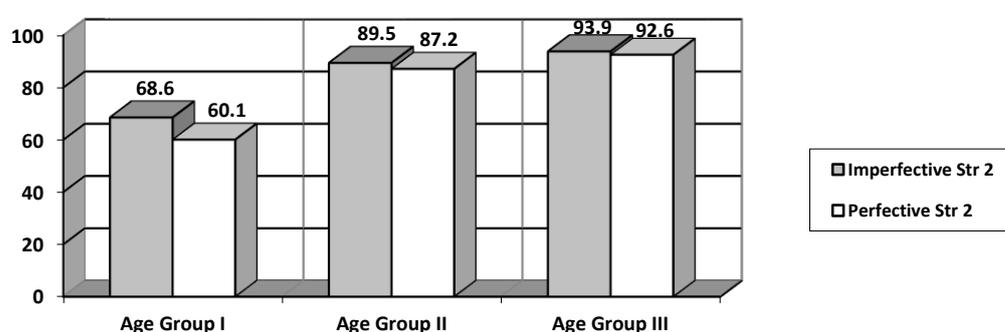

Figure 3. Correct agreement affix production of perfective and imperfective of Structure 2 (% correct) by age group

The results showed that the children in Group I had not acquired the perfective nor the imperfective to a mastery level. The second age group (Group II) had acquired almost all forms apart from Structure 2 for both the perfective and imperfective verbs, which were within 3% of reaching 90% mastery. The oldest age group (Group III) had reached over 90% mastery on all forms: perfective, imperfective, and their structures.

The number of EATD children in each of the three groups reaching 90% or above correct production of verb agreement inflections for imperfective and perfective verbs and their structures are presented in Table 5.

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The number of EATD children in each of the three groups reaching 90% or above correct production of verb agreement inflections for imperfective and perfective verbs and their structures are presented in Table 5.

Table 5

Number of EATD Children Scoring 90% or Above of Correct Production of Agreement Inflections

	Group I (3;0-4;0) N=10	Group II (4;0-5;0) N=10	Group III (5;0-6;0) N=10
Imperfective	3	7	9
Perfective	2	7	9
Imperfective Str 1	4	8	9
Perfective Str 1	1	8	8
Imperfective Str 2	3	6	8
Perfective Str 2	3	6	7

Note: Str 1=Structure 1; Str 2 = Structure 2

To investigate between group differences on their percentage correct production of agreement affixes of perfective versus imperfective verbs, a Kruskal-Wallis test was run. The results revealed significant between group differences for perfective (H=11.872(2), p=.003) with a mean rank of 8.05 for Age Group I, 17.80 for Age Group II and 20.65 for Age Group III, but not for imperfective (H=5.712(2), p=.058). There was also significance between group differences for Structure 1 for perfective (H=15.152(2), p=.001) with a mean rank of 6.80 for Age Group I, 18.95 for Age Group II and 20.75 for Age Group III, and for Structure 2 of imperfective (H=6.137(2), p=.046), with a mean rank of 10.45 for Age Group I, 16.10 for Age Group II and 19.95 for Age Group III.

These between group differences were followed up by a series of Mann-Whitney tests. These revealed that Age Group I was significantly lower than Age Group II on their correct production of agreement affixes of the perfective (U=16.500, p=.011) and Structure 1 of the perfective (U=8.500, p=.002); Age Group I was also significantly lower than Age Group III on their correct production of agreement affixes of the perfective (U=9.000, p=.002); Structure 1 of the perfective (U=4.500, p=.000) and Structure 2 of the imperfective forms (U=19.500, p=.018). There were no significant differences between Age Groups II and III.

The following part will present the errors of the 10 verbs in the imperfective and perfective and their structures (1 and 2), followed by the errors of the verb 'eat' (Structure 3).

3.1.   Errors of the imperfectives and perfectives

The percentages of errors of the imperfective verbs for each of the three groups were 26% (64 errors) for Group I, 8% (21 errors) for Group II and 5% (14 errors) for Group III. The percentages of errors of the perfective verbs for each of the three groups were 39% (104 errors), 10% (28 errors) and 7% (19 errors) respectively (for number and types of errors, see Appendix B).

The errors of the EATD children were as follows:

1. For the imperfective verbs, the error type that had the highest number, for all groups in total, was the imperative or imperative-like error (55 errors). Six children (three males, three females) in Group I committed such errors. One of the children in this group (Child (3) (3;3)) produced 24 errors of this type (92% of his errors), which was the highest number of imperative errors produced by a child in this sample of EATD children.

2. For the perfective verbs, the error type that had the highest number, for all groups in total, was change of verb form[11] (60 errors). The highest number of these errors in Group I was produced by Child (2) (3;3), which was 19 errors (70% of his total errors). This was the highest number of verb form change errors produced by a child across all groups.

Errors of verb form change were followed by imperative or imperative-like errors (44 errors for all groups in total). Group I had the highest number of such errors which were produced by five children. One of the children in Group I (Child (3) (3;3)) produced 28 imperative errors (100% of his errors), which is the highest number of imperative errors produced by a child in this sample. He was the same child who produced the highest number of

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[11]In this type of error, the agreement inflections used match the verb subject of the target verb form but are expressed in accordance to the paradigm of the incorrect verb form used.

imperative errors in place of the imperfective verb.

3. Regarding agreement errors across all groups and in both the imperfective and perfective verbs: none of the groups had high percentage of agreement errors. The highest number of errors was in the 'number agreement' errors category (49 errors changing plural into singular and two errors the opposite).

4. In the category 'change of verb form and agreement errors', there were three errors. For example, there was a combination of change of form error from imperfective into perfective and number agreement error (changing plural into singular).

5. In the category 'imperative or imperative-like errors', where such errors were used instead of the imperfective or perfective verbs as illustrated above, there were additional features involved, i.e., number and gender agreement errors. Number errors were few while gender errors were the majority. For the number errors, the children committed four errors from a total of 99 imperatives (singular and plural). Three of them were changing the singular into plural and one was the reverse.

Regarding gender errors, there were no errors for the masculine singular imperatives (30 imperatives), while all the feminine gender imperatives (31 imperatives) were produced with errors. The feminine singular imperatives were never used and they were replaced with masculine imperatives[12].

In sum, the children were in general using the second person imperative plural form instead of the third person imperfective or perfective plural. Also, the children were in general using the masculine singular second person imperative in place of the masculine singular third person imperfective or perfective and in place of the feminine singular third person imperfective or perfective which seems unexplainable and will be brought up again in the Discussion section.

For example, Child (3) (3;3) produced [ʔɪktɪb] "write" (imperative, 2nd person, singular, masculine) in place of [jɪktɪb] "(he) writes" (imperfective, 3rd person, singular, masculine) and in place of [tɪktɪb] "(she) writes" (imperfective, 3rd person, singular, feminine). In addition, the child produced [ʔɪktɪbo] "write" (imperative, 2nd person, plural) in place of [jɪktɪbo] "(they) write" (imperfective, 3rd person, plural). Also, Child (2) (3;3) produced [çɪm] "smell" (imperative, 2nd person, singular, masculine) in place of [çæm] "(he) smelled (perfective, 3rd person, singular, masculine) and in place of [çæmmɪt] "(she) smelled (perfective, 3rd person, singular, feminine). The same child also produced [çɪmmo] "smell" (imperative, 2nd person, plural) in place of [çæmmo] "(they) smelled (perfective, 3rd person, plural).

If the errors of the imperfective and perfective verbs were divided according

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[12]Except for one error, where a child (Child (6) (3;6)) added the suffix of the 'perfective' /it/ (3rd person, singular, feminine) to the singular masculine imperative.

to structure this time, the number of errors in Structure 2 was greater than Structure 1. The number of imperative (or imperative-like) errors in Group I was 35 errors for Structure 1, versus 50 for Structure 2.

3.2.   Errors of Structure 3 (verb 'eat')

Only the results that are of qualitative importance will be presented. The results of administering the verb 'eat' to Group I in the case of the imperfective showed that none of these children produced imperative or imperative-like errors. One child (Child (3), (3;3))—the same child who produced the highest number of imperative errors in this sample—produced interesting errors. The child changed the consonant of the agreement prefix, i.e., [j] and [t] into [w] in the case of the imperfective. The same errors occurred in the case of the perfective.

The child produced "(he) eats" [jæːkol] as [wæːtol][13]. The child also produced [tæːkol] "(she) eats" as [wæːkɪl] and [jæklo] "(they) eat" as [wæːklu]. The implications of these results will be discussed later.

The errors committed by the rest of the children in the case of the imperfective verb were two errors in Group I, one error in Group II and none in Group III[14]. These two errors were produced by two children in Group I, while the rest of the children in this group (seven children) performed at ceiling level.

4. Discussion

Regarding the first research aim, the oldest group of EATD children (5;0-6;0) acquired the agreement inflections of the imperfective and perfective verbs, while the youngest group (3;0-4;0) did not reach mastery. The middle group (4;0-5;0) acquired all the forms except for Structure 2 for both the imperfective and perfective verbs where they were just below the 90% threshold.

Also, it was obvious that the use of an imperative or imperative-like error (a default type error) which replaced both the imperfective and perfective verbs was a predominant error type in Group I (the youngest group). The following part addresses the second research aim which deals with the nature of the errors.

4.1.   Imperfectives

4.1.1. A default error type as a substitute for the imperfective

Initially, it might be assumed that such errors are imperative errors as the imperative verb is acquired early by EATD children as indicated by Fahim (2005). In her study, the earliest verbs produced by EATD children from the age of 1;11 were imperatives. If this was true and the children in our current study were using imperatives, we would have expected to see some singular

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[13]/k/was fronted into [t].
[14]Apart from child (3), the errors for Group I were two gender errors for the imperfective and one error which was combination of person & gender error and six change of form errors for the perfective. For Group II, there was one error which was also a combination of person and gender error for the imperfective and one gender error and one change of form error for the perfective. For Group III, there were only two errors which were change of form errors for the perfective.

feminine imperative forms. However, none of the EATD children in the current study used such a form (singular feminine imperative) instead of the imperfective or perfective verbs, but they used the singular masculine and the plural forms of the imperatives (for example, refer to Child (3) (3;3) above).

Contrary to what was expected, feminine singular imperatives were not produced by girls as a result of their experience as addressees from early development. This suggests that perhaps EATD children were not using real imperatives but made imperative-like errors.

It might be the case that these children were targeting the imperfective verbs, but because it has a complex agreement system, they neutralised the agreement prefix. If the agreement affixes of the imperfective verb system were fully inspected—not just the third person which is under investigation in this study—the system will appear complex. There are eight verb tokens for the imperfective paradigm (see Tables 1 & 2). It might not be the fusional nature of these agreement features, but rather the use of prefixes which have a complex paradigm compared to suffixes. This paradigm becomes more complex, if first and second persons were taken into consideration not just the third person. Thus, it seems that the children were neutralising the agreement prefix.

Two structures of imperfective verbs were examined in this study. For Structure 1, based on what has been mentioned above, these children were neutralising the prefix, i.e., the distinction between the consonants is lost by using a glottal stop[15] in its place. The agreement prefix of verbs of Structure 1 happened to be in a stressed syllable, as in [ˈjɪk.tɪb].

For Structure 2, [ʃɪd] "pull (imperative, 2nd person, masculine, singular)" for example, was produced instead of [jɪ.ˈʃɪd] "(he) pulls (imperfective, 3rd person, masculine, singular)", where the agreement prefix is omitted. There might be three possibilities for such an occurrence.

The first possibility is that these children are applying unstressed syllable deletion process to the verbs of Structure 2. The agreement prefix here is not a stressed syllable and given that they are still acquiring the phonology of their language, they may be simply using such a process and the resultant form was by coincidence the same form of the imperative. This interpretation is not morphological but purely phonological.

The second possibility is that these children were using the real imperative instead of the imperfective as it is an early acquired form (Fahim, 2005).

The third possibility is that these children were omitting the first unstressed syllable in order to get rid of the agreement prefix (morphological functional load), so the resultant form was an imperative-like error.

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[15]Such imperative-like errors are not the result of glottal replacement process, as /j/ and /t/ are not likely the sounds that are replaced by a glottal stop in EA. /j/ and /t/ are early acquired phonemes (Morsi, 2001).

The point that might support the third possibility and be against the second possibility (which was mentioned above (for Structure 1)) is the non-existence of singular feminine imperatives in place of Structure 2 of the imperfectives. Thus, it is more likely that these children made imperative-like errors.

However, it is possible that other children might still be deleting the unstressed syllable because of phonological reasons, as they are young children who might still have not fully acquired the phonological system of their language.

In sum, it is likely that the EATD children in Group I are trying to lessen the morphological load of the imperfective agreement paradigm either by neutralising the agreement prefix (i.e., using a glottal stop in place of the consonant (/j/ or /t/) as it marks the morphological distinction) for verbs of Structure 1, or by omitting the agreement prefix, for verbs of Structure 2 whereby the agreement prefix is an unstressed syllable. Thus, the errors committed are more likely to be 'imperative-like' errors rather than real imperatives.

If the child tried to apply the same method used for Structure 2, i.e., omitting the agreement prefix of verbs of Structure 1 as in [ˈjɪk.tɪb] '(he) writes', though it occurs in a stressed syllable, the resultant form is not a phonological word in EA, i.e., it does not conform to the phonological rules of EA, such as *[ktɪb] which results from the omission of such a prefix in [ˈjɪktɪb] as EA does not allow initial clusters (Harrell, 1957). Such types of errors didn't occur which is similar to the findings of Fahim's and Aljenaie's studies.

It seems interesting to investigate what will happen, for instance, if the agreement prefix falls in a stressed syllable and at the same time its omission does not result in a non-phonological word in EA?

A thorough investigation for verbs of different syllabic structures and stress placement is required to try answering such a question. The qualitative data of the verb 'eat' (Structure 3), where the agreement prefix forms a stressed syllable and where the remaining part after the agreement prefix omission is a phonological word in EA and which looks the same as the imperative of 'eat' (Structure 3)—might give some help in answering this question. The EATD children in Group I did not omit the agreement prefix, thus, this might support that these children in general were not targeting real imperatives. Moreover, Child (3) (3;3) converted the consonant of the agreement prefix—which marks the morphological distinction—into [w], for all third person paradigm of the imperfective. This might be considered a type of neutralisation, where the distinction between consonants is lost by using [w] instead of the target consonant(s). Thus, the agreement prefix which is a stressed syllable was not omitted but was neutralised. In addition, the rest of the children in this group produced only two errors (gender agreement errors). They kept the agreement prefix but used an incorrect gender. In sum, no imperative errors were produced in the case of the verb 'eat' (Structure 3) for children in Group I which suggests again that the children were not targeting imperatives. Regarding the question above, it might be the case that the neutralisation is likely to occur when the agreement prefix is in a stressed syllable. All such assumptions need thorough investigation in the future.

The results above might provide some developmental trajectory data for the morphological acquisition of verbs agreement inflections: It might be the case that at least some children start the acquisition of agreement inflections of imperfective verbs by the incorrect (or correct) usage of the agreement prefix in stressed syllables in structures as 'CVV.CVC (Structure 3) followed by 'CVC.CVC (Structure 1), which is considered an advanced 'developmental' step as the imperfective form itself is preserved. Then, the mastery of correct usage of the agreement prefix in these stressed syllables occurs. The agreement prefix which is an unstressed syllable (CV.'CVC$_a$C$_a$, Structure 2) might be more difficult than those in stressed syllables and thus might require more time to be acquired.

4.2. Perfectives
4.2.1. A default error type as a substitute for the perfective

When a perfective verb was the target, an imperative or an imperative-like error was a frequent error type, as mentioned before. It might be the case that the perfective concept— that implies that an action has already been done— has not been acquired yet[16]. Hence children might be intending to use the imperfective which they have acquired, but because of its complex agreement paradigm system, they neutralise the agreement prefix which results in a form which looks like the imperative (imperative-like error). In other words, these children were targeting the imperfective instead.

Thus, the data of this study support the assumption that these errors are imperative-like errors for both imperfective or perfective verbs and their structures. This is in line with Fahim (2005) who also assumed that the default type errors were more likely imperative-like errors.

4.2.2. A change of verb form error type as a substitute for the perfective

Another frequent error in Group I was the use of imperfective verbs instead of both structures of the perfective verbs[17]. This is further evidence that the perfective concept might not have been acquired yet by the children in the youngest group. Also, children did not seem to realise the metalinguistic concept that the perfective comes with certain temporal words.

The use of temporal words in this study might be the cause for not producing the perfective correctly, which might be a limitation in the experimental design of this study; however, there did not seem to be another option as some of the verbs are hard or even impossible to be presented by a picture in the perfective. But even the use of pictures for the perfective could be problematic for very young children as they usually describe what is going on in a picture which still might be an indication of the non-acquisition of the perfective. The study of Fahim (2005) showed that the perfective was acquired

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[16]More information is provided in the following section.

[17]The reason that the imperfective verbs were produced erroneously in place of perfectives, though they didn't occur when required, is that the children might have been repeating the imperfective form mentioned in the researcher's question.

within the age range 2;4-3;1. But it must be noted that this was based on a small number of children (five children) and on 80% of correct usage in four or more obligatory contexts. A large sample of spontaneous speech will show if the perfective is really acquired by age three. In general, Fahim's results showed that the perfective was acquired early which indicates that the perfective verbs are easier than the imperfective verbs. It is expected that once the children understand the concept of the perfective and have the awareness of the temporal words which takes the perfective, then it would be easily acquired because their agreement system is easier than the imperfective, as all the agreement features are expressed by suffixes only.

Another interpretation for the non-acquisition of the perfective in the current study may be the assumption by Xu (2022), that the derivation of the perfective form is based on the imperfective form. This assumption is against the early acquisition of perfectives that is assumed by Fahim's study (2005). However, many studies are still required before reaching any conclusion.

The nature of these errors, whether real imperatives or imperative-like errors, will give support for different theories of language acquisition. For example, if the language input is the reason for the use of imperatives by the children, as they are exposed to imperatives from early childhood, then this would support theories of language acquisition which focus on the importance of language input (e.g., Pinker, 1984). On the other hand, if these children were using imperative-like verbs which resulted from simplifying the complex agreement prefix, then theories on language acquisition which focus on language processing (e.g., Leonard, 1998) will be supported.

5. Conclusion

All the forms of the imperfective and perfective verbs in this study were acquired by EATD children within the age range from 5;0 to 6;0, as well as the age within the age range from 4;0 to 5;0, except for Structure 2 of both imperfective and perfective verbs which were just below the threshold of acquisition. The reason for the non-acquisition of the imperfective and perfective verbs in the youngest group is mainly due to the presence of predominant errors which were of two types: imperative-like errors and change of form errors (change of perfective into imperfective). The former type of errors is more likely to result from the morphological load of the imperfective agreement paradigm. The latter type of errors might result from a number of reasons. One of the reasons may be the difficulty of the perfective concept and/or not knowing the temporal words that come with it. Another reason may be the derivation of the perfective form from the imperfective, which means that the occurrence of the imperfective should precede the perfective as assumed by Xu (2022). However, all this needs more investigation before reaching a conclusive statement.

This research study is considered a preliminary step in investigating the acquisition of verb forms in EA. Further research with a large number of participants is still required before reaching any reliable conclusions regarding the acquisition trajectory of imperfective and perfective verbs and the nature of these errors. The real nature of such errors -when discovered- will have different implications for theories of language acquisition.

There is also a need for the full agreement paradigm of both the imperfective and perfective to be investigated with verbs of different syllabic structures and the inclusion of younger participants, perhaps from the age of two. Thus, this might provide a better perspective for assessing imperative-like errors and the neutralisation process. Consequently, this might provide insight into the stages of acquiring agreement inflections, addressing the issue of whether agreement prefixes are acquired first in certain stressed syllables. Furthermore, there is a need for spontaneous samples, not just structured ones, especially for the perfective verbs, thus overcoming experimental defects. Finally, exploring further the verbal paradigm of EA will better contribute to theories of language acquisition.

A final issue is that there will also be new implications by adopting the theoretical framework of Benmamoun (2000). Studies on morphological acquisition of present and past tense morphemes are not applicable to EA, the present and past tense are not morphologically marked. Instead, researchers would consider studying imperfective and perfective forms in different contexts; present tense context, past tense context…. In other words, present and past tense are to be studied syntactically and not morphologically.

Even theories on atypical language acquisition in Arabic-speaking children should be revisited. For example, theories concerned with children having developmental language impairment as the theory of 'Extended optional infinitive (default) stage' (for example, Rice & Wexler, 1995 a, b; Rice & Wexler, 1996; Rice, Wexler & Cleave, 1995). It was inferred that Arabic-speaking children with developmental language impairment should not have problems with tense and agreement because they don't require double checking. A number of studies (such as Abdalla, 2002; Fahim, 2005) tried to examine this theory in Arabic-speaking children with (specific/developmental) language impairment (by studying the extended optional infinitive (default) stage) or TD children (by studying the optional infinitive (default) stage), but now, this inference mentioned above isn't applicable anymore. This is because the imperfectives are not marked for tense. While for the perfectives, whether which of the assumptions (marked for past tense which is an abstract morpheme or not marked for past tense) is valid, this will have the same impact, because the target tense morpheme is not present to test the above theory. Both the imperfectives and perfectives are only marked for agreement.

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Appendix A

Target Stimuli Used in the study

Imperfective Structure 1	English Gloss	Perfective Structure 1	English Gloss
/jiçrab/	'(he) drinks'	/çarab/	'(he) drank'
/tiçrab/	'(she) drinks'	/çarabit/	'(she) drank'
/jiçrabu/	'(they) drink'	/çarabu/	'(they) drank'
/jilbis/	'(he) wears'	/labas/	'(he) wore'
/tilbis/	'(she) wears'	/labasit/	'(she) wore'
/jilbisu/	'(they) wear'	/labasu/	'(they) wore'
/jiʁsil/	'(he) washes'	/ʁasal/	'(he) washed'
/tiʁsil/	'(she) washes'	/ʁasalit/	'(she) washed'
/jiʁsilu/	'(they) wash'	/ʁasalu/	'(they) washed'
/jiktib/	'(he) writes'	/katab/	'(he) wrote'
/tiktib/	'(she) writes'	/katabit/	'(she) wrote'
/jiktibu/	'(he) write'	/katabu/	'(they) wrote'
/jinzil/	'(he) goes down'	/nazal/	'(he) went down'
/tinzil/	'(she) goes down'	/nazalit/	'(she) went down'
/jinzilu/	'(they) go down'	/nazalu/	'(they) went down'

Imperfective Structure 2	English Gloss	Perfective Structure 2	English Gloss
/jinuŧŧ/	'(he) jumps'	/naŧŧ/	'(he) jumped'
/tinuŧŧ/	'(she) jumps'	/naŧŧit/	'(she) jumped'
/jinuŧŧu/	'(they) jump'	/naŧŧu/	'(they) jumped'
/jizuʔʔ/	'(he) pushes'	/zaʔʔ/	'(he) pushed'
/tizuʔʔ/	'(she) pushes'	/zaʔʔit/	'(she) pushed'
/jizuʔʔu/	'(they) push'	/zaʔʔu/	'(they) pushed'
/jiçidd/	'(he) pulls'	/çadd/	'(he) pulled'
/tiçidd/	'(she) pulls'	/çaddit/	'(she) pulled'
/jiçiddu/	'(they) pull'	/çaddu/	'(they) pulled'

/jiçimm/	'(he) smells'	/çamm/	'(he) smelt'
/tiçimm/	'(she) smells'	/çammit/	'(she) smelt'
/jiçimmu/	'(they) smell'	/çammu/	'(they) smelt'
/jiʔuss/	'(he) cuts'	/ʔass/	'(he) cut'
/tiʔuss/	'(she) cuts'	/ʔassit/	'(she) cut'
/jiʔussu/	'(they) cut'	/ʔassu/	'(they) cut'

Appendix B

Number and Type of Verb Errors Produced by the Three Groups of EATD Children

	IMPERFECTIVE					ERRORS		
		Agreement Errors			Change of Verb Form Errors	Change of Verb Form and Agreement Errors	Imperative (Imperative- like) Errors	Sum of Errors
feature	Number	Gender	Person	More than one				
GI								
	6	7	1	2	3	-	45	64 (26%)
GII								
	8	3	1	-	3	-	6	21 (8%)
GIII								
	3	-	-	1	5	1	4	14 (5%)
Sum								
	17	10	2	3	11	1	55	99 (39%)

| | | PERFECTIVE | | | | ERRORS | | |
| | | Agreement Errors | | | Change of Verb Form Errors | Change of Verb Form and Agreement Errors | Imperative (Imperative- like) Errors | Sum of Errors |
Feature	Number	Gender	Person	More than one				
GI								
	9	4	1	2	46	2	40	104 (39%)
GII								
	14	1	-	-	10	-	3	28 (10%)
GIII								
	11	3	-	-	4	-	1	19 (7%)
Sum								
	34	8	1	2	60	2	44	151 (56%)

Note: GI = Group I, GII = Group II, GIII = Group III