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English Copula be in the Interlanguage of Adult L1 Arabic Speakers

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

The study investigates the acquisition of English copula *be* by adult L1 Arabic speakers learners of L2 English. It sets out to test two competing hypotheses with respect to the characterization of L2 acquisition in post-critical period non-native interlanguage (IL) namely, the Full Transfer Full Access Hypothesis (FTFAH) [1,2] and the Failed Functional Features Hypothesis (FFFH) [3] which serves as the framework for the study. The FTFAH view holds that IL representations in post-critical period L2 acquisition can be native-like due to convergence on native-like representations. On the other hand, the FFFH claims that IL representations in post–critical period L2 acquisition diverge from the target grammar despite apparent native-like performance. There are altogether 240 adult L1 Arabic learners of L2 English subdivided into three proficiency levels. A grammaticality judgement task is designed to test the learners' underlying knowledge of English copula *be* in past and non-past contexts. The findings indicate that although the adult L1 Arabic IL representations deviate from that of the native-like representations, the IL grammars are able to generate representations that account for the L2 data and that fall within the general constraints of UG.

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1. INTRODUCTION

English is taught as a second language (L2) in both primary and secondary schools in Yemen. In addition, first and second year undergraduate learners have to learn English as a requirement course at the university level. Yet, after learning English for almost 10 years, L2 learners often fail to attain or develop native-like grammar. Observation has shown that these L2 learners frequently produce incorrect grammatical forms in speaking and writing, particularly the past and non-past copula *be* verb forms. Thus, this study sets out to investigate the acquisition of the English copula *be* by adult L1 Arabic learners of L2 English within the generative framework and to examine the influence of Universal Grammar (UG) in adult L2 acquisition.

In the context of the generative grammar approach to L2 acquisition, the accessibility of UG is still debated, even though research focus has shifted from UG accessibility to that of the grammatical properties of the interlanguage (IL) grammars [4]. UG is postulated as a theory of an innate language faculty which consists of invariant principles for all languages and a finite number of parameters that account for language variation (see e.g. Chomsky [5,6]). Accordingly, language acquisition is assumed to involve setting a small number of parameters and the issue in L2 acquisition is whether UG accessibility is possible for adult L2 learners in the same way as it is for first language (L1) learners.

In the current view of the generative theory, that is, the Minimalist Program (MP) [5], which is the framework adopted in the present study, cross-linguistic variation is a function of the morphological features of lexical items, and the task of language acquisition (native or non-native) is the learning of the formal features and abstract morphological properties associated with lexical items and linking them to the corresponding functional categories (cited in Herschensohn [7]). During L1 acquisition, features are selected from a universal inventory and are mapped on to the morphemes being acquired. In L2 acquisition, learners are faced with two possibilities to reconfigure their IL grammar to fit the target language grammar and they are (a) if both languages share the same functional category, the L2 learners must acquire the L2 particular formal features that correspond to that functional category as well as the morphemes to which these features are mapped, and (b) if the L2 contains a functional category not found in the L2 learners' L1, the L2 learners must acquire the category in addition to its morphological features.

The acquisition of the functional categories has been a widely researched topic in the generative L1 and L2 literatures. In particular, research in L2 acquisition of the functional categories and features of the verbal inflectional morphology has made available new sets of data from typologically different L1 and L2 pairings. Further, new experimental methods have been applied to the study of L2 morphology, and different theoretical accounts have been proposed to understand the nature of morphological acquisition and processing in an L2 (for reviews, see, for e.g. White [4]; Clahsen et al [8]). One common finding from many studies on L2 morphology is that verbal inflectional morphology can be persistently difficult for L2 learners, particularly for adult learners who had begun learning the L2 after childhood. The L2 learners also exhibit variability in their use of inflectional morphology, with Tense (T) and Agreement (Agr) morphemes which are frequently omitted in their IL. In other words, the realization of overt morphology is in some sense defective [9]. The 'morphological variability' [9, 4] with L2 learners often omitting and sometimes incorrectly using obligatory inflectional morphemes or inappropriately substituting one kind of inflection for another has been reported in many studies (see e.g. Geckin & Haznedar [10]; Hawkins & Casillas [11]; Haznedar [12]; Ionin & Wexler [13], Lardiere [14,15,16,17]; McCarthy [18]; Meisel [19]; Prévost & White [20]).

A question that has been debated is whether such variability signifies that L2 learners have impaired or unimpaired functional categories and functional features such as tense (T) and agreement (Agr) in L2 grammar and most importantly whether L2 learners have access or not to UG. The question of whether defective inflectional morphology necessarily reflects the lack of syntactic representations are, however, still controversial. Some researchers have assumed that adult L2 learners' non-target-like use of verbal morphology reflects representational syntactic deficits, which yield incomplete or instable grammars [11,3,21,22].

Hawkins and Chan [3] propose that these difficulties result from a lack of functional features in the syntax that host inflectional morphemes, an account labelled as the 'Failed Functional Features Hypothesis' (FFFH). According to this account, the advanced adult L2 learners have a syntactic deficit, thus failing to specify some features which are present in functional categories in the target language (TL). The absence of such features is directly attributable to the L1, and beyond some critical period in childhood, unselected parameterized features of functional categories cease to be available [23]. More recently, Hawkins and Casillas [11] and Tsimpli and Dimitrakopoulou [22] assumed that representational deficits in the L2 grammar are restricted to the so-called uninterpretable syntactic features (e.g. agreement features of verbs) but they do not apply to the interpretable features (e.g. tense and aspect features of verbs).

Another view holds that adult L2 learners exhibit target-like use of verbal inflectional morphology [24,25,26,27,28,1,2,4,29,30]. Schwartz and Sprouse [1, 2] argue with their 'Full Transfer Full Access' (FTFA) hypothesis that both UG and the L1 grammar are involved in the L2 acquisition. According to this position, the learners start out with the functional categories, features and feature strength of their L1 and they are able to acquire L2 categories, features and feature strength. Advocates of the FTFA hypothesis maintain that the starting point of L2 acquisition is the learners' L1 grammar. Subsequently, the received L2 input that cannot be generated by the L1 grammar triggers a restructuring of the system, according to the options of UG (hence the term 'Full Access'). In other words, beyond some critical period in childhood, unselected parameterized features of functional categories which are not instantiated in the L1 are, in principle, acquirable in the L2. However, the FTFA hypothesis claims that target-like use of inflectional morphology is not guaranteed in L2 acquisition and that fossilization may occur in cases where the L2 learners cannot unlearn the L1 property in their L2 due to lack of positive input and consequently do not restructure the grammar.

In order to verify the availability of UG in post-critical period L2 acquisition, the consistency of the predictions made in the FFFH and the FTFA hypothesis are tested in this study by looking at the acquisition of the English copula *be* verbal morphology in past and non-past contexts by adult L1 Arabic speakers. The objectives of this study are to (a) determine the L2 theoretical view that is able to explain the variability exhibited in the learners' use of English verbal morphology (i.e. why they produce tense and agreement morphemes variably, and (b) determine the nature of the adult L1 Arabic learners' IL grammar at the L2 ultimate attainment level. To achieve these goals and to further contribute to the body of literature in L2 acquisition, we investigate the acquisition of the English copula *be*. Specifically, the present study focuses on the acquisition of English copula *be* morphemes including *am*, *is*, *are*, *was* and *were* by L1-Arabic-speaking learners of L2 English.

2. THEORETICAL FRAMEWORK

The aim of the present study is to investigate the acquisition of the English past and non-past copula *be* verb morphemes by L1-Arabic-speaking learning of L2 English. The morphemes being examined are *am*, *is, are, was* and *were*. To examine the acquisition of these morphemes in English, the Failed Functional Features Hypothesis (FFFH) [3] and the Full Transfer Full Access Hypothesis (FTFAH) [1,2] are tested. The FFFH proposal predicts that L2 learners whose L1 exhibits different functional feature specifications from those of L2 will not fully acquire the same representation as native speakers of the L2. As a result, the post-critical period acquisition of those functional features by L2 learners will tend to diverge from those of native speakers due to the differences between L2 learners' L1 parameter settings and the target L2 parameter settings [3]. The L2 learners may be able to map features from functional categories in their L1 onto new L2 morphology, but will not have access to the functional features of the L2 [3]. In other words, L2 learners may use the morphology of the target language but with the feature specifications of their L1. This means that the L2 learners' underlying competence of the target L2 grammar in relation to the parameterized functional features is different from those of the native speakers' underlying competence [3]. This explains why L2 learners despite their best effort could only arrive at the near native-like attainment in the acquisition of an L2. Another prediction that follows from that FFFH is that L2 learners whose L1 grammar exhibits similar functional feature specifications as those of the L2, will approximate quite closely to the

L2 grammar. On the other hand, the FTFA hypothesis contends that both UG and the L1 grammar are involved in the IL grammar. According to this position, the L2 learners start out with the L1 functional categories and functional feature specifications and are able to acquire L2 categories and feature specifications. That is to say means that all the principles and parameter values (including functional categories and associated features) as instantiated in the L1 grammar immediately carry over as the initial state of the new grammatical system (hence the term Full Transfer). This initial state of the IL grammar will have to change in light of L2 input that cannot be generated by this grammar; that is, failure to assign a representation to input data will force some sort of restructuring of the L2 grammar, this restructuring is UG-based (and hence the tem Full Access) [4,30]. Therefore, the IL representations in post–critical period L2 acquisition can be native-like due to convergence on native-like representations. The prediction that follows from Schwartz and Sprouse's FTFA hypothesis is that beyond some critical period in childhood, unselected parameterized features of functional categories which are not instantiated in the L1 are, in principle, acquirable in the L2. The L2 learner's L1 grammar (including L1 parameter settings) constitutes the starting point of the L2 acquisition. Parameter resetting is then possible in L2 acquisition because the L2 learners have access to UG in its entirety.

3. LINGUISTIC ASSUMPTIONS

3.1 Copular be in English

The copula *be* verb forms in English carry T and Agr features [4]. In [-/+past] tense, the subject and the copula verb which is raised to T [31] have to agree in the features of person and number whereby a singular subject takes on a singular form of the copula verb, i.e. the suppletive form *is/was* as shown in (1a) and (1b) respectively. Otherwise, the suppletive forms such as *am* or *are/were* are used to mark the T and Agr for singular first person or plural subjects as illustrated in (1c), (1d) and (1e) respectively.

(1) a. She is [+finite, -past, +Agr] a doctor.

b. She was [+finite, +past, +Agr] a doctor.

c. I am [+finite, -past, +Agr] a lecturer.

d. Ahmad and Ali are [+finite, -past, +Agr] friends.

e. Ahmad and Ali were [+finite, +past, +Agr] friends.

3.2 Verbless and Copular Sentences in Arabic

A verbless sentence is a sentence with no lexically realized verbal predicate [32,33]. The predicate can be a noun phrase (2a), an adjective phrase (2b), or a prepositional phrase (3), as illustrated by the examples below.

(2) a. ʕomar muʕallim-un
Omar teacher-nom

'Omar (is) a teacher.'

b. ?al-bayt-u Kabiir-un
the-house-nom big-nom

'The house (is) big'

(Examples taken from Aoun et al [32])

(3) ?al-walad-u fii ?al-bayt-i
the-boy-nom in The-house-gen

'The boy (is) at home'

(Example taken from Bahloul [33])

At the same time, Arabic allows for copular sentences. The copulas in Arabic include *kaana* 'to be' and its different morphological realizations according to aspect, person, number, and gender [34]:

(4) kaana ?al-walad-u qaSiir-an
be.3sm.past the-boy-nom short-acc

'The boy was short'

A long running issue in generative Arabic linguistics has focused exclusively on the absence of an overt verbal copula in the [-past] tense ((2) and (3)) and its obligatory presence in the [+past] tense (4).

Three analyses have been suggested to account for the absence of the copula in verbless sentences [35]. The first one suggests that in verbless sentences there is always a copula that undergoes a deletion process under certain circumstances. That is, at the underlying structure, the copula is lexically realized but gets deleted during the derivation if the conditions for deletion exist [35].

The second analysis assumes that the copula exists in the derivation as a null verb that is phonologically unrealized [35,36]. Fehri [36] argues that Arabic "verbless sentences, like verbal ones, are also headed by (abstract) T and Agr." This means that the sentence is headed by an implied verb that carries the T and defines the Agr features. That is, although the copula is invisible, it still hosts T. This implicit verb must be explicit when the T is changed to the [+past].

The third analysis suggests that verbless sentences do not contain a null copula or undergo a copula deletion rule [34]. Benmamoun's argument is that since verbless sentences are in the [-past] tense, we do not need to assume that there is a null copula that hosts T. That is, the copula is not overt when the time reference is [-past], but it does appear when the time reference of such a sentence is [+past] [34].

Although finding a clear analysis to account for the absence of the copula in verbless Arabic sentences is an important linguistic goal, it seems that [37,34,36,38] Bakir [37], Al-Tamari [34], Fassi Fehri [36], Obeidat and Farghal [38] have not convincingly done that. None of these analyses explains why the [-past] tense does not force the presence of the copula. The analysis that seems to be more convincing is Benmamoun's [34].

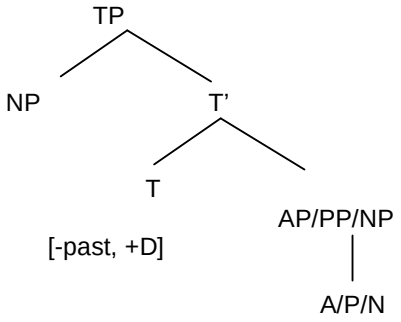
Benmamoun [34] and Aoun et al [32] provide a clear explanation that accounts for the presence of the verbal head in the context of nonverbal predicates in English and French but not in Arabic. They argue that in Arabic, it is not necessary for a verb to be in the [-past] tense because the T head does not have a [+V] feature that needs to be checked. The only element that must be present is one that can check the [+D] feature, a role that is usually fulfilled by the subject [34,32]. In English, by contrast, the [-past] tense, deictic and generic, is [+V], and therefore the presence of a verbal head that can check the [+V] feature is obligatory.

(6)	(Deictic) Present Tense	Arabic	English
		[+D]	[+V, +D]
	Copula	no	yes

(Taken from Benmamoun [34])

Thus, the [-past] tense in Arabic illustrates one instance where only one categorical feature is used, namely, the [+D] feature.

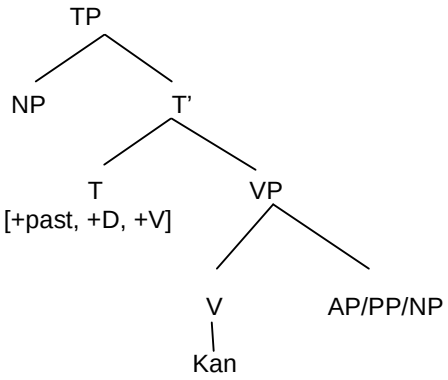
(7)



(Taken from Aoun et al. [32])

The [+past] tense, by contrast, is [+V]. Therefore, it requires the presence of the copula. The copula then checks the [+V] feature (Aoun et al. [32]).

(8)



(Taken from Aoun et al. [32])

Recall that suffixal Agr is used with the [+past] tense. The subject Agr suffix on the verb could be taken to indicate that it is [+D]. This does not entail that Agr is a realization of the [+past] tense. Agreement only reflects a relation between the subject and the [+D] EPP (Extended Projection Principle) feature of the [+past] tense [34].

4. THE STUDY

This study investigates the acquisition of English past and non-past copula *be* by L1 Arabic speakers of L2 English. The paper will look at data gathered from a grammaticality judgement task (GJT) and an oral production task (ORPT) with the aim of testing learners' underlying knowledge of English copula *be* in past and non-past contexts. It aims to examine the consistency of the FFFH and the FTFAH in explaining the acquisition of English past and non-past copula *be* by adult Arabic speakers. To do this, the study sets out to:

1. Determine the extent to which the the adult L1 Arabic learners can acquire English copula *be* in past and non-past contexts.
2. Verify whether UG is available in adult L2 acquisition and whether parameter resetting is possible.
3. Determine the nature of the adult L1 Arabic learners' IL grammar at the L2 ultimate attainment level.

4.1 Participants

In total 240 L1 adult Arabic speakers of L2 English participated in this study. They were subdivided into three proficiency levels based on their performance in a standardized proficiency test, the Oxford Placement Test (OPT) [39]. The formation of the three groups (advanced, upper-intermediate and lower-intermediate) was based on a score of 80% and above for the advanced group, between 61% and 75% for the upper-intermediate group and between 41% and 55% for the lower-intermediate group. Based on this classification, 66 participants were classified as advanced, 84 as upper intermediate and 90 as lower intermediate. The participants were undergraduate university students in Yemen. They had studied English for three years before they began secondary school and they continued to learn English at secondary schools. In addition, the first year undergraduate students had to learn English as a requirement course at the university level. This means that the learners had had at least seven to eight years of tutored exposure to the English language. The average number of years spent learning English was 10 years. However, most learners had had very little contact with English outside the classroom and in most cases, no contact at all.

4.2 Methodology

Data were collected using two instruments; a grammaticality judgement task (GJT) and an oral production task (ORPT).

4.2.1 The Grammaticality Judgement Task (GJT)

A grammaticality judgement task consisting of English sentences displaying grammatical and ungrammatical use of English copula *be* in past and non-past contexts was administered to all the participants. The task consists of 24 test items divided into three sets with the following types:

4.2.1.1 Grammatical items

8 grammatically inflected items (GI)
4 items with copula verbs in non-past contexts (e.g. *The baby is in the hospital.*)

4 items with copula verbs in past contexts (e.g. *Our kitchen floor was dull.*)

4.2.1.2 Ungrammatical items

8 omission of copula items (OI)
4 items with missing copula in non-past contexts (e.g. **The dog in the car*.)
4 items with missing copula in past contexts (e.g. **The book on the shelf yesterday*.)
8 wrongly inflected items (WI)
4 items with wrongly inflected copula in non-past contexts (e.g. **The man are at the bus station*.)
4 items with wrongly inflected copula in past contexts (e.g. **The children was thirsty*.)

The participants were given 30 minutes to answer all the items in the GJT. They were requested to judge whether an item was grammatical or ungrammatical. The test items were then coded for English copula *be* and the data collected are reported in terms of mean percentages. Then, one way ANOVA (Analysis of Variance) tests are run on all grammatical and ungrammatical item types.

5. RESULTS AND INTERPRETATION

The results of the GJT and the ORPT are discussed below.

5.1 Grammatically Inflected Items (GI)

The grammatically inflected test items (GI) include English copula *be* verb form items in past and non-past contexts. Table 1 summarises the data obtained from the participants' performance on grammatical items.

The data obtained from the learners' correct judgements of GI [+past] copula verb forms indicate that the advanced learners have attained native-like level in these items (96.25%). The upper-intermediate learners also seem to have stabilized at above 80% for these items (91.99%). The performance of the advanced as well as the upper-intermediate groups exhibit higher acceptance of correct [+past] copula verb form items compared to the lower-intermediate group whose performance is the lowest (77.50%). A one-way ANOVA shows a highly significant difference amongst all groups regarding GI [+past] copula items ($F(2,237) = 14.610$, $P = .0001$). Post-hoc Scheffe tests also indicated highly significant differences ($p<.05$) between the judgements of the lower-intermediate group on the one hand and that of the advanced and the upper-intermediate groups on the other. However, no significant difference ($p>.05$) can be identified between the advanced group and the upper-intermediate group in the said sets of items.

In contrast, the results report slightly low performance on correct judgements of the GI [-past] copula verb form items for the advanced, the upper-intermediate and the lower-intermediate learners (80.42%, 73.33% and 60.00% respectively). A one-way ANOVA shows a significant difference amongst all groups with respect to GI [-past] copula items ($F(2,237) = 7.727$, $P = .010$). Post-hoc Scheffe tests indicated that the differences between the judgements of the advanced and the lower-intermediate learners for the GI [-past] copula are significant ($p<.05$). However, no significant differences ($p>.05$) are found between the judgements of the upper-intermediate learners on the one hand and that of the advanced and the lower-intermediate learners on the other.

Comparing results for GI [+/-past] copula items, a paired two-samples *t*-test reveals that the difference in acceptance levels of [+past] copula *be* items and [-past] copula *be* items is highly significant ($p<.05$) for the advanced group ($t(65)= -4.113$, $P= .000$) and across all groups collectively ($t(239)= -6.403$, $P= .000$) with a low level of acceptance for [-past] copula *be*. This is probably due the fact that in English, copula be verb forms are generated in the same structural position and that both move to Infl to check off number and tense features (see e.g. Pollock [40]; Ouhalla [41]; Hawkins [42,43]). The fact that the adult L1 Arabic learners have shown low level of acceptance for [-past] copula *be* set of items (71.25%) can be ascribed to the fact that unlike the English copula, the copula in Arabic is not overt in the [-past] tense, but it does appear in the [+past] tense [32,34]. Overall, the results of judgements on GI [-/+past] copula *be* items seem to show that the adult L1 Arabic learners are successful in achieving native-like competence with regard to the [+past] items, thus acquiring the [+past] copula *be* verb morphemes *was* and *were.* However, these learners even at ultimate attainment level are unable to acquire the target [-past] copula *be* verb morphemes *is*, *am* and *are* to a satisfactory level.

5.2 Omission Items (OI)

The ungrammatical OI test items include omitted copula *be* verb forms in past and non-past contexts. Table 2 reviews the three groups' results for ungrammatical omission (OI) of copula *be* verb forms.

Table 1. Mean percentages of correct judgements of GI [-/+ past] copula verb form items

Item type	Advanced N=66	Upper-intermediate N=84	Lower-intermediate N=90
GI [-past] copula	80.42%	73.33%	60.00%
GI [+past] copula	96.25 %	91.99%	77.50 %
Total	88.34%	82.66%	68.75%

GI= grammatically inflected items; [-past]= non-past tense; [+past]= past tense

Table 2. Mean percentages of correct judgements of OI [-/+ past] copula verb form items

Item type	Advanced N=66	Upper-intermediate N=84	Lower-intermediate N=90
OI [-past] copula	78.33%	56.67%	36.67%
OI [+past] copula	82.50%	77.50%	47.50%
Total	80.42%	67.09%	42.09%

OI= omission items; [-past]= non-past tense; [+past]= past tense

Based on the results in Table 2, the advanced group seems to have stabilized at above 80% in the correct judgements of ungrammatical omission of [+past] copula *be* verb forms (82.50%). The upper-intermediate group, on the other hand, seems to have attained 77.50% for [+past] copula verb forms. As for the lower-intermediate group, their performance was considerably poor on these items (47.50%). A one-way ANOVA shows a statistically significant difference amongst all groups of learners regarding OI [+past] copula items ($F(2,237) = 21.334$, $P = .0001$). Post-hoc Scheffe tests also show significant differences ($p<.05$) in the judgements of this set of items across the three groups, except between that of the advanced and the upper-intermediate groups where no significant differences ($p>.05$) were detected.

On the other hand, lower levels are observed in the correct judgements of the ungrammatical items involving omission (OI) of the [-past] copula verb forms for the advanced, the upper-intermediate and the lower-intermediate learners (78.33%, 56.67% and 36.67% respectively). A one-way ANOVA indicates a significant difference amongst all groups with respect to OI [-past] copula items ($F(2,237) = 21.107$, $P = .000$). According to Post-hoc Scheffe tests, significant differences are identified across the three groups.

Taking into consideration the results of items on ungrammatical omission (OI) of [+/-past] copula, a paired two-samples *t*-test reveals that the difference in the correct judgements of ungrammatical omission of [+past] copula *be* items and [-past] copula *be* items is significant ($p<.05$) across all groups collectively ($t(239) = -3.470$, $P = .001$) with a low level of acceptance for [-past] copula *be*. Generally, the L1 Arabic learners have difficulty with the [-past] items on ungrammatical omission of copula *be* as their scores are low in this set of items. Even at ultimate attainment level, the advanced learners have stabilized at below 80% in their judgements, a level generally considered to be less than near native level. They have wrongly accepted items on ungrammatical omission of copula *be* (e.g. **the dog in the car*) suggesting incomplete acquisition of items including those with [-past] copula *be* verb morphemes. In contrast, the advanced learners display high accuracy towards items on ungrammatical omission of [+past] copula items. They have rejected items such as **the book on the shelf yesterday* indicating that they know that an overt [+past] *be* verb morpheme is necessary to make the structure grammatical.

5.3 Wrongly Inflected Items (WI)

The WI test items include wrong use of copula *be* verb forms in past and non-past contexts. Table 3 summarizes the results for correct judgements of wrongly inflected (WI) copula *be* verb form items. The morphemes including the [-past] copula *be* forms (i.e. *is*, *am* and *are*) and the [+past] copula *be* forms (*i.e. was* and *were*) are wrongly used with inappropriate subjects.

The findings obtained from the groups' performance on the wrongly inflected (WI) items indicate that the advanced group have attained at above 80% in the correct judgements of the ungrammatical wrong use of [+past] copula verb forms (89.17%). Likewise, the upper-intermediate group seemed to have attained 79.17% for WI [+past] copula verb forms.

Table 3. Mean percentages of correct judgements of WI [-/+ past] copula verb form items

Item type	Advanced N=66	Upper-intermediate N=84	Lower-intermediate N=90
WI [-past] copula	79.17%	75.00%	49.17%
WI [+past] copula	89.17%	79.17%	38.33%
Total	84.17%	77.09%	43.75%

WI= wrongly inflected items; [-past]= non-past tense; [+past]= past tense

The lower-intermediate learners' performance on these items was the lowest (38.33% for WI [+past] copula items). However, the overall performance of the advanced learners indicated that they could accurately judge the WI [+past] *be* verb forms to a native-like level. A one-way ANOVA shows a statistically significant difference amongst the three groups regarding WI [+past] copula items ($F(2,237) = 35.209$, $P = .0001$). Post-hoc Scheffe tests also find significant differences ($p<.05$) in the judgements of this set of items across the three groups, except between that of the advanced group and the upper-intermediate group.

As far as the results of the correct judgements of the WI [-past] copula verb forms are concerned, the learners seem to have attained 79.17%, 75.00% and 49.17% respectively. A one-way ANOVA indicates a significant difference amongst all groups with respect to WI [-past] copula items ($F(2,237) = 16.855$, $P = .000$). Further, Post-hoc Scheffe tests indicate significant differences ($p<.05$) in the judgements of these items across the three groups, except between that of the advanced group and the upper-intermediate. Where no significant difference ($p>.05$) is noted.

Interestingly, the results obtained from the paired two-samples *t*-test on WI [-/+past] copula items reveal that the difference in the correct judgements of ungrammatical WI [+past] copula *be* items and [-past] copula *be* items is not significant ($p<.05$) for the advanced group ($t(65) = 1.802$, $P = .077$) and across all groups collectively ($t(239) = .324$, $P = .747$). The L1 Arabic learners at ultimate attainment level have no difficulty in identifying wrongly used [+past] *be* copula items. They have stabilized at above 80% in these items. They have appropriately rejected items on wrong use of copula *be* (e.g **it were cold yesterday* respectively) suggesting that they have achieved near native-like competence. On the other hand, they have stabilized at 79.17% in correct judgements of wrong use of [+past] copula at the ultimate attainment level, a score that is just slightly below the 80% mark. This lower score shows that some of them have rejected items such as **the bird is in the cage*. This could be due to the influence of Arabic, the learners' L1, which has no overt copula morphemes in the [-past] tense.

6. DISCUSSION AND CONCLUSION

English differs from Arabic in that the English copula *be* or any of its forms must be present irrespective of tense. As for Arabic, copular sentences can include *kaana* 'to be' and its different morphological realizations according to aspect, person, number, and gender. Nevertheless, the copula which is obligatorily present in the [+past] tense is absent in the [-past] tense, contrary to English. In the treatment of these verbless sentences, Benmamoun [34] argues that they are TPs that dominate a non-verbal predicate. Yet, to account for the absence of the verb, Benmamoun dispenses with Chomsky's [5] idea that all tenses are specified as [+V]. In Arabic, Benmamoun claims that V is not necessary in the [-past] tense since T does not have a [+V] feature that needs to be checked. In other words, Arabic has a TP projection in all the main tenses (e.g. past, non-past) but no VP projection in non-past tense verbless constructions [32].

In order to verify the availability of UG in post-critical period L2 acquisition, two proposals about the representation of functional categories and features in L2 acquisition are tested. These are the Failed Functional Features Hypothesis (FFFH) [3] and the Full Transfer Full Access (FTFA) hypothesis [1,2]. In the context of the present study, the FFFH which assumes that functional categories and features not instantiated in the L1 disappear beyond a critical period, predicts that parametric differences between English and Arabic will lead to the following consequence, (a) copula *be* verb forms, particularly the [-past] copula *be* verb forms will pose difficulty for the L1 Arabic learners of English who will perform more accurately in the [+past] *be* verb forms due to the fact that the [-past] tense in Arabic is only specified for the

feature [+D] and not [+V], while it is [+V] and [+D] in English. On the other hand, if the FTFA hypothesis account is along the right lines with the findings, then the L1 Arabic learners of English should start with the functional categories and features available in their L1. They will also start with the feature of [+D] for the [-past] tense copular structures and the features of [+V, +D] for [+past] tense copular structures in Arabic. Consequently, they will accept [-past] copular verbless structures. Then, the learners will be able to acquire the L2 functional features and they will recognize that the [-past] copula is specified with the features of [+V] in English thus rejecting the copular verbless structures in the non-past tense.

The results for grammatically inflected (GI) copula *be* items indicate that the L1 Arabic learners of English exhibit knowledge of the copula *be* verb forms. The advanced learners seemed to have higher acceptance on all grammatically inflected (GI) [+/-past] copula items than the upper and lower intermediate groups. They have achieved native or near native-like competence in the acceptance levels of [+past] copula items (e.g. *our kitchen floor was dull*) suggesting that the target morphemes including the [+past] *be* verb morphemes *was* and *were* have been acquired satisfactorily. The L2 learners, particularly the advanced learners, have also shown high acceptance levels of [-past] copula items (e.g. *the students are in the library*).

Nevertheless, their judgements of the corresponding ungrammatical items show otherwise. For a learner to have achieved native or near native-like competence in a particular L2 property, they would have to have accurate intuition of both grammatical and ungrammatical items in a task. It is observed that the three groups of learners, even those at ultimate attainment level had difficulty with the non-past items on ungrammatical omission and wrong use of copula *be* verb items as their scores are low in these items. At their ultimate attainment level, the advanced learners have stabilized at below 80% on ungrammatical omission and wrong use of the [-past] copula items, a level generally considered to be less than near native-like level. A Paired two-sample *t*-test reports a statistically significant difference ($p<.05$) in the learners' correct judgements of the ungrammatical omission and wrong use of [+past] copula *be* items on the one hand and that of the [-past] copula *be* items on the other. The learners have wrongly accepted ungrammatical items on omission of [-past] copula (e.g. **the dog in the car*). With respect to the ungrammatical wrong use of *be* verb forms, the results indicated that the learners have incorrectly accepted wrong use of [-past] copula too (e.g. **the birds is in the cage*) suggesting that the target morphemes including the [-past] *be* verb morphemes *am*, *is* and *are* have not been acquired adequately.

The low performance in all [-past] sets of items is attributed to the fact that the [-past] tense in Arabic is only specified for the feature [+D], while it is specified for [+V] and [+D] in English. The [+past] tense, in contrast, is [+V] and [+D] in both languages. In other words, it is not necessary for a verb in Arabic to be in the [-past] tense because the T head does not have a [+V] feature that needs to be checked. The only element that must be present is one that can check the [+D] feature, a role that is usually fulfilled by the subject [32,34]. In English, by contrast, the [-past] tense is [+V], and therefore the presence of a verbal head that can check the [+V] feature is obligatory. The [+past] tense, by contrast, is [+V]. Thus, unlike the English *be*, the copula in Arabic is not overt when the time reference is [-past], but it does appear when the time reference of such a sentence is [+past]. The copula then checks the [+V] feature. Thus, the L2 learners are successful in achieving native or near native-like competence with regard to the [+past] *be* verb forms items, which include *was* and *were* morphemes. However, they are did not reach native-like competence with regard to the target [-past] *be* verb items with the morphemes of *is*, *am* and *are*, which are not available in the learners' L1.

In conclusion, this study sets out to contribute to the on-going debate concerning persistent difficulties posed by certain morphosyntactic properties in post-critical L2 acquisition. Having concentrated on the acquisition of English copula *be* by adult L1 Arabic speakers, the findings presented in this study can be summarized as follows:

1. Learners performed badly on [-past] *be* items.
2. Learners have acquired [+past] *be* items
3. Learners performed better with [+past] forms than with [-past] ones

Based on the findings, the following generalizations can be made:

a. There is strong interference from L1 Arabic regarding the morphological realization of [+past] and the lack thereof of [-past].
b. There is an IL phenomenon (absent in the particular environments of L1 and L2), whereby *be* is used to mark T.

Generalization (a) is compatible with any account that capitalizes on transfer: FTFA proponents would probably state that the advanced L1 Arabic speakers studied need more input to go beyond their transfer-heavy IL, while the FFFH proponents would argue that this is as good as it would ever get.

Generalization (b) provides clear evidence of an IL strategy to express T by using interpretable features from L1 as expressible and expressed on the verb *be*. The resulting *be* forms show up in more places than simple transfer would suggest, making this generalization compatible with the FFFH, and also with a highly flexible version of the FTFA.

Overall, it seems that the study does not seem to support either hypothesis. The above-mentioned generalizations show that more of the findings strongly support the FFFH and the other bits partially support the FTFAH. Overall, more of the findings presented in this study are consistent with the partial inaccessibility to UG view which is claimed to be due to the post critical period inaccessibility of functional categories and functional features which are not instantiated in adult L2 learners' L1. The adult L1 Arabic learners of L2 English are unable to acquire English functional feature specifications that differ from that of Arabic beyond the critical period. In spite of being restricted to L1 parameter values, the IL grammars are able to generate representations that account for the L2 data and that fall within the general constraints of UG. As a result the L2 learners did not fully attain native-like competence in the grammatical property where the categories and features are not instantiated in their L1. Thus, their IL representations in post–critical period diverged from that of the target grammar. On the other hand, the adult L1 Arabic learners' IL grammar approximated quite closely to the L2 English grammar wherever L1 grammar exhibited similar functional feature specifications as those of the L2.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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