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Verb Categories in Arabic Child Language: Implications for First Language Acquisition

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ABSTRACT

The study presents some generalizations drawn on the basis of observations on an Arabic speaking child with regard to the production of verbs. The underlying motivation is to examine the emerging patterns of verb inflectional categories and to what extent the results discovered could be accommodated within the current theoretical accounts of first language acquisition. The data examined for the present study consists of the spontaneous production of verbs by an Arabic speaking child. The analysis covers the age range from 2;4-2;6, which corresponds to the proto-morphological stage in first language acquisition where the child starts detecting morphology and inflectional morphology for the verb categories become productive. The results of the study indicate that Arabic speaking children develop verb categories rather early due to the word-structure properties of their native language. The findings are examined in light of cross-linguistic research pertaining to the acquisition of verb morphology.

Keywords: language acquisition, verb categories, productivity, contrastive paradigms

الملخص:

تهدف الدراسة إلى دراسة بنية الفعل في لغة الطفل من خلال تتبع الإنتاج الصرفي للفعل في مرحلة اكتساب اللغة عند الطفل الناطق باللغة العربية، و معرفة الصيغ الصرفية للفعل المستخدمة في لغة الطفل ومدى إمكانية تفسير نتائج البحث في إطار النظريات الحديثة لاكتساب اللغة الأولى. وتشير نتائج الدراسة إلى أن الأطفال الناطقين باللغة العربية يتمتعون بنمو مبكر لقدراتهم اللغوية في الإنتاج الصرفي للفعل بصيغه المختلفة بسبب الخصائص اللغوية لبنية الكلمة في لغتهم الأم.

INTRODUCTION

Children's acquisition of language has remained one of the most appealing domains of inquiry in a host of disciplines since the latter half of the 19th century and has got due recognition with the growth of cognitive science. Of late, an increasingly large amount of research has focused on the question of how children master the complexities of human language in the span of few years. In the perspective of language acquisition, the study of verb morphology development has been under focus by researchers since the seminal works of Berko (1958), Cazden (1968) and Brown (1973) on the acquisition of English. The reason for this focus is to look for possible universal points of departure

in child language acquisition especially in the dominion of verb morphology. The typological variance in the languages of the world has ignited an interest in cross-linguistic investigations and there has been a steady movement towards wider and more thorough empirical coverage of child languages from across the world. Researchers have started investigating the critical questions of how morphology is acquired across languages, how morphological classes are structured and how morphological paradigms are organized and what determines the productivity of specific word formation patterns. Recent findings and assumptions have given rise to questions about the extent of the role of language-specific features in the process of language acquisition (cf. Slobin, 1985; Bittner, Dressler & Kilani-Schoch, 2003; Stephany & Voeikova, 2009). These studies have shown that typology tends to affect the acquisition process in the sense that children acquiring a strongly agglutinating language or a strongly inflecting language should detect morphology earlier than children acquiring a language with an impoverished inflectional system.

A related important issue that has attracted a growing interest among researchers is the central question of how children acquire the knowledge of a particular language and the ability to use it. This issue has been at the center of the debate between the two most prominent poles in acquisition studies: nativist (also called 'formalist' or 'maturationalist') and non-nativist (also called 'functionalist' or 'constructivist') approaches to human language development. Nativists assume that the structure of human language is biologically programmed, predetermined by an innate language acquisition device (LAD) common to all humans (e.g., Chomsky, 1982, 1988). Since children are born with such a device, language acquisition is a matter of activating it, a role which adult language input plays. Nativists believe, however, that such input is impoverished (e.g. Pinker, 1994), and that children must therefore have access to the innate 'Universal Grammar' to fill in the gaps. Universal Grammar contains the 'core' principles of language, i.e., principles that are manifested in all human languages. Proponents of nativist approach also claim that a child is born with a set of options or parameters about what is a possible human language. These parameters will be triggered by specific linguistic events in the child's environment. According to this perspective, any specific language can be described by its particular combination of set values; and the vast numbers of languages result from the various possible combinations of settings on those parameters (see Chomsky, 1981). Thus, language acquisition is a process of identifying which parameter settings apply to one's native language. Once the parameters are identified, they constitute what is known as the core grammar of a specific language. Parameter setting, therefore, can be of a crucial importance in facilitating the process of language acquisition since much of these reduced aspects of grammar would be acquired swiftly and efficiently as the child proceeds along a narrow path of Universal Grammar. It is surly believed that experience determines which particular language children acquire, but nativists argue that much of the process of language acquisition is biologically driven, rather than being 'data driven.'

The alternative constructivist and functionalist approach view language structure in general properties of human cognition and in the linguistic and communicative functions of language (Culicover & Jackendoff, 2005; Foley & Van Valin, 1984; Tomasello, 1995, 2003). Instead of a nativist and modular view, theories of acquisition based on these descriptions of the grammar argue that a child's linguistic knowledge is

constructed rather than triggered, emerging as a consequence of the child's experiences with the linguistic and non-linguistic world (e.g., Bates & MacWhinney, 1989; Budwig, 1995; Tomasello, 2001, 2003; Slobin, 1973). Such "usage-based," approaches generally adopt the idea that the complex and intricate linguistic knowledge that children have emerges gradually over the course of human interaction. The constraints that guide the building of linguistic systems are not necessarily specific to the task of language acquisition, but reflect a set of general learning mechanisms that come together in ways that are particularly good at building grammars from the speech that children hear. Through sufficient experience with particular events of linguistic usage, children will be able to induce even more abstract linguistic regularities (Tomasello, 2000). Under these theories, language acquisition is more plausibly achievable without innate language-specific knowledge. The less abstract constructs posited make language more accessible through the input, and the child's task can be taken as one of induction from the input (MacWhinney, 2004). In this sense, the nature of the linguistic input children receive and cultural imitative learning is more important in language development especially in the early stages. Further, the communicative function of language also plays a crucial role in these accounts. Tomasello (2000) sums up this approach as follows:

> When young children have something to say, they sometimes have a set expression readily available and so they simply retrieve linguistic schemas and items that they have previously mastered (in their own productions or in their comprehension of other speakers) and then "cut and paste" them together as necessary for the communication situation at hand …(p. 77).

Despite the different views on the nature of language, neither approach seems to deny the influence of language-specific factors on the process of language development. The typological features of Arabic as a richly inflected language with a complex verb system make it particularly ideal for determining language-specific and cross-linguistic generalizations of verb morphology development in first language acquisition by explaining the extent that language typology may affect the process of learning and the factors that help or hinder children's acquisition of verb inflectional categories. Slobin (1985) assumes that languages with rich morphological systems should make children more aware of the importance of morphology, and hence they should detect morphology earlier than children acquiring languages with impoverished verb system. Consequently, the construction of miniparadigms in languages with rich verb system should emerge earlier and occur more frequently than in languages with morphologically poor verb system.

The present study addresses the previous assumption experimentally by examining the emerging patterns of verb inflections and to what extent the results discovered may contribute to the study of morphological development on the one hand, and also to the current theoretical scenario of first language acquisition, on the other hand. The Yemeni Arabic verb inflectional paradigm has been chosen for this purpose where agreement features (person, number, and gender) are overtly marked on verb forms of both the perfective and imperfective paradigms, and tense contrasts (past vs. present) are realized by using the perfective and imperfective forms respectively. In the next section, salient features of verb morphology are provided.

LINGUISTIC BACKGROUND ON VERB MORPHOLOGY IN ARABIC

Arabic is a Semitic language with rich inflectional system. Like other Semitic languages, Arabic is often described as exhibiting "nonconcatenative morphology" (McCarthy & Prince, 1988) where morphological meaning is expressed through "internal" modifications of the lexical item. For example, the root /*k-t-b/* together with the vocalic vowels /*a-a-a*/ forms the perfective form *kataba* "he wrote." The root, which consists entirely of unpronounceable consonants, is an abstract morphological unit by itself, i.e. it cannot stand in its own as an illicit utterance but rather it exists discontinuously supported by vowels adding morphological information. However, the root is essential for providing the core semantic meaning of the word as well as for providing conceptual meaning or content among semantically related words that share the same consonantal root. In contrast, the vocalic pattern is essential for the morphological structure of the verb in the sense that it acts as a formative device that combines the stem and affixes into one single form (Abdul-Raof 1998). The resulting verb form is obligatorily inflected for person (first, second, or third), number (singular, dual, or plural), gender (masculine or feminine), tense/aspect (past/perfective or present/imperfective), mood for the imperfective form (indicative, subjunctive, or jussive) and voice (active or passive) (Bulos, 1965). As a general rule, inflections for person, number and gender are obligatory present in all cases and verbs in SVO order always agree with their subject in person, gender and number, whether the subject is overtly present or not. This rich set of agreement markers facilitates assignment of sentence roles, and hence can be said to license subject nouns and pronouns omission in informal conversation. As Arabic is a pro-drop/null-subject language, a verb can in consequence function as a complete sentence as in (1).

(1) *y-adrus-u*
3sm.study.impf.ind.
'He studies/is studying'.

The Arabic verb therefore is considered as an 'amalgam' of two semantic elements, a pronoun theme and a predicate (Besston, 1970). From the structural point of view, the consonantal root is considered as one morpheme and the associated affixal pattern another morpheme. It can be noticed that the prefix *y-* is used here to show the person and number features. The suffix *-u* denotes the mood (indicative). It is generally agreed that the verb system of Arabic combines tense (relative time reference) and aspect (Comrie, 1976). Thus, the perfective can indicate completion of the action as well as occurrence in the past, while the imperfective may indicate non-completion of the action regardless of whether it occurs in the past or present.

In YA, especially the Taizi dialect spoken by the subject of the present study, the root-and-pattern system of Arabic verb morphology has been maintained, though the internal vocalic vowels are not always identical. Most of the perfective forms have the pattern CaCaC or CiCiC (e.g. *katab* 'he wrote/has written', *širib* 'he drank/has drunk'). The most common forms of imperfective are yiCCaC, yaCCuC, yaCuuC as in *yišrab* 'he drinks/is drinking', *yaktub* 'he writes/is writing', *ya ʃuum* 'he swims/is swimming' respectively. Both perfective and imperfective forms, except the third singular masculine perfective form, are overtly marked by affixes on the verb, which encode agreement features of Person (first, second, third), Number (singular, plural), and

Gender (masculine and feminine). The inflectional paradigms of perfective and imperfective used here follows the classification of Bulos (1965); Benmamoun (1999) which distinguishes between two verbal paradigms, namely the perfective past and the imperfective non-past (Tables 1 & 2).

TABLE 1: Yemeni Arabic Perfective Affixes for Person, Number, and Gender

Person/Gender	Singular	Plural
1m/f	katabtu	katabna
2m	katabt	katabtum
f	katabti	katabtiin
3m	katab	katabuu
f	katabat	katabiin

TABLE 2: Yemeni Arabic Imperfective Affixes for Person, Number, and Gender

Person/Gender	Singular	Plural
1m/f	ʔaktub	naktub
2m	taktub	taktubuu
f	taktubi	taktubiin
3m	yaktub	yaktubuu
f	taktub	yaktubiin

1= 1st person; 2= 2nd person; 3= 3rd person; m= masculine; f= feminine; s= singular; p= plural

It is noted in Tables 1&2 that in YA perfective and imperfective verbs, except the third singular masculine perfective form, are overtly marked by affixes on the verb, which encode the morpho-syntactic features such as Person (first or second or third), Number (singular or plural), and Gender (masculine or feminine). These grammatical categories of person, numbers, and gender are only suffixed to the perfective, whereas they are both suffixed and prefixed to the imperfective. Thus, in YA although there are distinct stems for the perfective and imperfective (e.g. *katab* and *aktub* 'write' respectively), the verbal markers indicating person (first/second/third), number (singular/plural) and gender (masculine/feminine) are quite distinct for the two forms. Tense contrasts, i.e. past vs. present, are primarily realized by using the perfective and imperfective forms respectively.

METHODOLOGY

Subjects and Procedure

The data examined for the present study consists of the spontaneous speech samples of a Yemeni Arabic monolingual child. The child was audio-recorded for approximately one hour a week in a variety of situations, and in more than one session. The analysis covers the age range from 2;4-2;6, which corresponds to the proto-morphological stage where the child starts detecting morphology and inflectional morphology for the verb categories become productive. At this phase of morphological development verbal affixes are understood as meaningful elements and the verbal paradigms begin to emerge and show significant development (Aguirre 2003). The importance of this stage in child language research stems from the fact that it is only at this stage that children progress from the agrammatical single-word stage to the early grammatical stage where children start to combine words in systematic patterns, which suggest that they begin to master the basic principles of grammar in their native language (Radford 1990).

Thus, the child was selected primarily because he was at the multi-word stage of language development. The speech communication at this stage was highly intelligible with clearly identifiable verb productions. It is therefore interesting to show how the child aged between 2;4-2;6 marks the inflectional categories of YA verb.

Coding and Analysis of Data

In order to detect grammatical categories in child speech, it is common to start from the target system and to count the instances of forms resembling the respective categories. Analysis included all verb-containing utterances in the child's data, with the exclusion of utterances which did not contain actual productions of verbs in particular. All verbs were coded for the inflectional categories of person (first, second, third), number (singular, plural), gender (masculine, feminine), and aspect (perfective, imperfective). Due to the optional occurrence of the pronoun subject, the verb carries the features of person, number, gender as well as tense and aspect.

RESULTS

In this section, we will discuss the child's system of verb inflectional categories. One main reason for such categories in the description of child speech is to be able to identify the formal categories used by the child and to show how far these categories in child language differ from adult grammar and how far they become productive during the period under observation. The moment of identification of verbal categories is also a key moment in the acquisition of verb vocabulary and syntax. This will allow us to account for the structure of the child's linguistic system at a given age as well as for the development of his language towards the target.

Production of Verb Categories

Table 3 presents the child's overall production of the inflectional categories of the perfective and imperfective forms and the age a given category was observed. The data in table 3 will be referred to throughout this study.

Table 3. Production of Verb Categories (2;4-2;6)

Category	**Form**	**2;4**	**2;5**	**2;6**	**Total**
1sm/f	Perf	16	22	20	58
	Impf	11	8	23	42
1pm/f	Perf	7	7	10	24
	Impf	8	13	16	37
2sm	Perf	2	8	6	16
	Impf	1	0	4	5
2sf	Perf	3	6	5	14
	Impf	2	5	3	10
2pm	Perf	2	1	3	6
	Impf	1	3	6	10
2pf	Perf	0	0	0	0
	Impf	0	0	0	0
3sm	Perf	12	14	20	46
	Impf	20	17	29	66
3sf	Perf	22	33	30	85
	Impf	25	20	35	80
3pm	Perf	8	12	16	36
	Impf	12	15	17	44
3pf	Perf	0	1	3	4
	Impf	0	3	5	8

1= 1st person; 2= 2nd person; 3= 3rd person; m= masculine; f= feminine; s= singular; p= plural

Looking at table 3 above, we can clearly observe that the only aspectual distinction is between perfective and imperfective. This aspectual distinction emerges simultaneously with tense distinctions in our data. The perfective is frequently employed in clauses conceptualizing past events, whereas the imperfective is used for events simultaneous with the act of speech. If the child was simply to specify completion, he would take imperfective form and change it to perfective form, e.g. *ʔ-alʕab*'1sm.play.impf.' would become *liʕib-tu*'play.perf.1sm.' The child used the imperfective form with the correct inflection to code ongoing situation and the perfective form to code complete situation. Moreover, all the inflectional categories marking the aspectual system of the imperfective, namely 1sm/f *ʔ-*, 1pm/f *n-*, 3sm *y-*, 3sf *t-*, are used by the child during the period under investigation. This demarcation is very interesting especially, if we know that it is the imperfective, as argued by Benmamoun (1999), that is taken as the unmarked form when it does not carry tense information, and hence as the basis of a verbal paradigm.

Comparing the inflectional categories of the perfective and imperfective forms produced between age 2;3-2;6 to those of YA, the analysis of the data shows that a rather impressive number of agreement features of the perfective and imperfective are found in the child's overall production. However, it is important to note that not all markers are used productively early on. Beginning at the age 2;4, verb singular forms are largely predominant over plural forms. The largest majority of verbs in most cases are those inflected for 3sm/f imperfective. In fact, the child has a tendency to use and

overuse 3rd person singular forms, which could be interpreted as default forms in verbal morphology acquisition. The mastery of this particular inflection is clearly reflected even in utterances in which the child refers to himself by using his name along with a verb correctly inflected to agree with the subject in person, number, and gender as in (2):

(2)	*ahmad*	*y – ašti*	*y-aruuħ*	*al-ħadiqah*
	Ahmad	3sm.want.impf.	3sm.go.impf.	def.garden

'Ahmad wants to go to the garden.'

The 3sm/f forms are also found in the perfective. In YA Perfective forms referring to 3sm are used but with omission of the 3sm suffix *-a* as in *naam* 'sleep.3sm'. The verb still refers to the 3sm despite the omission of the inflectional suffix *-a* which carries all the agreement features in Modern Standard Arabic. Accordingly, the 3sm verb form is unmarked form and it is homophonous with its own stem. In addition to third person, first singular is also used in both the imperfective and perfective forms, with the indicative mood marker being omitted in the imperfective while retaining its existence in the perfective as in *ʔ-ašrab* '1sm.drink.imperf', and *šrib-t-u* 'drink.perf.1sm.ind.' respectively. This is also true with all other imperfective forms, which can be characterized by the absence of imperfective mood markers. This absence of mood markers could be attributed to the fact that in the YA dialect there seems to be a tendency to omit bound morphemes which seem to be not obligatory and hence their omissions does not affect the semantic interpretation of the verb.

As shown in table 3 most of the third person forms are used in singular forms. The first forms of first plural were observed at age 2;4 and in the following month the number of plurals increased. The forms used with the third plural feminine imperfective were observed at 2;5 and 2;6 and were used with the suffix *-iin*, e.g., *yakul-iin* 'They eat/are eating' and *ylʕab-iin* 'They play/are playing', instead of the Standard Arabic forms *y-aʔkul-na* '3pf.eat.impf.ind.' and *y-alʕab-na* '3pf.play.impf.ind.'. It is worth mentioning that the forms used by the child are the forms commonly used in Yemini Arabic colloquial speech which is different from the Standard Arabic variant. It is not surprising that the child's use of the third plural feminine corresponds to those occurring in his parents' speech. Concerning the child's production of second singular forms, since the conversations were child-oriented, first singular forms were more numerous in the child's utterances than second singular forms.

Another issue we would like to consider in this section is related to the child's production of imperative constructions. Imperative forms are usually understood to have second person subjects. In English, this fact is obscured because overt subjects are not permitted in imperatives and the agreement morphology for second person happens to be zero. In YA, however, the second-person subject is overtly reflected in the verb agreement. As a result, the child is expected to make a gender distinction in the singular as well as the plural form of the second person imperative. This prediction is borne out in the singular form of the second person imperative as well as the plural. The following forms produced by the child demonstrate this fact.

(3) *a.* *ruuħ - ii*
go.imp.2sf
'Go!'

ruuħ
go.imp.2sm
'Go!'

ruuħ - uu
go.imp.2pm
'Go!'

During the period of observation, other instances of imperatives especially second singular feminine, were constantly observed. Clear instances are: *lʕab-ii* 'play.imp.2sf', *smaʕ-ii* 'listen.imp.2sf', *ktub* 'write.imp.2sm', *ktub-uu* 'write.imp.2pm' *šuuf-ii* 'look.imp.2sf', *taʕaal-ii* 'come-imp.2sf'.

Negative imperatives also have been produced by using the two negative morphemes *la* and *š*; *la* occurs as a proclitic on the verb while *-š* occurs as an enclitic:

(4) a. *la - t- aglis - š*
'neg.2sm.sit.pres.neg'
' Don't sit.'
b. *la - t- ftaħ - š*
'neg.2sm.open.neg.'
'Don't open.'

So, imperatives are very much used by the child but with the person prefix being deleted in positive imperatives while retaining its existence in negative imperatives. The negative morpheme *ma* has also been used, particularly in expressions of dislikes, with the first person singular prefix-ʔ being deleted as in (5).

(5) *a.* *ma - ħib-š al-wald dah*
neg .like.neg. def.boy.this
'I don't like this boy' .

5- *ma - štii -š ʔ-aruuħ al-ħadiqah*
neg.want.neg. 1sm.go.impf. def.garden
'I don't want to go to the garden'.

Future sentences in Modern Standard Arabic are formed by prefixing the future model sa (wfa) to the imperfective. During our investigation, future constructions are realized by prefixing the colloquial future morpheme *ba-* or *ša* to the imperfective. Clear examples are used with first singular masculine/feminine meaning are *ba-ruuħ* 'I will go', *ba-štarii* 'I will buy', which are characterized by systematic omission of the person marker. Future constructions with first plural masculine/feminine are also very much used by the child with the person marker overtly present after the future morpheme e.g., *ba-n-saafir* 'We will travel'.

In summary, despite the several grammatical categories that characterize the YA verb, the data reported in the present investigation demonstrate that several inflectional categories of the imperfective and perfective are represented in the child's production from the beginning of the period under observation. The child's system of person, number and gender categories is quite productive in both imperfective and perfective forms, except for the second plural feminine. However, as pointed out earlier, the third singular forms remain dominant in both imperfective and perfective. The secondly preferred category in the child's speech is the first singular.

Productivity of Inflectional Categories and Construction of Verb Paradigms

Christofidou and Stephnay (2003) view that the most crucial step for determining the development of verb inflection is not only to examine the grammatical forms of verbs used by children, but also to find out from speech production data the systematic relations among verb forms and the grammatical categories they express. This requires tracing the productivity of different inflectional categories in different verb forms. According to Radford (1990) that a particular structure reflecting syntactic knowledge is said to be productive only when the child uses the same structure with a variety of different lexical items. Morphologically speaking, the production of a given inflectional category by a given child is said to be productive only and only if it is used productively at least with two distinct inflected forms, and the same inflection is used with at least two different verbs (Christofidou & Stephany, 2003). These two criteria take into consideration the emergence of 'miniparadigms' known as paradigmatic relations characteristic of inflectional morphology. This notion of mini-paradigm is defined by Bittner, Dressler and Kilani-Shoch (2003, p. 5) as "an incomplete paradigm corresponding to a non-isolated set of minimally 3 accurate and distinct inflectional forms of the same verbal lexeme produced spontaneously in contrasting contexts." The task of the child, therefore, in learning inflectional morphology is to learn "many different words" and to develop "the ability to make more words" (Bybee 1991, p. 70). That is to say, when a sufficient number of verbs are acquired the child begins to discover morphological rules, which in turns helps in accelerating the acquisition process of verb morphology. In case of Ahmad, the number of verbs seems relatively high. The child must have stored them in the lexicon in different forms in order to begin to build a system of mini-paradigms. Given this background, we will provide an overall overview of the developments observed in paradigms formation in more detail.

Two-member paradigms

Looking at the first paradigms, we observe that there is not just one pattern. The first verb forms used is manifested in the use of the first singular masculine contrastively with the third singular feminine of the imperfective. Table 4 shows the construction of two-member paradigms.

Table 4. Imperfective first Singular Masculine vs. third Singular Feminine

Age	Verb Form	Category	Gloss
2;4	*ʔ-aktub*	1sm/f.impf.	'I write/am writing.'
	t-aktub	3sf.impf	'She writes/is writing.'
	ʔ-ašrab	1sm/f.impf.	'I drink/am drinking.'
	t-šrab	3sf.impf.	'She drinks/is drinking.'
2;5	*ʔ-alʕab*	1sm/f.impf.	'I play/am playing.'
	t-lʕab	3sm/f.impf.	'She plays/is playing.'
	ʔ-ataṣil	1sm/f.impf.	'I phone/am phoning.'
	t-taṣil	3sf.impf.	'She phoning/is phoning.'
	ʔ-arsim	1sm/f.impf.	'I draw/am drawing.'
	t-arsim	3sf.impf.	'She draws/is drawing.'
2;6	*ʔ-aʕmal*	1sm/f.impf.	'I do/am doing.'
	t-ʕmal	3sf.impf.	'She does /is doing.'
	ʔ-gaawib	1sm/f.impf.	'I answer/am answering.'
	t-gaawib	3sf.impf.	'She answers/is answering.'
	ʔ-aruuħ	1sm/f.impf.	'I go.'
	t-ruuħ	3sf.impf.	'She goes.'
	ʔ-abkii	1sm/f.impf.	'I cry/am crying.'
	t-abkii	3sf.impf.	'She cries/is crying.'

The opposition between the imperfective and perfective was also frequently used with preference for the 3rd person singular/masculine of both the imperfective and perfective forms. Table 5 shows the use of the 3rd person singular of the imperfective contrastively with the 3rd person singular of the perfective.

Table (5) Imperfective vs. Perfective

Age	Form	Category	Gloss
2;4	*y-aqul-lii*	3sm.impf.me	'He says to me.'
	qaal-lii	3sm.perf.me	'He said to me.'
	t-aruuħ	3sf.impf.	'She goes.'
	raaħ-at	3sf.perf.	'She went.'
2;5	*yi-kalim-uu-nii*	3pm.impf.me	'They talk to me.'
	kalam-uu-nii	3pm.perf.me	'They talked to me.'
2;6	*y-aḍrib-nii*	3sm.impf.me	'He hits / is hitting me.'
	ḍarab-nii	3sm.perf.me	'He hit me.'
	yi-ʕaðibuh	3sm.impf.him	'He tortures/is torturing him/it.'
	ʕaðabuh	3sm.perf.him	'He tortured him/it.'

Three-member mini-paradigms

Contrastive forms fulfilling the mini-paradigm criteria consist of three member mini-paradigms and almost show the contrast between the categories of person, number, and gender in imperfective versus perfective and also the imperative. Moreover, all mini-paradigms belong to the most productive categories; especially the third person singular masculine/feminine and the first person singular masculine/feminine. The following table summarizes all the three-member mini-paradigms noted at the age of 2;5 and 2;6.

Table 6. Three-member paradigms

Age	Form	Category	Gloss
2;5	*ʔ-aštaraytu* *y-štarii* *ʔi-štarii*	1sm/f.impf.pst 3sm.impf. 2sm/f.imperative	'I bought.' 'He buys/is buying.' 'Buy!'
	qirịṣnii *y-qraṣ* *qraṣuh*	3sm.perf. 3sm.impf. 2sm.imperative	'He/it bit me.' 'He/it bites/ is biting.' 'Bite him/it!'
2;6	*ʕi-milat* *y-ʕmaluu* *ʕmali*	3sf.perf. 3pm.impf. 2sf.imperative	'She did.' ' They do/are doing.' 'Do!'
	šaafat *yašuuf-uu* *šuuf-ii*	3sf.perf. 3pm.impf. 2sf.imperative	'She saw.' 'They see/are seeing.' 'See!'
	ruħ-tu *n-ruuħ* *ruħ-uu*	1sm/f.perf. 1pm/f.impf. 2pm.imperative	'I went.' 'We go.' 'Go!'
	ḍarabtanii *ta-ḍribnii* *ḍribih*	3sf.perf.me 3sf.impf.me 2sm.imperative	' She hit me.' 'She hits/is hitting me.' 'Hit her!'

Multi-member mini-paradigms

During the period under observation, the formation of mini-paradigms coincides with the productive use of multi- member mini-paradigms. The following table summarizes all the multi-member mini-paradigms produced by the child during the period concerned.

Table 7. Multi-member mini-paradigms

Age	Form	Category	Gloss
2;4	*ʔ-alʕab*	1sm/f.impf.	'I play/am playing.'
	n-lʕab	1pm/f.impf.	'We play/are playing.'
	liʕb-naa	1pm/f.perf.	'We played.'
	liʕib-uu	3pm.perf.	'They played.'
	lʕab-ii	2sf.imperative	'Play!'
	ʔaštarii	1sm/f.impf.	'I buy/am buying.'
	n-štarii	1pm/f.impf.	'We buy/are buying.'
	y-štarii	3sm.impf.	'He buys/is buying.'
	t-štarii	3sf.impf.	' She buys/is buying.'
	y-šatar-uu	3pm.impf.	'They buy/are buying.'
	ʔ-aštaray-t-u	1sm/f.perf.	'I bought.'
	Štarii	2sm/f.imperative	'Buy!'
	ruħ-tu	1sm/f.perf.	'I went.'
	ruħ-naa	ipm/f.perf.	'We went.'
	ruħ-tum	2pm.perf.	'You went.'

	raaħ-at	3sf.perf.	'She went.'
	raaħ-uu	3pm.perf.	'They went.'
	ruuħ	2sm.imperative	'Go!'
	ruuħ-uu	2pm/f.imperative	'Go!'
	ba-ruuh	1sm/f.fut	'I will go.'
2;5	*ʔ-aktub*	1sm/f.impf.	'I write/am writing.'
	y-aktub	3sm.impf.	'He writes/is writing.'
	t-aktub	3sf.impf	'She writes/is writing.'
	t-aktubii	2sf.impf.	'You write/are writing.'
	y-aktub-uu	3pm.impf.	'They write/are writing.'
	katab-tu	1sm/f.perf.	'I wrote.'
	katab-at	3sf.perf.ind	' She wrote.'
	Katab	3sm.perf.	'He wrote.'
	Ktub	2sm.imperative	'write!'
	ʔ-afham	1sm/f.impf.	'I understand.'
	t-fham	3sf:impf.	'She understands.'
	ma-y-fham-š	3sm.impf. (negative)	' He does not understand.'
	ni-fham	1pm/f.impf.	'We understand.'
	fihim-naa	1pmf.perf.	'We understood.'
2;6	*ʔ-anaam*	1sm/f.impf.	'I sleep.'
	t-naam.ii	2sf.impf.	'You sleep.'
	t-naam-uu	2pm.impf.	'You sleep.'
	n-naam	1pm/f.impf.	'We sleep.'
	yi-naam-uu	3pm.impf.	' They sleep.'
	nim-tu	1sm/f.perf.	'I slept.'
	nim-naa	1pm/f.perf.	'We slept.'
	nim-ti	2sf.perf.	'you slept.'
	naam	3sm.perf.	'He slept.'
	nuum-ii	2sf.imp	'sleep!.'
	ʔadrus	1sm/f.1pf	'I study / am studying.'
	t-adrus	3sf.impf.	'She studies/is studying.'
	y-adrus-uu	3pf.impf.	' They study/are studying.'
	y-adrusayn	3pf.impf.	' They study/are studying.'
	ma-yadrusayn-š	3pf.impf. (negative)	' They don't study.'
	daras-tu	1sm/f.perf.	'I studied.'
	daras-tii	2sf.perf.	'You studied.'
	daras-uu	3pm.perf.	'they studied.'
	ʔ-asaafir	1sm/f.impf.	'I travel.'
	n-saafir	1pm.impf.	'We travel.'
	t-saafir	3sf.impf.	' She travels.'
	yi-saafir-uu	3pm.impf.	' they travel.'
	saafar-tu	1sm/f.perf.	'I travelled.'
	saafar-naa	1pm/f.perf.	'We travelled.'
	saafar	3sm.perf.	'He travelled.'
	saafar.at	3sf.pf v	'She travelled.'
	saafar.uu	3pf.perf.	'They travelled.'

	saafir.ii *ba-nsaafir* *ma-ba-n-saafir-š*	2sf.imperative 1pm.fut 1pm/f. (future negative)	' Travel!.' 'We will travel.' 'We will not travel.'

The analysis of the data shows that an impressive number of contrastive forms are present in the child's production from the beginning of the period observed. This can be taken as strong evidence in favour of the fact that the child is already at the morphological stage of language acquisition. The child's morphological development also coincides with development in syntactic knowledge. In one session, for example, sentences consisting of more than one clause are used with verbs correctly inflected to agree with their subjects in person, number and gender.

(6)

a. maamah t- aquul – l-ii ʔ- aʔmal waagib-ii wa ma - lʔab -š
my mother 3sf.say.pres.to.me 1sm.do.pres homework.gen and neg.1 sm.play.neg.
'My mother says to me to do my homework and not to play.'

b. ʔanaa maa- ħib-š a-θuʕbaan dah laʔinh y-qraṣ
I neg. like.impf.neg. def.snake this because 3sm.bite.impf.
'I don't like this snake because it bites.'

It is interesting to note that although the child is acquiring a heavily pro-drop language, an overt pronominal subject is used in constructions where it can be omitted. Moreover, all the verbs that have been used by the child are clearly inflected for person, number, and gender. This is quite interesting especially if we know that it is the marked word-order (SVO), which carries more strong inflectional features than the basic VSO order where verbs must be inflected only for gender. This clearly shows that it is the SVO order, which is most dominant in the speech of the child and hence is responsible for the complete agreement features in person number and gender.

DISCUSSION AND CONCLUSIONS

In this study we have attempted to trace the verbal morphological development that characterizes the speech of a monolingual Arabic-speaking child acquiring Arabic as his first language in the age range 2;4-2;6. The motivation underlying behind this study was to examine the emerging patterns of verb inflection and to what extent the results discovered may contribute to the study of morphological development on the one hand, and also to the current theoretical scenario of language acquisition, on the other hand.

We began our study with the hypothesis that the rich inflectional system of Arabic is expected to make children acquiring Arabic as their first language more aware of the importance of morphology and hence to apply it earlier than children acquiring languages with little morphological marking, like English. The analysis of the data in the speech of one subject has revealed that an impressive number of verb inflectional categories and major inflectional paradigms are present in the child's production from the beginning of the period under observation. Despite the several grammatical categories that characterize the YA verb, we find, with some exceptions, that the verbs produced by the child are correctly inflected with the appropriate person,

number, and gender categories. Moreover, the child's system of person, number and gender categories is quite productive in both imperfective and perfective forms, except for the second plural feminine. Absence of these grammatical categories has been attributed to the constraints imposed by data collection. We can conclude that almost the entire set of inflections represented in the child directed speech is mastered by the child during the period observed.

We have also pointed out that the majority of verbs are those inflected for the 3rd person singular masculine/feminine imperfective. This relatively early mastery of this particular morpheme as compared with the relatively late emergence of the 3rd person singular form in English (cf. Cazden, 1968), can be attributed to pragmatic and morphological factors. We have already pointed out that the child produces pragmatically inappropriate utterances in which he refers to himself by his own name. This is a global finding in the child language literature, and probably reflects the difficulty that children experience with shifting reference in the first and second person (Pizzuto & Caselli, 1992). This phenomenon presents a very different problem for English and Arabic children. We have already pointed out that the verb in Modern Standard Arabic as well as in the Taizi dialect under investigation is always inflected to show overtly rich agreement marking in first, second and third person pronouns in the perfective and imperfective forms. On the contrary, the verb in English is not heavily inflected and subject-verb agreement is not often morphologically realized. This shows that the difference between Arabic and English is taken to be a matter of providing a zero option in verb marking. Arabic children therefore if they have to refer to themselves in the third person, then they have to choose an inflectional category which goes with their names. As we have observed, the child chooses the third person singular masculine. So, it is the obligatory occurrence of an overtly morphological marker that may be taken as the reason behind the mastery of this particular inflection as a way out to avoid the problem of 'shifting reference', as it is termed by Pizzuto and Caselle (1992), in the absence of a zero option for morphological marking.

Generally speaking, the analysis of the data in the speech of one subject shows that the child has grasped almost all the patterns of verb inflections. Moreover, the analysis of the data has revealed that the child's speech is almost entirely error- free, despite the complex inflectional system, which we might expect to be difficult to acquire. The factors that determine the acquisition of these patterns can be recapitulated in the following points.

The first factor seems to be related to the specific characteristics of Arabic verb. We have noted that the majority of verbs consist of a tri-consonantal root which always needs to be combined with a word pattern in order to form a phonologically pronounceable word. This results in the formation of verb stems which can then be affixed with an appropriate inflection. This regularity of the inflectional paradigms of verbs constitutes salient data available to the child. Moreover, the typically monosyllabic root plus its grammatical markers constitute a single unit that can be easily stored for later derivations of various verb forms. Our data indeed confirm the prediction concerning the absence of uninflected bare stems which may lead to violation of well-formedness of lexical items. We may argue that children acquiring Arabic find it necessary to satisfy all of such structural properties for the formation of pronounceable units that can yield to well-formed lexical items in the language.

Another important factor in acquisition is related to the function served by a particular inflectional marker. It has been already pointed out that Arabic perfective and imperfective forms are obligatorily inflected to show agreement marking in person, number, and gender. As a result, verb markers cannot be omitted or substituted without affecting the morpho-syntactic structure of the verb. It is the obligatory occurrence of morphological markers with heavy morpho-syntactic information that lies behind the mastery of verb inflections as a way out to avoid violation of basic syntactic relations. Such an explanation, no doubt, highlights the importance of the inflectional system as a major factor responsible for the precocity of the morphological developments observed.

Moreover, children's preference for acquiring the forms they acquire seems to be related to the well-known fact that they are more sensitive to learn the forms that they hear more frequently. We have found that not all forms of a verb are equally frequent and the child tends to acquire the verb form that occurs most frequently in the input. Thus, there seems to be a relationship between the frequency of lexical verbs and the acquisition of inflectional forms. We have observed that low frequency forms were less productive and did not occur in the child's production especially the 2nd person plural feminine forms.

Furthermore, naturalness considerations can be taken as a key factor responsible for mastery and productivity of a given inflectional forms. Such considerations predict that the child will start with the least marked and the most frequent form. These considerations are borne out in our data. We have already pointed out that the most productive categories are the 3rd person singular and the 1st person singular. Both categories are morphologically simple and correspond to the least marked base form of the paradigm in lexical verb. The more marked categories, e.g. 2nd and 3rd plural feminine imperfective forms, are comparatively rare and less productive. Acquisition of Arabic morphology therefore seems to be guided by naturalness principles, which favour the least marked pattern.

Lastly, since Arabic is a language with a strict noun-verb distinction and that there is a strong evidence for the grammatical category of the verb as opposed to the noun. In other words, verbs and nouns in MSA as well as in the YA variety have different morphological forms, so Arabic children have overt cues to help them identify the class membership of the words they hear. By way of contrast, children acquiring an analytic language such as English have often only syntactic cues to distinguish between, e.g., "to cook" vs. "a cook", compared with the corresponding YA forms "*yaṭbuẋ*" vs. "*ṭabbaẋ*" respectively. This helps us to conclude that the rate of learning does not necessarily lie in the simple system, but in the system that presents the child with a large number of consistent contrasts. Moreover, we may tend to say that children acquiring a morphologically rich language like Arabic are at a greater communicative advantage than those acquiring a language with an impoverished and sometimes contradictory marked morphology like English.

As far as the development of Arabic verb inflection in terms of morphological stages is concerned, we have already pointed out that when the child was first observed at 2;4, he had already entered the inflectional stage and proceeded quite far past the initial stages of verb inflection development. It was therefore not possible to find empirical evidence for the theoretical concepts of the 'pre-functional' and 'functional' stage (Radford 1990), and the 'pre-morphological' and 'proto-morphological' stage (Bittner, Dressler & Kilani-Schoch, 2003), and also to demarcate the initial stages of morphological development which require finding evidence of what Christofidou & Stephany (2003) call 'turning points' in language acquisition. It should be mentioned, however, that in our tracing of the development of verb inflection, the child is quite advanced in his inflectional development. The massive patterning of inflectional forms used and the construction of mini-paradigms are the most important achievement showing that the child has entered the proto-morphological stage so that his competence may certainly be termed proto-morphological, in which the child starts to detect morphology and construct the morphological rules of the target language. Further research examining the early stages of verb morphology development in Arabic child language would offer a more complete understanding of Arabic acquisition.

This brief discussion of the results obtained brings us back to question we raised earlier, namely to what extent can the patterns identified be explained within the perspective of the current scenario of language acquisition. This issue brings us back to the theoretical possibilities proposed by many general theories of language acquisition. In fact, the observations we have identified in the spontaneous production of the child do not seem to support a parameter-setting account of language acquisition in which a limited set of innate principles, or parameters univocally determine acquisition. The general predictions provided by this model is that the acquisition of particular morphological properties or morpho-syntactic regularities that are assumed to be dependent upon a specific parameter should be triggered. Moreover, it assumes that there is no piecemeal, progressive, or gradual manifestations of parametric properties and elements and structures that are described as manifestations of the same parameter should appear and/or be mastered at one and the same point in development (cf. Meisel, 1995; Pizzuto and Caselli, 1994). As a matter of fact, "[w]e know that no grammar can be acquired instantaneously" (Penner and Roeper, 1998, p. 87). For example, if we assume, following Hyams (1986), that inflection is specified as a core property of inflectional languages, we should expect that Arabic children master all verb inflections, because the parametric principles are assumed to operate on the entire verb paradigm. It is certainly true that we found examples of a large variety of verb inflections in the child's spontaneous production, which seems enormous and precocious in comparison with English especially with regards to the precocious mastery of the third person singular. However, contrary to what has been predicted and claimed within parameterized account, there was no complete control of any of the two morphological paradigms investigated, i.e. the perfective and imperfective.

Generally speaking, the general patterns we found in the acquisition of inflectional categories of Arabic verb are basically determined by the previously mentioned factors; with the nature of the linguistic input children receive playing a crucial role in language development. As Valian (1994, p. 280) puts it, 'the child's need to parse the input and produce speech, and the nature of the target language, set priorities for Grammar development'. In usage-based models of language acquisition children focus on the

acquisition of whole utterances and constructions, because utterances are "the primary reality of language from a communicative point of view" (Tomasello, 2003, p. 326). They therefore begin by imitatively learning specific pieces of language used by mature speakers in their environment in order to express their communicative intentions. It is only sufficient experience with particular event of linguistic usage that will enable them to gradually induce more abstract linguistic regularities. In this sense, communicative functions seem to play a major role in establishing linguistic categories from the very beginning (Tomasello, 2000). Consequently, the rich inflectional system of Arabic with its strict noun-verb distinction seems to be determined by semantic simplicity as well as frequency in the input due to communicative needs. Motivated by communicative needs, Arabic parents have to present a subset of the grammatical forms contained in the inflectional paradigms of verbs to their young children which results in a manageable number of inflectional forms of each verb lexeme. This amount of linguistic input is the reason behind the emergence and productivity of the inflectional categories we observed in the child's spontaneous production. On the contrary, absence of the inflectional categories we noted in the child directed speech and the correspondence bias on the part of the child highlights the importance of exposure to a linguistic input as a crucial factor in language acquisition.

From this socio-linguistic perspective, Niedzietyski and Preston (2003) argue that acquisition of grammar is not determined by the existence of innate grammatical parameters, which are set at a certain point in maturation. In fact, children learn language because they are simply exposed to it. They 'model' or 'copy' the language that they hear spoken by the people around them. This copying that children make, however, is different from behaviourist (e.g. Skinner 1957) notions of language acquisition in which children simply repeat what they have had explicitly modeled for them. The notion of copying appears to be similar to modern notions of acquisition; a child receives input from the adult, and based on the input, is then able to create new utterances that he or she has never heard before. Moreover, the process of 'copying' is a natural and perhaps even effortless one. In keeping with the notion of naturalness, emphasis has been given to the importance of exposure to the language. Children also play an active part in selecting their input data in relation to 'socio-cultural' rather than pure acquisition facts (Niedzielski & Preston, 2003).

As far as the notion of innateness is concerned, proponents of such models do not suggest anything similar to the innateness of the Language Acquisition Device (LAD) (e.g., Chomsky, 1959). Rather, they assume that children who hear correct language have 'correct grammar' innately. In other words, the term 'innate' is not used to suggest that language itself is innate, rather it suggests that proper language will not be innate if one is not exposed to it, i.e. it is through exposure to language that language will be innate. This sort of innateness is not the innateness of an LAD, but rather innateness in its social sense (cf. Niedzielski & Preston, 2003).

To conclude, the acquisition of inflectional categories of Arabic verb is more easily understood within usage-based models of language acquisition. Within the usage-based accounts, human brain predisposition to language acquisition involves innate information processing as well as learning biases rather than innate knowledge. Therefore, we see no reason for explaining acquisition of inflectional categories of Arabic verb based on the existence of innate knowledge of grammatical parameters, which are set at a certain point in maturation. It is to be mentioned here that our adoption

of the usage-based model is not rejection for the basic notion of innate predisposition to language. Rather, we see that innate mechanisms cannot account for all aspects of language development, which result basically from an interaction between innate and other complementary mechanisms, including active involvement in language use, that are equally essential for the development of commutative competence (Foster 1990). In this sense, the child is not a passive learner. He or she imitates but is not bound by imitation in learning language. The child actively constructs his or her own linguistic system. As Morgan (1990, p. 662) puts it, "language is not innate *or* learned; language is innate *and* learned". Such integration should lead to a more comprehensive explanation of the process of child language development.

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