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The Acquisition of Verb Inflections in Hijazi Arabic

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Abstract

The present study investigates the acquisition of verb inflections in the speech of 32 monolingual Hijazi Arabic-speaking children aged two to four years old. Our focus was to delineate the developmental patterns of the four major aspects of verb inflections (number, gender, person and tense) using a cross-sectional methodology combining an experimental and naturalistic data collection design. The experimental part consisted of three tasks testing comprehension of real inflected verbs, production of real inflected verbs, and production of nonce inflected verbs. The spontaneous part elicited data by using a video-clip description task and a story re-tell task. Participants were divided into four major age groups of six months intervals. Results found are consistent among the four groups with very little variation, children as young as two years old produced and comprehended verb inflections with few errors and these were often within-class substitutions rather than omissions. Results obtained were compared to those reported in other studies dealing with different languages, e.g., Italian, Spanish and Hebrew, as well as Arabic and appear to be similar.

Keywords: Hijazi Arabic, developmental pattern, experimental, naturalistic.

The Acquisition of Verb Inflections in Hijazi Arabic

Literature Review

The earliest evidence for the course of development and the distribution of inflectional morphology came from English (e.g. Berko 1958, Brown & Fraser 1963, Cazden 1968, Brown 1973, deVillier & deVillier1973 among others). Berko (1958) investigated the plural {–s}, possessive {–s}, present {–s}, past {–ed}, progressive {–ing}, agentive {–er}, comparative {–er} and {-est} in the speech of four to seven years old children. Selected children were divided into two groups: a preschool group of four and five years old and a first grade group of five and six months to seven years old. There were nineteen children in the preschool group and sixty-one in the first grade group. One of the striking findings of this study showed that as far as production is concerned, most of the young participants found progressive {-ing} the easiest of the morphemes studied. Of the remaining morphemes, plural {-S}, possessive {-S} and third singular {-S} appeared earlier than past {-D}. Brown and Fraser (1963) investigated Berko's claim in younger children (ages ranged between 2 and 3 years old) using an imitation task. The six participants were presented with a set of thirteen sentences to imitate. Of interest, results indicated that the plural {-S} and the progressive {-ing} appeared to be relatively easier to imitate than the other inflections. The past tense morpheme {-D} in particular was poorly imitated. A few years later, Cazden's (1968) charted the emergence of inflectional morphemes in the speech of three young children aged 16 to 50 months longitudinally. The analysis was based on tape recordings of spontaneous parent-child conversation made weekly or biweekly in each child's home. Her results indicated that in English plurals {-S} and present progressive {-ing} emerge as the first two inflections. Both Brown and Fraser (1963) and Cazden (1968) confirm Berok's original findings that past tense {-D} is more difficult than plural {-S}, the progressive {-ing} and the third person singular {-S}. One of the important findings of Cazden's (1968) study is the differential treatment given to three different but homophonous morphemes (/s/ representing the

plural, possessive and 3rd person {-S}). Cazden (1968) reported that in the speech of the three subjects, plurals {-S} appeared before possessives {-S} and 3rd person {-S}.

In 1973, similar to Cazden (1968), Brown longitudinally followed the emergence of inflectional morphemes in the speech of three young children (Adam, Eve, and Sarah) recording their interactions with the researcher periodically every month. Children were not of the same chronological age when the study began but were selected on the basis of matched initial performance. Eve was 18 months and Adam and Sarah were 27 months. Eve was observed for 10 months only whereas Adam and Sarah were observed for another four years. Only the period in which the three children were observed was analyzed for the purpose of that study. The study was concerned with more than just the regular inflectional morphemes examined by the three previous studies. It also included the emergence of irregular morphemes such as 'he has' for the 3rd person singular {-S}, 'he had' for the past {-D}, the use of verb 'to be' as an auxiliary (both in its contracted 'I'm' and non-contracted 'I was' form) and as a main verb or *copula* (both in its contracted 'I'm happy' and non-contractible 'This is it' form) as well as the acquisition of the prepositions *in, on*, and the articles *a, the.* One of the most important findings of this study was the remarkable similarity observed in the order of acquisition of the morphemes studied among the three subjects. The first morpheme to appear was reported to be progressive {–ing} followed closely by prepositions *in* and *on,* and plural {-S}, then irregular past tense (e.g. *went*), possessive {-S}, uncontractible *copula is,* articles *the* and *a,* followed by regular past tense {-D}, third person regular {-S}, third person irregular (e.g. *has*), followed by auxiliary uncontractible (*e.g. was, do*), copula uncontractible (e.g. *I am*) and finally auxiliary contractible (e.g. *Mommy's*). This order was later confirmed in other studies including those investigating the acquisition of these morphemes in second language learning situation, and this order became known as the *natural order hypothesis*. In the same year, deVilliers and deVilliers (1973) ran a cross-sectional study investigating the use of Brown's (1973) set of syntactic and morpheme markers in

obligatory contexts in twenty-one children aged sixteen to forty months of age. DeVilliers and deVilliers (1973) reported an order of acquisition that correlates highly with Brown's longitudinal data. Devilliers later on pointed out how remarkable it is that children's early grammar can reflect the properties of their language (2011).

As early as 1968, Chomsky (1968) used this similarity of the acquisition path across children of diverse backgrounds and across languages to reason that the acquisition process operates under innate principles which are governed by Universal Grammar. (Ritchie and Bhatia 1999). Consequently, it became widely accepted that the acquisition of language aspects is not a product of experience but of human genetic endowment. The research that followed seem to point to a fundamental affirmation which claims that the acquisition of inflectional morphemes follows a developmental pattern that seems to be adhered to by children acquiring English from diverse backgrounds.

Over the years, mounting cross-linguistic evidence provided supporting results. In a series of studies in the early 90s, Caselli and colleagues investigated the acquisition of inflectional morphology in Italian and came to a similar conclusion. For example, Pizzuto and Caselli (1992, 1994) observed the acquisition of verb morphology in the language of three Italian children between the age of one year four months and three years. Their results showed that singular forms are acquired before plurals and present before past and future; but no developmental order in the acquisition of person forms was observed. A follow-up cross-sectional study of a larger number of children was conducted by Caselli et al (1993) in which drawings were used to elicit the production of inflectional morphemes in the speech of 34 Italian children between the ages of two years and six months to five years. Their findings confirmed earlier studies and implicitly confirmed that children seem to adhere to a similar developmental pattern irrespective of the input language (i.e., seems to be universal).

In (2004) Montrul studied the acquisition of Spanish in monolingual and bilingual situations by children during the years of primary linguistic development, and

by adults in second language acquisition. The study focused on morphology of nouns and verbs, syntax and some aspects of lexical semantics. Montrul's (2004) found that Spanish-speaking children show mastery and understanding of verbal inflections from the earliest stages observed. In all cases, there was evidence of productivity, i.e., the same verb appeared in at least three different forms. The patterns of emergence reported in all the studies mentioned were strikingly similar. Third singular is the most frequent form followed by 1st singular. Children learn simpler, default forms (i.e. singular and masculine) earlier and take some time to master the more complex and other irregular forms of the language, singular before plural and present before past and future.

Similarly, Hebrew as well as Arabic, being morphologically rich languages, pose a particularly interesting challenge since (a) verb forms must be inflected, and (b) single forms mark multiple aspects (for example, the basic perfective Arabic form /katab/ is marked for gender, tense, person and number). In relation to Hebrew, Levy (1983) observed her son from 1 year 10 months to 2 years 10 months. She found that he used masculine verbs to address both males and females before the feminine form become frequent and masculine plural forms were more dominant than feminine plural forms.

In a similar longitudinal study Abdou and Abdou (1986) followed the lexical development of their two babies from the babbling stage to six years of age. As far as the inflectional system is concerned, the data they obtained from their Arabic-speaking children confirmed previous findings in Hebrew in that simpler forms such as singular appeared before more complex inflections such as plural. However, their children's data revealed a distinction in the treatment of perfective (i.e., past) vs. imperfective (i.e., present) tenses. For example, they reported that in the perfective (past), third person is acquired before first which is acquired before second, while in the imperfective (present) each child presented a different pattern. Similarly, plural imperfective (present) appeared much later in their children's speech than perfective (past) inflections. Although this study was not conclusive in its findings as far as the acquisition of the inflectional system

in Arabic is concerned, it provided the impetus for the investigation of this complex system.

In 2001, Aljenaie presented her findings of another longitudinal study following the development of verb inflection in the speech of four Kuwaiti children ranging in age from two years to two years and six months. She was particularly concerned with two dimensions of this system; tense and agreement. Aljenaie (2001) asserted that in a system that does not have bare roots (uninflected verb forms) young children produce inflected forms very early on. Interestingly, however, the children in her study produced both the perfective (past) and imperfective (present) from the beginning of productive speech, and that they showed more confidence with the usage of third and first person than with second person. Her findings also supported earlier claims that simpler forms (singular and masculine) are acquired before more complex forms (plural and feminine) (Aljenaie 2010).

The theoretical debates that ensued took many forms. Some have used the evidence to argue for the Maturation Theory (Gleitman, 1981; Borer and Wexler 1987, 1993; Rizzi 1994; Wexler 1994 and Wexler 1999) as opposed to the Innatist view of language acquisition (Chomsky 1959). Others have used the discrepancy observed in the acquisition of regular versus irregular inflectional forms to argue for a single (Bybee 1995; Elman, Bates, Johnson, Karmiloff-Smith, Parisi, and Plunkett 1996; Langacker 2000) as opposed to a dual route (Clahsen 1999 and Pinker 1999) of cognitive processing. Of interest here is the debate that sprang from the Maturation-Innatist discussion in the form of the Discontinuity (Braine 1987, Bloom 1991, Tomasello 2000) vs. Continuity (Pinker 1984, Hyams 1986 and Weissenborn, Goodluck and Roeper 1992) Hypotheses.

Of interest is the Discontinuity Hypothesis that claims that language is learned through intellectual processes common to all learning without the existence of an innate

Language Faculty. Children acquire language without any specific innate knowledge about grammar but with cognitive skills to categorize, schematize, and generalize. Accordingly, language develops gradually (Tomasello 2000, 2003). The hypothesis, therefore, claims that children use language without analyzing their grammatical properties. The Continuity Hypothesis, on the other hand, claims that children have a grammar from the beginning that only requires exposure to linguistic data to get activated. This grammatical knowledge is largely innate and constrained by UG (Pinker 1984). The idea that the principles of UG are innately available to children led some researchers to predict that children are grammatically fully competent from the earliest observable stages (Pinker 1984, Hyams 1986 and Weissenborn, Goodluck and Roeper 1992). Supporters of the first view (i.e. lack of innate knowledge) believe that the early use of functional category morphemes such as inflectional morphology is not productive. The child does not realize that these multi-morphemic words comprise a lexical morpheme plus one or more grammatical particle. Supporters of the Continuity hypothesis, however, claim that children acquiring morphologically rich languages, such as Spanish, Hebrew and Arabic, in which grammatical aspects such as number, gender and tense are morphologically expressed, use functional category morphemes such as verb and noun inflections from the earliest stages of acquisition. The main testable prediction that follows from these two hypotheses is that if children lack innate specific knowledge (i.e., Discontinuity), then children's acquisition of, for example, the morphological system of their language will be slow and marked by a high rate of errors, while if they are approaching the input language with innate principles in place (i.e., Continuity) then they will exhibit full productivity from early on with an extremely low rates of error.

A cross-sectional methodology that combined an experimental and naturalistic data collection design was used in this study to investigate the acquisition of verb inflections in the speech of 32 young Hijazi children (aged 2 - 4 years) acquiring Arabic

as their first language. The order in which these inflections are acquired is traced and recorded.

Verb Inflections in Hijazi Arabic

The inflectional system of the Arabic verb paradigm is very complex since verbs mark number, gender, person, tense and voice. For example, يكتبون /yaktubu:n/ "they write" reflects the present, masculine, third person plural of the verb, while كتبتُ/katabtu/ "I wrote" for example, marks, past, first person, singular (for a full paradigm see Benmamoun 2000). Hijazi Arabic (a spoken dialect in the Hijaz regions of Saudi Arabia) is similar to that of Standard Arabic with a few losses (Benmamoun 2002).

Participants

For the purpose of our study, we analyzed the speech of thirty two children (16 girls and 16 boys) ranging in age from 2 to 4 years old. Selected children were monolingual speakers of the Hijazi dialect of Arabic coming from educated Hijazi dialect-speaking parents and sharing the same middle socioeconomic background. All children were healthy with no physical or mental deficiency. We sorted the selected children into four groups according to their chronological age in a range of six months to follow the developmental pattern in their speech. Each of the four groups consisted of eight children, four males and four females. Age groups were as follows: group one (G1) 2 years to 2 years 6 moths; group two (G2) 2 years 6 months to 3 years; group three (G3) 3 years to 3 years 6 months and group four (G4) 3 years 6 months to 4 years.

Procedure

In order to achieve our objectives, we initially started with an experimental design in collecting our data which used two main tasks one to test the comprehension of the different verb inflections and the other task to tests production - inflecting real verb forms as well as novel forms (nonce). Having run a pilot study, it was clear that the youngest two groups of children (ages 2 – 3 years old) were not very productive with the

experimental task and samples of their spontaneous speech were deemed necessary for an overall assessment. In order to collect the spontaneous samples, we used two techniques, the video clip and the story re-tell.

The test, therefore, consisted of five tasks, three experimental and two spontaneous. Experimental tasks consisted of a comprehension task and a production task. The production task consisted of two parts, real verbs' production and nonce verbs' production. The experimental task was presented using pairs of pictures. Spontaneous samples were collected using a video-clip description task and a story re-tell task. The video-clip was presented on a laptop monitor and the story re-tell task was presented using a picture story. The whole test was accomplished in four different sessions that took place on four successive days due to its long nature compared to the children's short attention span.

In the experimental tasks, all pictures used were carefully selected presenting one single inflection at a time (e.g., singular masculine present يلعب /yelʕab/ 'he plays' as apposed to تلعب /tilʕab/ 'she plays' when gender was tested or يلعب /yelʕab/ 'he plays' as apposed to لعب /liʕib/ 'he played' when tense was tested). The comprehension task contained 63 pairs of pictures. We first gave each child simple instructions on what to do and presented him/her with a pair of pictures used for illustration. We then asked the child to select one of two pictures presented to him/her that correspond to the inflected verb produced. Each verb was repeated three time before the child was given the chance to point to the picture corresponding to the verb produced. Following is an example of the comprehension task testing gender in which gender verb inflections were presented,

1. a) فين ايلي حياكل

/feyn-illi ħaya:kul/

‘which one will eat?’

(3SMFu), followed immediately by

b) أيت ايلي حياكل

/ʔayyat-illi ħaya:kul/

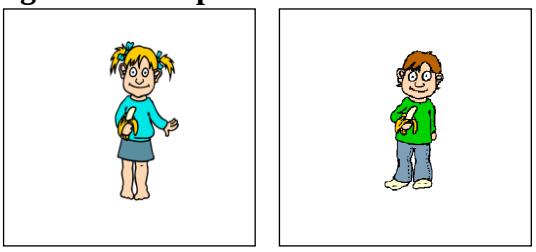
‘which one is going to eat?’, and

c) وريني ايلي حياكل

/warri:ni-illi ħaya:kul/

‘show me the one that is going to eat.’

Figure 1. Comprehension Task for Gender



Once the child pointed to a picture, the following pair of pictures was immediately presented to him/her. If the child pointes to the picture corresponding to the right inflection presented, he/she received a (1) score and if not, he/she received a (0) score.

Distracters (foils) were added twice in each session (eight in total) to make sure that the child was following. Each distracter contained two different nouns familiar to the child (e.g., a ball and a telephone, a girl and a boy, a house and a horse, a duck and a lollypop, etc.).

Production tasks contained 126 pair of pictures (63 real verbs and 63 nonce verbs). We presented each child with a pair of pictures as in the comprehension task depicting two different inflections for the same verb. However, in this task we asked the child to listen to the verb with the inflection corresponding to the first picture and then asked him/her to produce the same verb with the different inflection corresponding to the second picture. Following is an example of a real verb production task,

2. هادا يبكي و هادول؟ شوف يبكي، هادا يبكي و هادول؟

/ha:da yebki: wa hadol/ /ʃu:f yebki:/ /ha:da yebki: wa hadol/

‘This one is crying (3SMPr), what are those doing?

Look, he is crying. He is crying, what are

they doing?’

The expected answer is

يبكوا

/yebku:/

‘crying’ (3PlPr).

Figure 2. Production of Real Forms for Number

The procedure here is similar to the one used for real verbs. Nonce forms have been used to test whether children are able to generalize a particular 'rule' (Berko 1958) since nonce forms are novel and cannot be processed from memory. For example, we would say,

3. هادول زلموا وهادي زيهم ايش سوت؟ هما دايما يزلموا، هما زلموا وهي؟

/hado:l zalamu: wa ha:di zayyahum ʔeyʃ sawwat/ /humma da:yman yezlumu:/ /humma zalamu: wa heyya/

'Those zalamu (3PlP) and this one? Just like them, what did she do?

They always yezlumu: they zalamu and she ___?'

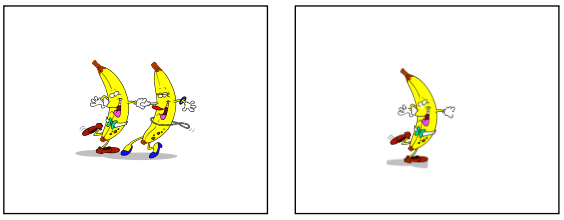
The expected answer is:

زلمت

/zalamat/

(3SFP).

Figure 3. Production of Nonce Forms for Tense



Note that Hijazi does not use the dual verb distinction. Therefore, pictures presenting two or more agents were used for plural.

In the video-clip description task, we presented each child with a two-minute video-clip on a laptop monitor. The clip contained a number of actions performed by single, plural, male and female agents. The clip was run twice. During the second time, we asked the child to describe what is happening. Halfway through, the clip was put in a pause mode and we asked the child to describe what happened and what was going to happen afterwards.

In the story re-tell task, we made the child listen to a short story, we then asked the child to re-tell it in her/his own words.

The whole experiment took place in four sessions during successive daily visits to nurseries and kindergartens. Each session lasted about 25 minutes.

Stimuli Selection

In the two experimental tasks, we used pairs of pictures each denoting one aspect of the verb. Two criteria were necessary for the selection of stimuli (or verbs), frequency and imageability. Since there are no established child language frequency lists in Arabic, the Oxford Baby lab Communicative Development Inventory (CDI) was used as a starting point. Words that indicate actions (such as bite, clean and chase) were selected, translated and linguistically and culturally adapted to Hijazi. This came to a total of 70 verbs. Ten additional verbs were added. Following the CDI format, a questionnaire

containing the 80 verbs was developed. This was distributed to 30 mothers and fathers of children of average age 2.5. Each parent was asked to mark whether their child (a) understands, (b) understands and says, (c) understands and says in a different way, or (d) is unfamiliar with each verb on the list. Only verbs with high frequency were selected.

Nonce verbs were generated to be simple and similar to those on the high familiarity list. Any complicated, long verbs or those that can be derived from real nouns or adjectives were avoided.

Scoring

Responses (for the experimental tasks) were scored either zero (0) or one (1). We assigned zero (0) for either no response or an incorrect response while a score of one (1) was given to correct responses. The same procedure of scoring (0 or 1) was also used for the spontaneous data where correct verbs in obligatory context were given (1) while incorrect verbs in obligatory context were given (0). We also included any additional verbs produced by the child during the experimental task in the spontaneous sample for that child. The types of errors performed were recorded on a separate column on the child's data sheet. Groups' size was controlled (8 per group) and the number of tasks was controlled across groups (three tasks presented in 189 pair of pictures in addition to a two minutes video-clip description and a story re-tell task). A simple descriptive statistics relying on reporting the mean performance for each age group was implemented using SPSS program.

Results

In spite of the fusional nature of the Arabic verb inflectional system, we found that children reported in this study showed a great ability to comprehend and produce the different grammatical aspects tested with few variations. Results obtained showed that, as early as the age of two, children produced and comprehended all verb inflections investigated with a different degree of success. Spontaneous task results were high

including G1 children (i.e. the age of two). All scores were above chance (i.e. above 50%). Various forms like أتعور /ʔatʕawwar/ ‘he was injured’, طاحت /Ta:ħat/ ‘she fell down’, نزلوا /nazalu:/ ‘they went down’, يروحوا /yeru:ħu:/ ‘they are going’, and شوفي /ʃu:fi:/ ‘look’(feminine) were produced in the spontaneous task even in G1. No absence of any of the investigated aspects was reported. However, we found few errors as a result of substituting one inflection for another. In all cases, the rate of these errors was low for all tested aspects in the spontaneous tasks.

Although spontaneous tasks revealed interesting results concerning tested children’s knowledge of the inflectional system of Hijazi Arabic, experimental tasks appeared to be more informative. A different picture was found concerning the children’s actual knowledge of the morphology of the verb in Hijazi Arabic. Not only did children find themselves in situations where no avoidance strategies were possible, but they were also set in a well-controlled task where each aspect was tested from a certain point leaving very limited space for the fusional nature of the language to affect the final results. The comprehension task revealed remarkable results. Children were found to comprehend verb inflections above chance from the earliest stages tested. The lowest reported score was 70% for gender and person in G2 in the comprehension task. Children showed great competence in distinguishing between a set of pictures describing أجلس /ʔažlis/ ‘sit down’ (singular masculine imperative) and أجلسوا /ʔažlisu:/ ‘sit down’ (plural imperative), نامت/na:mat/ ‘she slept’ (third singular feminine past) and نام /na:m/ ‘he slept’ (third singular masculine past), and حيطيح /ħayTi:ħ/ ‘he will fall’ (third singular masculine future) and طاح /Ta:ħ/ ‘he fell’ (third singular masculine past).

The experimental production tasks yielded more significant results. Children showed an amazing ability to inflect not only real but also nonce verbs with the different forms required, for example,

(1) Researcher: هادا يمسح وهادي ايش بتسوي؟

/ ha:da yemasaħ wa ha:di ʔeyʃ bitsawwi/

‘he is wiping(3SMPr) what is she doing?’

Child: تمسح

/timasiħ/

‘she is wiping’

(3SFPr).

(2) Researcher: هادا نقوله ليه مكشت وهادي ايش نقلها؟

/ha:da nigullu leyh makaʃt wa ha:di ʔeyʃ nigullaha/.

‘we say to this one why did you makasht (2SMP), what

do we say to this one’.

Child: مكشتي

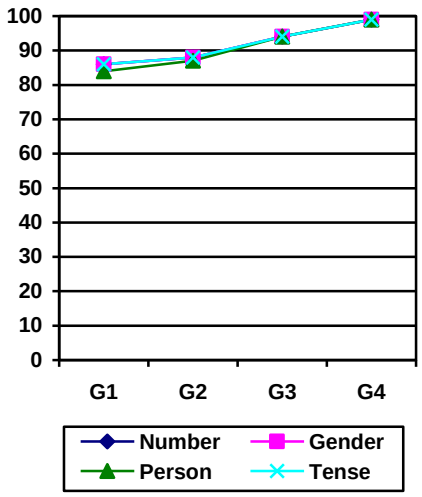
/makaʃti:/ (2SFP).

Although the rate of correct forms in production tasks was relatively low in groups one and two compared to spontaneous and comprehension scores, the nature of the task performed is to be considered. Most of the children tested (G1 and G2 in particular) were not used to being presented with a set of pictures. This might have affected their performance to a great extent. However, they were still able to produce some of the required inflections. Findings revealed their ability to produce almost all forms required but with low scores. This ability dramatically increased by the age of three when children started attending kindergartens and were exposed to similar material such as pictures and

stories. Additionally, a systematic developmental pattern across the four groups was observed. A marked shift is observed at the age of three for all aspects across the four tasks. The following figures present the results for all aspects across the four groups.

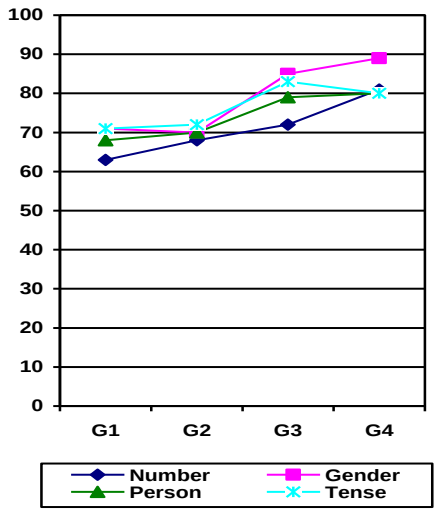
The first figure below clearly presents the high production level achieved by children in the four groups tested in the spontaneous task. As can be seen from the figure, children start producing all aspects above 80%. A slight systematic progress is observed across the four groups. All aspects seemed to be acquired equally well. Results are very similar for the four aspects so that the four lines in the following figure illustrating the four aspects appear on top of each other.

Figure 4. Spontaneous Tasks Results for All Aspects



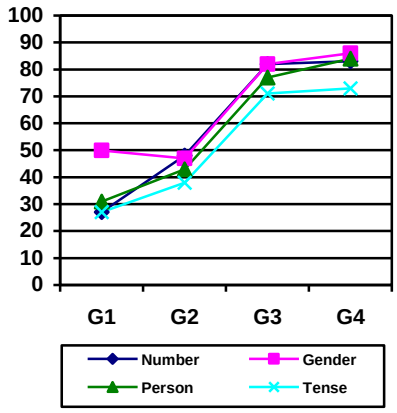
In the comprehension task, results were also found to be high (above 60%) for all aspects starting from G1. A systematic developmental line is observed across the four groups. However, gender is now observed to be comprehended better after the age of three.

Figure 5. Comprehension Task Results for All Aspects



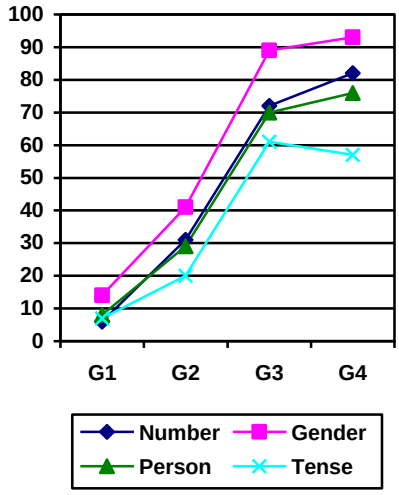
Real verbs production task revealed different results. Children started producing all aspects with low scores compared to the previous tasks but showed a remarkable shift by the age of three. After the age of three (i.e. G3 and G4) all results were above chance. In this task, gender is clearly seen among the best aspects to be produced across the four groups while tense is the most difficult form to be produced by the four groups. Unlike spontaneous data, differences between different aspects are observed.

Figure 6. Production of Real Verbs Task Results for All Aspects



Interestingly, nonce verb results are very similar to real verb results with the exception of a lower rate. All results start low and increase dramatically by the age of three, gender is the best aspect to be produced and tense the lowest.

Figure 7. Production of Nonce Verbs Task Results for All Aspects



Of the four tested aspects, gender is constantly among the highest followed by number and person while the lowest detected is that of tense which seems to be the most difficult aspect to be mastered. This can clearly be observed in production of real and nonce verbs tasks.

A number of studies that dealt with inflectional morphology in other languages such as Hebrew showed that number and gender are marked earlier (Levy 1983). Following is a more detailed description for each aspect investigated.

Number

In producing number inflections, spontaneous task findings showed that children start producing singular forms with a higher rate compared to that of plural forms. However, a noticeable progress for both genders is observed as they proceed. The remarkable progress is in plural forms. After the age of three, the singular and the plural are equally well produced. Similarly, in the comprehension task, children at their early stages appear to comprehend singular verb inflections with higher scores. After the age of three, plural starts to be comprehended better. Interestingly, production task findings show similar results. Children (as early as G1) produce singular and plural forms in real verb tasks. However, their performance is better in producing singular forms. Children, most of the time, find singular forms easier to produce than plural forms. For example, in talking about an action performed by more than one agent, they produced for:

(3) يلعبوا /yelʕabu:/ ‘they are playing’ (3PlPr) → هادا يلعب و هادا يلعب

/ha:da yelʕab wa ha:da yelʕab/

‘this one plays’ (3SMPr) and this one plays (3SMPr),

(4) ناموا /na:mu:/ ‘they slept’ (3PlP) → نام نام نام /na:m na:m na:m/

‘he slept’ (3SMP), ‘he slept’ (3SMP), ‘he slept’ (3SMP),

(5) رموا /ramu:/ ‘they throw’(3PlP) ⟶ رمى كله /rama kullu/ ‘threw all of them’ (3SMP).

But they also produced:

(6) Researcher: خرجت /xaražt/ ‘you went out’ (2SMP), singular

Child: خرجتوا /xaražtu:/ ‘you went out’ (2PlP).plural

(7) Researcher: تشوف /tiʃu:f/ ‘you see’ (2SMPr),singular

Child: تشوفوا /tiʃufu:/ ‘you see’(2PlPr). plural

And the nonce forms,

(8) Researcher: كرمس /karmas/ (3SMP), singular

Child: كرمسوا /karmasu:/ (3PlP). plural

(9) Researcher: يفرب./yefrub/ (3SMPr), singular

Child: يفربوا /yefrubu:/ (3PlPr). plural

The following figures present the scores for the singular and the plural across the four groups.

Figure 8. Spontaneous Tasks Results for Number

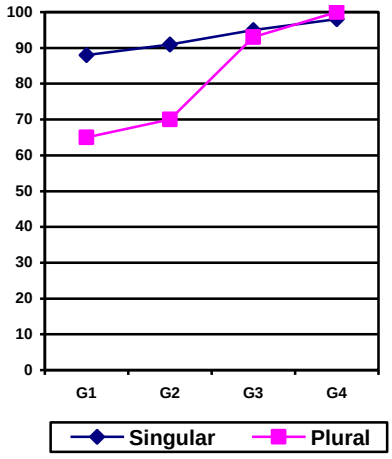


Figure 9. Comprehension Task Results for Number

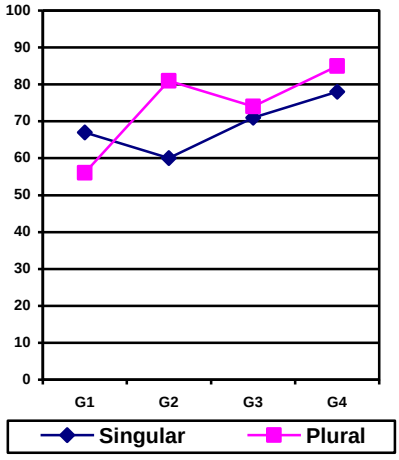


Figure 10. Production of Real Verbs Task Results for Number

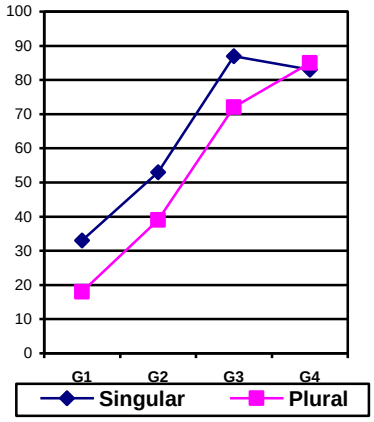
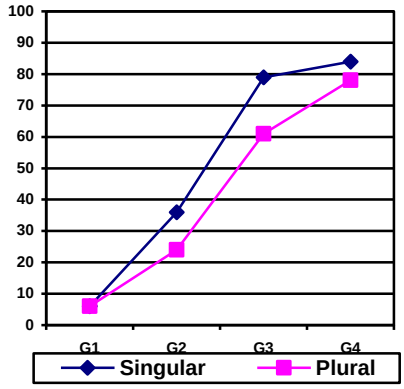


Figure 11. Production of Nonce Verbs Task for Number



Similarly, Pizzuto and Caselli (1994) found the singular to be acquired before the plural in Italian. Montrul (2004) found that children in her study start producing singular forms before plural forms in Spanish. Abdu and Abdu (1986) also found that singular inflections are used before plural inflections in Palestinian Arabic. In 2001, Aljenaie reported similar results in Kuwaiti Arabic.

Gender

Spontaneous task results showed that, from the earliest stages observed, tested children produced both masculine and feminine verb inflections with a similar degree of success. In the comprehension task, masculine is better comprehended in G1 but a strong emergence for feminine forms is observed in G2, G3 and G4. Production findings reveal similar results to those found in comprehension task results. In the nonce forms task, children appear to be more productive in inflecting masculine nonce forms. A great progress is observed later on but masculine is still better produced than feminine. Examples of children's correct performance on real and nonce forms for masculine and feminine are,

(10) Researcher: هادي نقلها ليه اخدتي البلونه، هنا ايش نقول؟

/ha:di: nigullaha leyh ʔaxatti:l ballonah/ /hena ʔeyʃ nigu:l/

'Here we say, "why did you take (2SFP) the balloon,"

what do we say here?' (Male).

Child: اخدت /ʔaxatt/ 'I took' (2SMP),

(11) Researcher: هادا سلح و هادي؟/ ha:da: salaħ wa ha:di:/

'This one salah (3SMP) and this one?' (Female)

Child: سلحت /salaħat/ (3SFP).

(12) Researcher: هادا يفلز وهادي؟

/ ha:da: yefluz wa ha:di:/

'This one will yefluz (3SMPr) what about this one?

Child: تفلز /tifluz/ (3SFPr)

(13) Researcher: هادا حيرجح وهادي؟

/ha:da: ħayerjaħ wa ha:di:/

'This one will yerjah (3SMFu) what about this one?

Child: حترجح /ħatiržaħ/ (3SFFu) and

Figure 12. Spontaneous Tasks Results for Gender

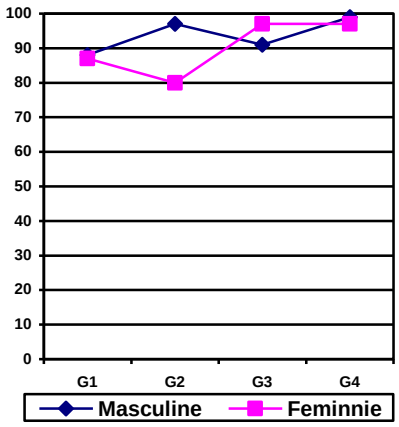


Figure 13. Comprehension Task Results for Gender

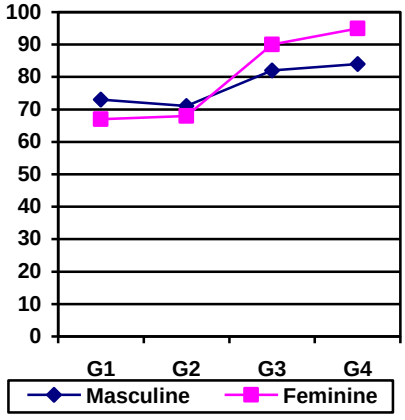


Figure 14. Production of Real Verbs Task Results for Gender

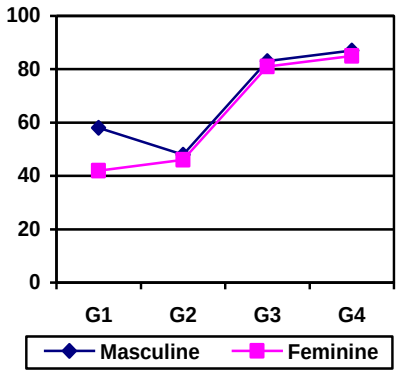
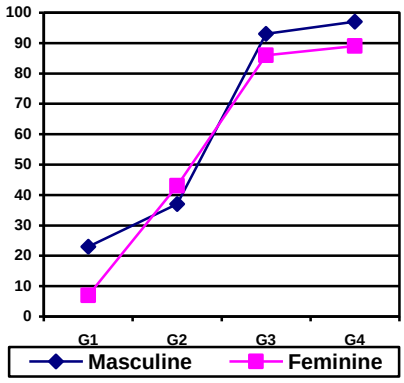


Figure 15. Production of Nonce Verbs Task Results for Gender



Results are similar to those reported in the literature. Teschner and Russell (1984), Harris (1991), Bruhn de Garavito and White (2000) and Socarras (2003) have reported that in Spanish, the masculine is found to be acquired first. In Hebrew, Levy (1983) found that children speaking Hebrew find difficulty in producing feminine forms while masculine forms appear earlier in their speech. Similar results are also found in Abdu and Abdu (1986) and Aljenaie (2001) on Arabic where masculine verb forms in Arabic appear before feminine forms.

Person

Spontaneous tasks revealed very high results for all person inflections. First and second person forms are better produced. However, the picture is different when the setting is controlled. In the comprehension task, third person is better comprehended followed by first person. In the production tasks, children produced third person verb inflections with higher scores across the four groups followed by first person and finally second person. Their performance improves as they grow older. The remarkable development is observed at the age of three. Examples are:

(14) ياكل /yakul/ ‘he is eating’ (3SMPr)

(15) أخدت /ʔaxatt/ ‘I took’ (1SP)

(16) أفكه /ʔafukku:/ ‘I open it’ (1SMP)

(17) نتفرج /nitfarraž/ ‘we watch’ (1PlPr)

(18) نتكلم /nitkallam/ ‘we talk’(1PlPr)

(19) قلت /gullt/ ‘I said’ (1SP)

(20) اشتريتوها /ʔaʃtareytu:ha/ ‘you bought it’ (2PlP) plural

(21) حتنزلي /ħatinzuli:/ ‘you will go down’ (2SFFu) and singular

(22) اكلتوا /ʔakaltu:/ ‘you ate’ (2PlP). plural

The following figures illustrate the developmental pattern for person across the four groups.

Figure 16. Spontaneous Task Results Figure for Person

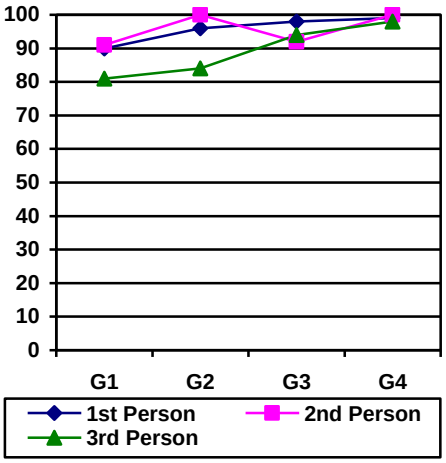


Figure 17. Comprehension Task Results for Person

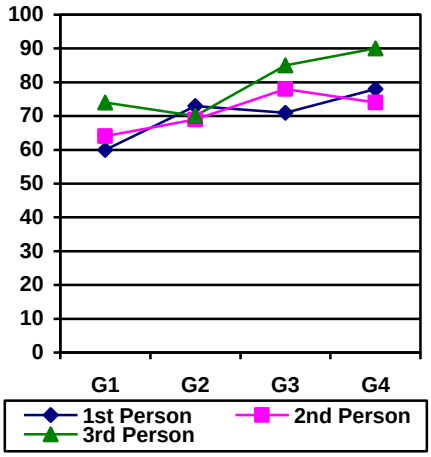


Figure 18. Production of Real Verbs Task Results for Person

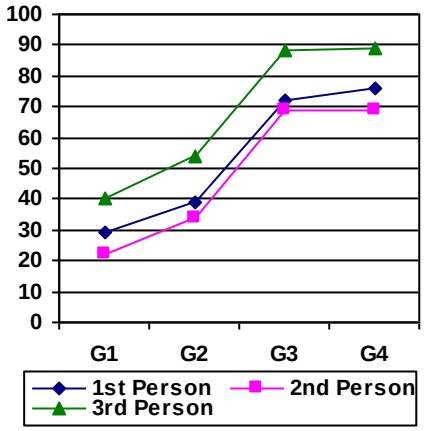
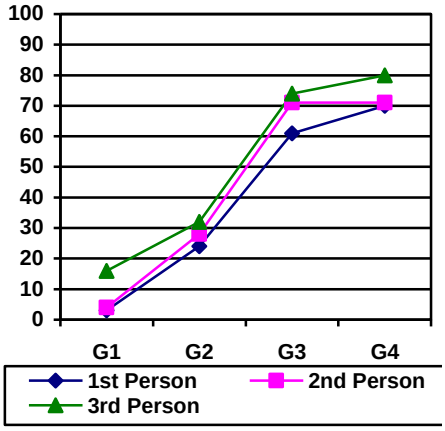


Figure 19. Production of Nonce Verbs Task Results for Person



Similarly, Abdu and Abdu (1986) reported that children produce third and first person inflections before second person inflections. Aljenaie (2001) reported similar results. In her study, children employ first and third person precociously while they have difficulties with second person.

Tense

In spontaneous tasks, all tenses were produced equally well. Slight differences are observed in G1 and G2 only where imperative forms were produced better and the future worse. However, in the experimental task, differences are more clearly observed between the different tenses in the four groups tested. In the comprehension task, all tenses were comprehended above chance; however, the past is the best tense comprehended and the future the worst. Production of real form findings reveal contradicting results, in which the past along with the future were produced with the lowest scores while present and imperative forms were produced with the highest scores. Nonce verb inflections were low in G1 and increase across the four groups. The great development is seen in G3. The present is the highest form from the beginning while the imperative improves greatly in G3. By G4, the present remains the highest produced and the future the lowest. Examples of the children's achievements on tense inflections are:

(23) Researcher: هادي اكلت و هادي دحين؟

/ha:di: ʔakalat wa ha:di: daħħi:n/

'This one ate and this one is now___?'

Child: تاكل /ta:kul/ 'she is eating' (3SFPr),

(24) Researcher: هادا حيطلع و هادا؟

/ha:da: ħayeTlaʕ wa ha:da:/

'This one will go up and this one?'

Child: طلع /Tiliʕ/ ‘he went up’ (3SMP) and

(25) Researcher: هادي مسكت و هادي بعدين؟

/ha:di: miskat wa ha:di: baʕdeyn/

‘This one caught and this one later’

Child: حتمسك /ħatimsak/ ‘ she will catch’ (3SFFu).

And the nonce forms,

(26) Researcher: هادا يقول انا دحين اركت، هادا خلص ايش يقول؟

/ha:da: yegu:l ʔana: daħħi:n ʔarkut hada xallaS ʔeyʃ yegu:l/

‘This one says I am arkut (1SP). This one is done. What is he saying?’

Child: ركّت /rakatt/ (1SMP)

(27) Researcher: هادا حم البزره و هادا ايش بيسوي؟.

/ ha:da: ħamm ʔal bizrah wa ha:da: ʔeyʃ biysawwi:/

‘This one ham the seed. What is this one doing?’

Child: يحم /yeħum/ (3SMPr).

(28) Researcher: يركش /yerkuʃ/ (3SMPr)

Child: ركش /rakaʃ/ (3SMP).

The following figures represent the developmental pattern for tense forms across the four groups.

Figure 20. Spontaneous Tasks Results for Tense

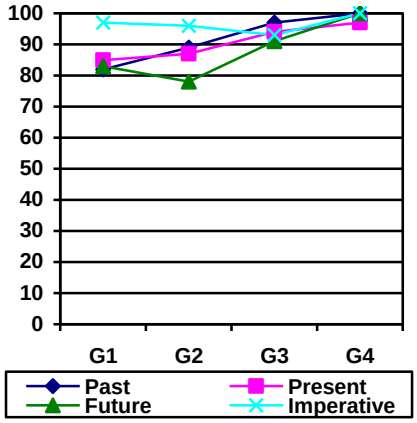


Figure 21. Comprehension Task Results for Tense

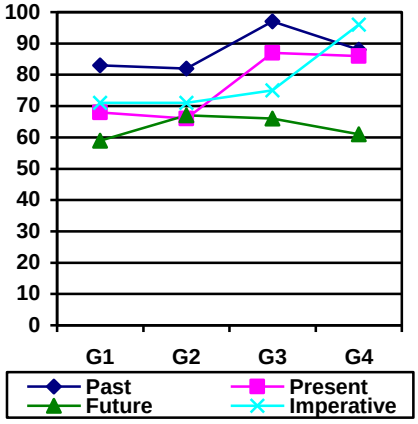


Figure 22. Production of Real Verbs Tasks Results for Tense

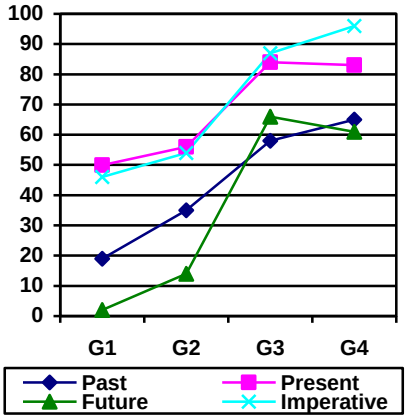
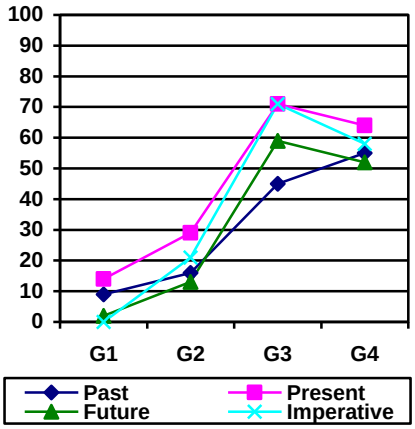


Figure 23. Production of Nonce Verbs Tasks Results for Tense



As a rule: do not separate a table from its title

These results are found to be similar to results reported in other studies dealing with English, Hebrew and Arabic. Brown and Fraser (1963) found that in English past forms are found to be more difficult than progressive forms. Akhtar and Tomasello (1997) reported similar results in English. Pizzuto and Caselli (1992, 1994) found that in Italian, the present appears before the past and the future. Berman (1985) found that in Hebrew, imperative forms are produced first followed by present and past while future appears last. However, little is reported on Arabic. Aljenaie's (2001) study reported an early emergence of tense contrast across the four children testes. Yet, she states that in her study, it is not possible to conclude which tense verb form appears first in the children's language.

Crosslinguistic studies on the acquisition of verbal inflections consistently found that children produce finite forms in a target like fashion (Poeppel and Wexler 1993 on German; Phillips 1996 on Germanic V2 languages; Borer and Rohrbacher 1997 and Torrens 1995 on Spanish and Catalan; among others). These results are taken as an evidence of the availability of functional categories in early grammar. Results found in this study are consistent with those found in English, Italian, Spanish, Hebrew and Arabic where verb inflections appear in the early grammar of children. These findings strongly support the availability of UG from the earliest stages of language development. Despite the complicated nature of the system, children speaking Hijazi Arabic in this study never produce forms that are not inflected for tense. However, rare instances are reported for the existence of forms like أنا خوف /ʔana: xo:f/ 'I am scared' where the verb is tense less. These forms are rare; other than that no absence of tense is observed.

Our results indicate the existence of an internal knowledge in relation to verb inflections in Hijazi Arabic-speaking children examined in this study. Children as early as the age of two comprehended and, to some extent, produced most of the forms of verb

inflections. Results also indicate the existence of a developmental pattern in the acquisition of verb inflections in Hijazi Arabic tested children.

Discussion and Theoretical Implications

The previous section has given evidence that grammatical knowledge of verb inflections exists from the early stages observed. Children tested are not only aware of the existence of the grammatical elements, as the comprehension's task shows, but also produce them all the time. Inflections are found to emerge early in the children's speech (at the age of two); low results are only found in groups one and two (i.e. before the age to three). Children before the age of three comprehend verb inflections greatly but have some difficulties in producing them. This may be attributed to other factors such as the phonological or the lexical rather than the morphological factors.

Moreover, consistency across the four groups plus similarities found between results obtained in this study and other results of different languages and dialects strongly indicate that the acquisition of verbal inflections is constrained by UG principles. Children appear to go through similar stages in acquisition, which indicates that language acquisition is the result of innate mechanisms specific to language development rather than general learning mechanisms. These findings support the view that for some aspects of morphology, the acquisition process operates on innate principles that predispose children to follow similar patterns across languages. Findings strongly support the Continuity hypothesis which predicts that children have an innate knowledge about the abstract elements of the language (i.e. they possess grammar from the beginning). The child's ability to comprehend such a complicated system at the early age of two can only be explained in relation to an innate knowledge possessed.

Conclusion

The speech of 32 Hijazi Arabic-speaking children ranging in age from two years to four years was investigated. Data was collected using two methods, experimental and spontaneous. Experimental tasks tested both comprehension and production. The comprehension task was performed using 63 pairs of pictures. Production tasks include two tasks: production of real verbs and production of nonce verbs. Each task contained 63 pairs of pictures. Spontaneous data was collected through two tasks: video-clip description and story re-tell.

Our findings indicate a high comprehension level for all tested aspects. Moreover, the scores obtained in spontaneous and experimental production tasks strongly imply the existence of inflectional morphemes in two years old children's speech. Our results support the view of the existence of UG that is available to the child from the very beginning. Findings also show that among the four different aspects, gender is acquired earlier followed by number, person and finally tense. Masculine forms are produced better than feminine forms, singular verb forms are produced better than plural, third person better than first or second and finally, imperative and present are acquired before past which is acquired before future. These results are found to be consistent among the four groups with very little variation.

About the author:

My name is Fatima Mahmoud Basaffar. I hold a PhD in linguistics from King Abdulaziz University. My main interest was psycholinguistic and I did a study on the *Acquisition of Verb Inflections in Hijazi Arabic as a First Language*. I soon became interested in how learners come to master a new language. In order to broaden my perspective and to enhance my knowledge in this area, I joined an online program for Teaching English as a Second/Foreign Language and started my career life at KAU. Furthermore, research has always been of interest to me and I've participated in few conferences and projects related to language

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