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THE ACQUISITION OF ENGLISH SYNTAX BY FOUR ARABIC-SPEAKING CHILDREN

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ABSTRACT

THE ACQUISITION OF ENGLISH SYNTAX BY FOUR ARABIC-SPEAKING CHILDREN

By

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Studies of the acquisition of English as a second language have been intensively conducted on children of various language backgrounds. Arabic children, however, have received little attention regarding their acquisition of English syntax in a natural environment. This research has, therefore, been carried out to study the process of second-language acquisition by Arabic children in kindergarten and first-grade classrooms, where no formal English instruction was given. In these two classrooms, four Arabic children, ranging in age from six to seven years, were observed for five weeks. Observations were then continued out of school for an additional eight weeks.

Four major issues were considered in this study: (1) the developmental stages that the four children would go through in acquiring English syntax; (2) the children's learning process in comparison to that of other first- and second-language learners of English;

(3) the extent of interference from their native language; and (4) the communicative strategies the children employ to compensate for language deficiencies.

The principal means of collecting data was through recordings of the subjects' free spontaneous speech, and through the use of three standardized tests: (1) elicited imitation tests; (2) translation test; and (3) Berko's morphology test. Tests one and two were given three times throughout the study period and test three was given at the end of the study. Three areas of syntax were analyzed in depth to assess the children's syntactic development. These were negation and question formation involving particular aux constituents, and the acquisition of morphological rules.

It was found that the four children showed significant development in English syntax acquisition during the study. The rate of progress of one subject was substantially different from the others. All children, however, showed similar stages of acquisition to those found in first- and second-language studies. Also, there was no marked interference from the children's first language (Arabic) in their process of acquisition. The subjects used different communicative strategies such as repetition and intonation, gestures, noises, simplification, and imitation to compensate for their language deficiencies.

DEDICATION

To my mother with love

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CHAPTER I

INTRODUCTION

It is a universal phenomenon that children learn to speak in a relatively short period of time, and during the years when their conceptual and reasoning capacities are as yet undeveloped. According to Lenneberg (1967, p. 67), the ability to speak "is so deeply rooted in man that children learn it even in the face of dramatic handicaps." Generally, the ability to speak occurs with no formal instruction. The nature of this process and how it takes places is an enigma and has aroused the interest of various linguists and psycholinguists in the last two decades.

It is noteworthy that in the 1960s, theories about the structure of knowledge the child must have in order to acquire knowledge have led to theories of how the child actually learns a language. The general trend of language acquisition in the last twenty or more years has been established on the theoretical assumption that there are underlying basic similarities of all languages in structure and organization. These similarities are

called linguistic universals, and they are really "innate mental endowments" rather than the results of learning. Further, these linguistic universals[1] guide language acquisition which follows sequential, consistent patterns of development (Chomsky, 1965).

Therefore, theoretically speaking, in the 1960s, second-language learning was considered to be essentially similar to first-language[2] learning. This assumption made it possible to investigate and discover the developmental trends of both L_1 and L_2 learning processes.

A great deal of research has been conducted to analyze children's L_1 acquisition process. In the United States, much literature has accumulated on the developmental syntax of English as a first language. The circumstances surrounding children's L_2 development are clearly different from those surrounding their L_1 development. As a result, research findings on the developmental syntax of English as a first language have been considered as being of little asset in understanding the acquisition of English as a second language (Huang, 1971). Also for this reason, L_2

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[1] Although not related to this study, they are mentioned as historical background only.

[2] These will be mostly referred to as L_1 and L_2 for abbreviation.

acquisition has been intensively researched in the last twenty years.

Acquisition studies on L_1, however, have revealed that not only speaking is itself universal, but the onset of speech takes place at about the same time in all children's development. Also individual children follow similar developmental stages while acquiring their native language (Slobin, 1967). In addition, L_1 acquisition studies have shown that there is some type of sequence in the acquisition of certain English morphological and syntactic features (Berko, 1958; Brown, 1968 and 1973; C. Chomsky, 1969).

It is important to note that these studies described child's language development in terms of linguistic theory[1] (Chomsky, 1957). Similar studies of L_2 development were also followed (Adams, 1974; Cancino et al., 1978; Trosborg, 1982). Most of the L_2 studies showed that children as well as adults go through a similar process when acquiring a second language in a natural situation, i.e., when learners live in the second-language community. Most importantly, despite differences between L_1 and L_2 learning, researchers have shown that the L_2 acquisition process

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[1] This line of research in L_1 continued until the early 1970s; thereafter, a shift in the literature occurred, as will be seen in Chapter II.

is the same as the L_1 acquisition process. This will be discussed in detail in Chapter II.

This study investigated the acquisition of English syntax by four Arabic-speaking children. It is a study of bilingual development, beginning after a native language has been acquired. It has been derived from studies of L_1 learning in native-speakers, especially English-speaking children, and of L_2 learning (in children and adults).

Purpose of the Study

Many major issues relating to children's language capacity and their adding a second language have been addressed in most L_2 acquisition studies. This study is directed at a number of topics selected on the basis of those issues. The study investigates the syntactic and morphological development of four Arab children when acquiring English as a second language in a natural situation, where there is no systematic instruction of English. The purpose of this study is to answer the following questions:

1. What particular aspects do Arabic-speaking children learn in the process of acquiring English syntax as a second language?
2. What stages do they pass through in acquiring English syntax?

3. Does acquisition of English syntax occur in a developmental sequence?
4. Is there an ordered sequence of stages?
5. Do the acquisition stages found in the study replicate those given in other first- and second-language acquisition studies?
6. What communicative strategies do the subjects employ throughout the learning process?
7. To what extent do they rely upon knowledge of their native language?

In order to answer the above questions, it was necessary to make collections of the Arab children's spontaneous speech samples. Elicited speech samples were also collected by employing various testing procedures. All the samples were organized once collected. The study was conducted on the four subjects in their classrooms (kindergarten and first grade) in a university community elementary school. Observations were also made outside the school (at the children's homes, and sometimes in a playground) by arrangement with the children's parents.

Specific English Syntactic Areas of Study

Based on English syntactic structures which have been investigated in related first- and second-language acquisition studies, such as Berko (1958), Ravem (1975),

and Adams (1974), certain English syntactic areas were selected for examination. For this purpose, it was still necessary to collect as much of the children's speech as possible in order to enable the examination of any aspects needed for this study. Therefore, the following syntactic aspects were investigated in this study:

I. The acquisition of the English auxiliary systems and the variations involved in two different types of sentences. These are:—

   1. Negative structures
   2. Interrogative structures consisting of Yes/No questions and WH-questions
   3. Auxiliary constituents; tense copula "be" constructions, modals, progressive -ing, perfective -en, present tense and verb, past tense and verb.

II. The acquisition of English morphological rules, including inflectional endings (the formation of plural nouns, third person singular, singular and plural possessives, the progressive past tense, the comparative and superlative of adjectives, the diminutive, and word derivations and compounds).

Significance of the Study

A great many studies in first- and second-language acquisition have been undertaken to determine the grammatical characteristics of language used by children in various stages of development. These studies made it possible to describe children's language development with a high degree of accuracy. This study replicates and analyzes the development of certain grammatical structures used by Arab children learning English as a second language.

This observational study is important for many reasons. It can be considered as among the very first studies, if any, conducted on Arabic children. In fact, through a continuous inter-library search for published or unpublished studies in this regard, the researcher could not find a solid evidence of similar studies on Arabic children. Only a few studies (Hanania, 1974; Heckler, 1975; Larsen-Freeman, 1975; and Waterbury & Tucker, 1978) have been conducted on the acquisition of English syntax by Arabic-speaking adults. The fact that there is a need for basic research on Arabic-speaking children learning English as a second language in immersion gives this study significance.

In addition, second-language acquisition studies in an immersion situation that includes subjects from various language backgrounds might shed new light on ESL

instruction. ESL teachers can always benefit from new information on second-language acquisition because the more they know about second-language learning, the more likely they are to be successful in their teaching of English as a second language.

Research findings on developmental syntax of English as a second language could be a great asset to ESL teachers. These findings might reveal the best possible conditions for teaching English as a second language. It might also identify L_2 learners' difficulties with certain syntactic areas. This may enable ESL teachers to adjust their curriculum and encourage the use of textbooks designed to emphasize these areas.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

In this chapter, a thorough review of previous studies on first- and second-language acquisition aspects has been made, in relation to the present study. Since there has been an extensive literature on first-language acquisition, only pioneer studies on this part which led to similar analyses of second-language acquisition will be emphasized here.

Literature on First-Language Acquisition: A Survey of Developmental Syntax

Prior to 1950, most researchers were interested in carrying out language normative studies of children. The data were collected for the most part by a linguist or psycholinguist parent who observed his child's (or children's) language progress. These studies established certain characteristics of the "form" of children's speech. The main result was the observation and the specification of developmental stages in the language produced by children. Because there were quite a few of these studies during the 1950s, they allowed

comparison among individual children or groups of children who varied in age, social class, and so on. Several normative studies have become "landmarks" in the literature, such as Leopold (1939-1949) and Grégoire (1971).[1]

After 1950, there has been a dramatic change in the research of child language development, particularly in the questions being asked. With the advent of the theory of Generative-Transformational Grammar (Chomsky, 1957), investigators such as Berko (1958), Brown and Bellugi (1964), and others began to inquire into the knowledge that underlies the ability to speak and comprehend, that is, "The productive system . . . that the child employs in the creation of new forms." Most important, given the language data, these researchers abandoned descriptions of the form of speech in an effort to discover the grammar of the child, and to describe the change of the rule systems over a period of time.

The children in these studies were observed either in a few sessions or over a long period of time (for up to several years by Brown and his colleagues). The data were collected by recording the child's utterances in the classroom or at home at periodic intervals.

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[1] These normative studies are indeed irrelevant to the present study, and will not be reviewed here. A more comprehensive review of these studies is in McCarthy, 1954.

Transformational-generative grammar rules were then written for the data. Spontaneous speech analyses, however, soon proved to be problematic. Such as that ". . . Children sometimes understand and produce a structure but that no occasion arises during the observation period to record it" (Hatch, 1969, p. 5).

This required the development of new methodology and research techniques of data collection. Tests, for example, were devised to evaluate the linguistic competence of the child by eliciting structures as evidence of rule acquisition (Berko, 1958). These studies revealed that what the child learns is an "underlying linguistic system" which is never consciously available to the child or the adult. They also strongly indicated that early syntax is "a systematic reduction" of adult forms and even the earliest sentences were produced in an orderly, predictable manner. Although there were important individual differences, the process of language acquisition was nonetheless the same for all children.

In summary, after 1950 the literature on child developmental syntax was concerned with describing the grammar of children. The studies were of two types: a) observational, based on collecting the child's speech data in a natural setting, and b) experimental, based on eliciting the structures from the child. For the

purpose of this study, we now turn to a review of the most important of observational works, which considered morphological rules, and the auxiliary verb system involving negation and question pattern development.

Observational Studies

The best known of the observational studies is the pioneer longitudinal study of the Brown group at Harvard University in 1962. Roger Brown, Ursula Bellugi-Klima, Colin Fraser, and several other linguists studied first-language development of three children (Eve, 18 months; Adam and Sarah, both 27 months), particularly the development of grammar after the emergence of syntax in the child's two- and three-word utterances. The children were periodically recorded for several years. Data gathered have been discussed in several research reports since the early 1960s. Most of the analyses, however, on the three children's acquisition of English syntax were within the framework of transformational grammar. To write rules for the data, samples of the NP, negative sentences, question sentences, and so on, were abstracted from all of the tapes. Another important research was conducted at the same time by Ervin-Tripp (1964), which will be mentioned later.

Brown and Bellugi (1964), in their report on the NP section of the data, noted that Adam used plurals

eight months before the |-s| of the third person singular verb, and long before the possessive |-s|. Ervin-Tripp (1964), in her study of seven children, showed that they learned the singular-plural contrast between the ages of 2 and 3 years. None of them, however, used the adult plural form with words ending with a sibilant. For example, the |-iz| plural form was omitted for words like "glass". And when the |-iz| plural first appeared, it was in free variation with the |-s| and |-z| plurals.

Ervin-Tripp, in the above study, also discussed the children's development of the past tense. The children learned the irregular past forms first. Next they produced the regular past rule and began generalizing it for the irregular verbs. That is, "did", "broke", "came", and so on, were produced first, then later "did - doed", broke - breaked", "came - comed", were observed in free variation. These findings will be compared in Chapter IV with the morphological observations of the present study.

Klima (1964) and Klima and Bellugi (1966) reported on negation and question pattern development of the three children's data (Adam, Eve and Sarah). In the study of negation, they proposed that children's earliest negatives occur as one-word utterances; for example, "no" or "allgone". The negative pattern begins as "neg + nucleus", or "nucleus + neg". In general, it starts

by placing a negative marker (such as "no" or "not") outside of a simple sentence, with the negative markers appearing inside of the sentence subsequently.

Klima (1964) described the negation pattern in three developmental stages. During Stage 1, the children produce multiple-word negative sentences with the negative particle (generally, "no") placed outside the utterance; for example, "no play that", "no Mommy go", "not cowboy", and "more no".

Children's utterances at this stage are of limited structure. They consist mainly of nouns and verbs without indication of tense or number. There are no negatives, or auxiliaries within the sentences. Negation is signalled by using the negative element "no" or "not", which either precedes or follows the rest of the sentence.

Klima and Bellugi (1971) further argued that:-

> At this stage, there is no clear evidence that the child even understands the negative embedded in the auxiliary of adult speech, without at least some reinforcement. . . . What is interesting in the speech of the child at this stage is that he employs extremely limited means for negative sentences in his own speech, and the same system is repeated in all three subjects. (p. 418)

In Stage 2, the negative element is moved into the sentence and such forms as "can't", "not", and "don't" are found within the utterance. Some examples are "That

no Mommy", "I no taste them", "That not blue", and "I don't want it".

These negative elements are not full auxiliary verbs because they lack inflections and flexibility. Moreover, the auxiliary verbs occur in the children's utterances only when accompanied by a negative. They do not occur in affirmative sentences or questions at this stage. The auxiliary verbs occur only in negative appropriate contexts, and in limited forms such as "can't", "don't", "not", and occasionally "no". The negative element is also found within the sentence, but not connected to an auxiliary verb, as in "He no bite you".

In addition, some negative imperative utterances appeared in the speech of all three children at this stage, such as "Don't leave me" or "Don't wait for me". Also, affirmative imperatives as in "come here" and "do it" are found at this period.

In general, children's utterances at Stage 2 are clearly more complete than those at Stage 1. They contain more of the elements of full sentences. The major change, however, is that the negative element is internal, rather than external to the sentence preceding the predicate or verb-phase.

Bellugi (1965) suggested that at this stage the adult auxiliary system has not yet been established. Children's negative sentences with "don't" and "can't"

are not based on "Aux + neg" form, but rather are alternative ways for saying "not".

At Stage 3, the use of modal auxiliaries, copula and "do" appeared in a greater variety of forms and in both negative and affirmative utterances. For example:

I didn't see something.
You can't sit down by me.
He won't talk (modal).
I not a doctor (be).
Don't touch that fish.
I not hurt him.

At this stage, it is shown that the neg auxiliary verbs are no longer limited to "don't and "can't". They also appear in declarative sentences and questions. Most important, the auxiliary verbs are now constructed from an "Aux + neg" adult form.

Klima and Bellugi (1971) also described characteristics of three stages in the development of children's question forms. Both Yes/No and WH-questions occurred during Stage 1. They were indicated only by rising intonation on an echo question; for example, "ball go↗", "see hole↗", and "no car↗". As with the negative in the same period, there is very limited structure to the question construction at Stage 1. They also are restricted in variety, particularly WH-questions which are so limited both in content and in form. Klima and Bellugi described this stage as follows:

> At this stage, then, the children are producing questions that only superficially resemble these questions in which the object of a verb has been questioned and preposed and they do not understand this construction when they hear it. (1971, p. 421)

During Stage 2, some of the children's questions are:

You want eat?
Where me sleep?
What the dollie have?
Why you waking me up?
Why not me can't dance?

Children's questions are little changed in the superficial structure from Stage 1. They include a greater variety of things. There are, however, no modal auxiliaries in affirmative sentences, and only two negative modals ("don't", "can't") appear in some negative questions, such as "You can't fix it?". Klima and Bellugi (1971) suggested that children at Stage 2 are not really using true auxiliary verbs. And there is no inversion of auxiliaries with the utterances' subjects. In short, there is little real development in forming questions.

At Stage 3, a major development occurs in the question structure of children's speech. A great variety of auxiliaries appear in Yes/No questions. The auxiliary component is appropriately inverted with the subject noun phrase. In addition, modal auxiliaries occur in affirmative sentences. In WH-questions, however, children generally do not invert the auxiliary with the

sentences' subjects; for example, "What he can ride in?" or "How they can't talk?". Stage 3 WH-questions are not yet as close to adult forms as is the case for Yes/No questions and negative statements.

In summary, Klima and Bellugi's studies on child L_1 learning indicate that the developmental process of negative and interrogative patterns follows three similar stages. In Stage 1, both patterns are of limited structure consisting mainly of nouns and main verbs, with no indication of tense or number. There are also no auxiliaries within the sentences. At Stage 2, no real development occurs in negative and interrogative patterns. Children in both patterns do not use true auxiliary verbs. In addition, there are no modal auxiliaries in affirmative sentences or questions at this stage. Only the two negative modals "don't" and "can't" appear in negative appropriate contexts and in some negative questions. In Stage 3, negative statements and Yes/No questions are close to adult forms, but WH-questions are not yet close to adult form. The children at this stage use true auxiliary verbs. A great variety of modal auxiliaries appear in negative, affirmative utterances and in questions. For example, the negative modals are no longer limited to "don't" and "can't." They also appear in declarative sentences and questions.

Brown (1968) also reported on the same data for the question forms and described three stages of development. His analysis, however, differed in that questions prior to Stage 3 were regarded as "fixed forms rather than productive constructions." The child, for example, has heard "What's this?" hundreds of times. Therefore, WH-questions (such as "What dat?") can best be described as a list of a few "routines" or "formulas" which do not need a rule. Negative and interrogative studies, described so far, will also be compared in Chapter IV to what has been found in the present research.

Generally speaking, the main argument of the Brown group, in particular (Brown & Bellugi, Klima & Bellugi, et al.), is that the acquisition of language cannot be adequately explained by imitation and generalization. The language of a child is also more than a mere reduction of adult speech. The child, when acquiring the language, inducts structure in his continuing search for the rules of English. Even the earliest two-word utterances can be described as rule-governed, and Brown and others concur on what the rules are.

It is noteworthy, however, to point out that the universality of the Klima and Bellugi stages has been questioned even in first-language learners. For example, Bloom (1970) and Lord (1974) failed to find evidence for Stage 1 in the subjects.

Also, Huxley (1966) discussed the Klima and Bellugi report. She emphasized that the results of the longitudinal study being conducted at Edinburgh revealed quite different rules and stages for the negative and question structures. Moreover, Huxley argued that writing rules only elevates the status of the data on which they are based and that such rules cannot be a serious report of the child's language competence.

Brown (1973) provided findings about his original three subjects, Adam, Eve, and Sarah, from a long-range perspective. He made numerous references to longitudinal and experimental studies by other people, many of whom researched languages other than English. Brown compared Cazden's (1968) description of the morphological development in the speech of Brown's three subjects, with other studies in the literature on the morphological acquisition of children in the same age range. Brown claimed that different children generally appear to develop English grammatical morphemes in a roughly invariant order, as follows: present progressive, in, on, plural, irregular past, possessive, uncontracted copula, articles, regular past, regular third person, and contracted auxiliary. The sequence was revealed by a procedure where the morphemes were scored for their suppliance in obligatory contexts (see Brown, 1973:255 for a discussion of this construct). De Villiers and de

Villiers (1973) substantiated this finding in a larger cross-sectional first-language sample. It is noteworthy to mention that Brown's basic objective was to find universals among all first-language learners. Similar analyses of the acquisition of English morphemes as a second language were followed by others, and will be reviewed in the L_2 literature. This order of morphological acquisition will also be examined in Chapter IV with regard to the subjects' learning in the present study.

Bloom et al. (1975) significantly challenged some of the Brown's (1970, 1973) findings on language acquisition. Bloom took these studies and added "function" as a primary interest. Not only what is said but what is meant must be taken into consideration when analyzing the child's language. Bloom (p. 5) explains that "Mommy sock", at the two-word stage, operated in different semantic circumstances: as possession ("Mommy's sock") and as an actor-agent ("Mommy is putting the sock on"). In addition, Bloom studied the function, as well as the form, by making specific observations of the speech contexts. Results revealed that there is much more variance in learning strategies than had previously been supposed. Bloom's findings "would cast some doubt on the view of language development as the same innately preprogrammed behavior for all children" (p. 227). An

adequate analysis of language development must consider the interaction of linguistic experience with non-linguistic experience and cognitive growth (p. 231).[1]

Experimental Studies

Jean Berko's study (1958) is considered the best known of experimental studies, whose standard morphology test has been adopted in other L_2 investigations including the present one. In her research, Berko tested production rather than comprehension. The students ranged in age from four to seven years. Berko devised a morphology test to examine the internalization of all the morphological inflections of English syntax. She used nonsense content words and appealing pictures to elicit examples of the morphology rules. Berko found that although the child knows most of the rules, he still has problems with certain rules. For example, the

[1]In fact, at the beginning of the 1970s, a major shift in the line of research on child language was started by Bloom. The shift changed the direction from the description of child's grammar development in terms of linguistic theory to the explanation of language development in terms of cognitive theory (that is, in terms of the relation between form and meaning). This kind of approach "led in the 1970s to the virtual cessation of any attempts to examine children's L_1 with formal grammar" (Ingram, 1981).

Since Bloom's shift, many scholars have followed his line, which is irrelevant to the present study and therefore will not be mentioned here. Should the reader be interested in that line, reference can be made to Bloom et al., 1975; Braine, 1971; Maratos, 1978.

percentage of correct plural forms for nouns supports Ervin's (1964) statement that chidlren have trouble with the |-iz| plural allomorphs (at least with nonsense samples). Correct plural allomorphs were given (80% to 90% range over the age span) for the |-s| and |-z| plurals but only 28 to 36% correct responses were given for the |-iz| form. The children's rule seemed to be to add |-s| or |-z| unless the word ended in |s z š ž č ǰ|. To words ending in these sounds they added nothing to form the plural, and when asked to make a plural they repeated the stem as if it were already in the plural.

The same problem with the final |-s| was evident in the data on possessives and third-person singular present tense. Berko's analysis of the past tense allomorph also agrees with Ervin's report that the |-t| and |-d| allomorphs are much easier for the child than the |-id| form. For the progressive -ing, 90% correct responses were obtained.

Results also showed that children have great difficulty with derived forms, particularly the comparative (-er, -est). The diminutive affix "wuggy" was not used by any child. A compound substitute "baby wug" was provided instead. No child used inflected adjectives derived from nouns. For example, "a dog with a quirk" was "a quirk dog" rather than "a quirky dog".

Fraser, Bellugi and Brown (1963) devised an "imitation" experiment to test individual children's ability to imitate certain syntactic features which could not be produced on the child's own. Their experiment was also used in the present study. The "imitation test" consists of model sentences carefully designed to reflect the range of sentence types typical in child's speech. The model sentences also vary in regard to grammatical form, intonation, stress patterns, and length. In addition, the major sentence types and syntactic processes of the English language are included, such as affirmative, negative, imperative, yes/no questions, negative questions, and so on. The sentences also sample major grammatical categories such as tense, mood, and aspect (Slobin, 1971, p. 22).

C. Chomsky's (1969) original experiments on the acquisition of a set of complex structures (easy/eager to see, tell/promise, ask/tell) by English-speaking children will be cited here. This is because it was replicated by recent L_2 acquisition studies, one of which included Arabic-speaking adults. These studies confirm that L_1 and L_2 acquisition processes are similar in some aspects which will be discussed later.

C. Chomsky's experiment tested the children's ability to discriminate between sentences such as:

(a) "John is eager to see"; and (b) "John is easy to see." These sentences have similar surface structures, but the underlying relationships between the words are different. Sentences such as in (b) deviate from the general structural rule of English and their surface structure is relatively inexplicit with respect to the underlying grammatical relationships. C. Chomsky found that such sentences were acquired late. In general, the child learns to apply the linguistic processes in the simpler cases first and only then proceeds to use them in the more complex cases. C. Chomsky's data also seemed to reveal interesting language learning strategies. For example, beginners tended to rely on semantic rather than on syntactic information when interpreting ambiguous sentences.

In conclusion, pioneer studies on first-language acquisition which are related to the present research have revealed that individual children follow similar stages of development in the process of learning their native language. These studies have also pointed out that there seems to be some type of sequence in the acquisition of certain English syntactic and morphological features. Literature on L_2 acquisition will be reviewed in detail next.

Literature on Second-Language Acquisition

The present study looks at bilingual development, beginning after a native language has been acquired. Therefore, studies of second-language acquisition are especially relevant here. A great many of these studies focus particularly on the bilingual environment in which the child must be able to communicate in two languages: one for home use and one for school use.

Second-language acquisition syntax has been intensively researched in the last twenty years. Among the more useful works are: Vallette (1964), Kneisner (1967), Thornhill (1969), Ravem (1968, 1975, 1978), Huang (1971), Butterworth (1972), Cathcart (1972), Chamot (1973), Dulay and Burt (1973, 1974), Adams (1974), Young (1974), Hakuta (1974), Wagner-Gough (1975), Rosansky (1976), Krashen (1977), Cancino, Rosansky, and Schumann (1978), Waterbury and Tucker (1978), Wode (1978), Trosborg (1982), and Beniak (1984). These studies are particularly relevant to this study because they are observational studies on second-language development. (The subjects of most of these studies were children who learned a second language naturally and were not taught syntax systematically). (They all had similar learning environments where the second language was dominant everywhere except in the home.)

It is believed that reviewing the above mentioned studies, along with a summary of conclusions at the end of this chapter, will answer the main controversial questions that are considered in this study. These questions will focus on the similarities and differences between L_1 and L_2 acquisition processes as well as the nature and amount of transfer from the native language.

Vallette (1964) published a cursory examination of her four-year-old son's natural and undirected acquisition of French in Paris. English was maintained at home while only French was spoken at the nursery school. Vallette found that after a daily nine-month immersion in French, in a school situation, the child had only acquired the proficiency of a three-year-old in his new language. She further concluded that the manner in which the young child learned grammatical forms supports the theories of pattern practice and structural linguistics. Although good data were obtained in Vallette's study, a better conclusion could have been drawn if the data were not analyzed in terms of structural linguistics, since the pattern practice has been thoroughly discredited.

Kneisner (1967) investigated the process of acquiring English by a young adult French-speaking Swiss girl, without the aid of a structured linguistic instruction.

Basically, Kneisner observed the behavior of an adult engaged in learning a second language. Data were gathered through a series of taped questions and answers. It was then analyzed transformationally. Kneisner showed that an adult, learning English as a second language, in an immersion environment, used base structures in a way similar to that of a child learning his native language.

Thornhill (1969) did observational research with young adults. His study was a quantitative examination of the development of syntactical fluency of four Spanish-speaking adults learning English while living in the United States. When compared to similar data from native speakers, the subjects showed striking similarities in development, syntactic repertoire, and acquisition trends. Based on the data, Thornhill rejects any notion of formula learning and habit formation, and suggests a system similar to that of first-language learning.

Ravem (1968, 1975, 1978) conducted several studies of his two Norwegian children's acquisition of English syntax in a naturalistic setting in Great Britain. When the study began, the two children were six and a half years and three years-nine months old. The studies were longitudinal-observational and conceived within the framework of first-language syntax studies by Brown and

his colleagues, particularly Ursula Bellugi. Data were collected from free conversation, imitation and translation tasks.[1] The structures that Ravem examined were negatives, interrogatives, and the development of the auxiliary constituents. He compared some of his results to Klima-Bellugi's (1966) description of negation and interrogation in English-speaking children. Ravem found similarities in the developmental sequence and stages of negative and interrogative patterns.

Ravem's significant finding was that ". . . the more closely two languages are related, the more there is which can successfully be transferred. There is much in the development of my informants' English which must be viewed as transfer, in the sense of an active use of L_1 knowledge" (1978, p. 153). Ravem's findings will be compared with those obtained by the researcher.

Huang (1971) examined the acquisition of English syntax (particularly the development of interrogative structure) by a five-year-old Taiwanese boy during a nineteen-week period in a nursery school. His study constitutes an outstanding analysis of the strategies used in learning English as a second language. Huang's data showed that the child had two major learning stategies: he could use a well-formed adult sentence

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[1] A translation test was also used in the present study on the basis of Ravem's test.

which he had learned as a single unit through mere imitation, and he could combine, in his own way, words he had learned to make an original sentence; namely, the strategy of sentence imitation and the strategy of his idiolect syntax.

Huang further claimed that the subject tended to figure out the meaning of English utterances in terms of his first language, but there was no evidence that he depended on his native language in learning English syntax. The subject's performance had the characteristics both of a child learning his first language and of an adult learning a second language.

Hatch (1972) studied Huang's data and discovered a number of other strategies employed in language acquisition. One involves sentence and topic expansion which resembles teacher-student, classroom expansion drills; for example, "This ice cream. This is ice cream" and "Boy. This is boy". The other strategy Hatch labels "drill practice play" which resembles a simple substitution drill. Huang's subject used this strategy only when addressing himself; for example, "This is telephone. This is whistle", or "Open the door. Open the window" (p. 32).

Butterworth (1972) did a longitudinal case study of a thirteen-year-old Spanish-speaking boy learning English in a natural environment in California. He

observed the boy's speech over a three-month period. Butterworth investigated a number of syntactic areas: copula construction, prepositions, pronoun selection, negative structure, interrogative structures, and so on. He discovered that his subject's learning resembled that of child first-language and child second-language acquisition. Butterworth also noted that the subject's need to communicate as an adult allowed transfer from his native language. In addition, the boy simplified his English by eliminating certain inflections and function words and even verbs if context conveyed meaning. Butterworth concluded that such a "simplification" strategy may be universal to all language learners.

Chamot (1973) carried out a case study on her ten-year-old son's acquisition of English morphology syntax over a nine-month period. He was bilingual in Spanish and French. He was learning English as his third language at a school in Austin, Texas. The study began one month after his arrival in the United States. Chamot relied significantly on contrastive analysis to explain her son's errors while acquiring English. She also investigated developmental-error rules of the learner as he acquired more accurate structures. Some particular English structures were difficult for him to master. These difficulties were attributed to interference. Chamot concluded that her son had the impediments

of age, which meant that his language acquisition ability at the age of ten was less than in early childhood, and of interference from two related languages, which in some instances produced double interference. The four studies mentioned so far show conflicting data on the transfer aspect. A conclusion regarding this conflict will be drawn at the end of this section.

Cathcart (1972) reported on a group of English-speaking children after one year of immersion in Spanish instruction. The children were organized in a program similar to Wallace Lambert's bilingual program in Quebec (Lambert et al., 1970). The children were treated as native Spanish speakers. Cathcart attempted to give a comprehensive examination of the children's production of Spanish utterances. The results were tentative. However, she did list some "operative verbal strategies" used by children: some mixing of Spanish words in English structures, use of two content words without a verb, employment of one verb for all forms, appearance of pivot-like structures similar to that of L_1 acquisition, and so on. These strategies seemed to indicate that the native language was relied on by the children. The reason may be the language environment, where all the American children could use English with one another.

Flores' thesis (1973) dealt with the same group of children with whom Cathcart worked. Flores examined the children's acquisition of Spanish syntax and morphology. The children progressed through the universal stages of grammar acquisition presented by Slobin in his Berkeley research which showed that L_1 acquisition across cultures looked alike in many ways. Flores also reported that the children's speech shared most of the traits of the speech of children learning Spanish as their second language.

Adams (1974) also observed a group of Spanish-speaking children in a special classroom in Culver City where the entire class was immersed in English. In her thesis she investigated the acquisition of morphological rules by children in the process of learning English as a second language. Adams also described the successive stages that children passed through in acquiring the English auxiliary system. The results revealed that the order of acquisition was the same for first and second language learners. These interesting results will be compared to the present study.

Dulay and Burt conducted a number of studies to examine the relatedness of first and second language learning processes in children. Dulay and Burt (1972) reviewed the contrastive analysis hypothesis in relation to children's second-language acquisition, and proposed

as an alternative and more comprehensive explanation for children's errors the $L_2 = L_1$ hypothesis which is based on the similarity in processing strategies. Dulay and Burt showed that many second-language errors made by children are developmental errors which are made in L_1 learning and that interference-like errors, which are used to support the contrastive analysis hypothesis, can be explained in terms of processing strategies, such as overgeneralization, which are shared by first-language learners.

In addition, Dulay and Burt (1974) tested whether children from three different native languages show the same sequence of acquisition of eleven grammatical morphemes (similar to those identified by Brown). They also compared the sequence with the corresponding order in first-language acquisition of English. The results revealed a common sequence of acquisition among the three groups, and a different sequence from that in first-language learning. Dulay and Burt concluded that "These structures in L_2 acquisition would be acquired in different order than that found in L_1 acquisition . . . since the older L_2 learner need not struggle with the same kinds of semantic notions already acquired in earlier childhood" (p. 252). Following Dulay and Burt's work, Bailey, Madden, and Krashen (1974) reported

a natural order for adult subjects quite similar to that of child second-language acquisition.

Hanania (1974) conducted a case study on a Saudi adult in an English-speaking environment. She investigated the subject's acquisition of English structure over an eighteen-month period. Results showed that the subject developed English sentence structures in a manner similar to that of a child acquiring a first language. The study, however, showed no evidence for marked interference from the subject's first language in her English utterances. Hanania noted the primary importance of semantic situational context in the acquisition of English as a second language. In addition, the subject, throughout the learning process, employed a number of strategies. These included attention to word order, to content words, and to simple forms of verbs. A simplification strategy also appeared in the use of certain English structures.

Young (1974) investigated the acquisition of English negation, question formation, and the definite and indefinite article by three Spanish-speaking children. Her results showed that the children did pass through many of the stages as first-language learners. Interference from the Spanish language, however, caused the persistence of certain errors for a longer period of

time than is usually the case with first-language learners.

Hakuta (1974) reported on the development of fourteen grammatical morphemes (as identified by Brown) in a five-year-old Japanese girl learning English as a second language. Her study was the first attempt to use Brown's methodology with a second-language learner. Hakuta compared and discussed the differences between the order of acquisition for first- and second-language learners. She hypothesized some determinants of the order of L_2 acquisition. These included semantic differences between L_1 and L_2, the simplicity principle, and phonological differences. The simplicity principle is similar to one of Slobin's (1967) principles, "Avoid exceptions," and it accounts for the acquisition of the highly regular form of the past auxiliary long before the irregular form and the infrequent regular form. In general, Hakuta showed that her subject's acquisition process was a gradual one and similar to that of most first-language learners.

Heckler (1975) included Arabic, Japanese, and Spanish speakers in his study of their acquisition of English verb morphology. The study was based on Berko's English morphology research (1958) on native English-speaking children. The data showed that the subject's level of proficiency in English, as well as his native

language, determined his performance. Moreover, non-native speakers tend to learn English morphology structures in a "non-randomized" order. For example, present |-s|, |-s| and |-z| forms were mastered before |-iz|, and past, |-t| and |-d| allomorphs were mastered before |-id|. Heckler's findings agreed with Berko's (1958) and Ervin's (1970) findings on the order of acquisition of morphology rules by L_1 speakers.

Larsen-Freeman (1975) conducted a study on the acquisition of grammatical morphemes by Arabic, Japanese, and Persian adult ESL learners. The study was designed to determine if the order of acquisition of grammatical morphemes for L_2 learners as reported by Dulay and Burt (1973) would be found to exist in tasks other than requiring speech production. A battery of five tasks--reading, writing, listening, imitating, and speaking--were administered to the subjects (see Larsen-Freeman, 1975:410 for a discussion of these tasks). It was found that there is "a high level of concordance across language groups with regards to morpheme ordering within tasks" (p. 409). Larsen-Freeman further concluded "that the notion of 'invariance' used by L_1 acquisition researchers investigating morpheme acquisition (Brown 1973:272; de Villiers & de Villiers 1973:268) was not appropriate when describing

the sequences obtained in this L_2 acquisition study" (1975, p. 417).

Wagner-Gough (1975) conducted comparative studies in second-language learning. She also investigated the language development of an Iranian child (5 years, 11 months old) who was learning English as a second language by immersion. Like the previously mentioned researchers, Gough described similar development stages and universal strategies in first and second language learning.

Rosansky (1976) carried out a longitudinal study on the order of acquisition of English morphemes by a native Spanish-speaking adolescent. She compared the acquisition order (longitudinal) with the relative accuracy of the use of the morphemes at a given point in development (cross-sectional). Rosansky found that the subject's longitudinal order is not the same as his cross-sectional order.

Krashen (1982) reviewed the findings of 21 longitudinal and cross-sectional L_1 and L_2 studies on the acquisition of English morphemes. He found a similar order of acquisition for second-language learners, which he termed the "natural order." Most important, Krashen found that the order of acquisition for a second language is not the same as the order of acquisition for a first language, which agrees with the

findings of Dulay and Burt (1974) and Larsen-Freeman (1975).

Cancino, Rosansky, and Schumann (1978) studied the natural, untutored acquisition of English negatives and interrogatives by six Spanish speakers: two children (both 5 years old), two adolescents (11 and 13 years old), and two adults (25 and 33 years old). The study was the first observational-longitudinal one that examined particularly the age differences in the rate of acquiring English as a second language. The least progress, obviously, was that made by the 33-year-old subject. The results, when compared to Klima and Bellugi's findings on L_1 acquisition, indicated similarities as well as differences in some of the developmental stages of English syntax acquisition. For example, Cancino, Rosansky and Schumann question Klima and Bellugi's (1966) findings in terms of the reality of Stage 1 negation. They also question Klima and Bellugi's finding of a Stage 3 question pattern in which children invert the auxiliary with the sentence's subjects in yes/no questions but not in WH-questions. According to Cancino, Rosansky and Schumann, inverted yes/no questions do not precede inverted WH-questions, or vice-versa.

Waterbury and Tucker (1978) replicated C. Chomsky's (1969) experiment on the acquisition of

English complex structures. Their subjects were Egyptian Arabic-speaking adults at different levels of learning proficiency. In addition, a translation task was administered to probe explicitly for evidence of interlingual interference. The results for the most advanced learners indicated a developmental pattern similar to that reported by C. Chomsky for child native speakers. No evidence was found that the subjects attempted to make use of Arabic native language structures in producing those of the English language. This finding agrees with Hanania's (1974) conclusion, mentioned earlier.

Several previously discussed studies on the untutored second-language acquisition of English have indicated that L_2 is acquired like L_1. In particular, researchers such as Corder (1967) and Dulay and Burt (1974) have suggested that the same developmental sequence occurs for the acquisition of the interrogative structures regardless of whether English is learned as a first or a second language. Dulay and Burt (1974) further claimed that "Syntactic interference from the first language was almost nonexistent for Spanish children learning English in the United States. . . . Interference . . . is virtually nonexistent in child second-language acquisition" (p. 82).

Wode (1978) discussed the shortcomings of the morpheme order approach in first- and second-language acquisition research. He proposed instead the notion of developmental sequence. Wode drew on examples from both phonological and syntactic data on four German children learning English naturalistically. The results showed that the first-language acquisition of English questions is different from the second-language acquisition. Although Wode's data supported the widely held view that L_2 follows ordered developmental patterns, it indicated that L_2 developmental sequences are not exactly like the respective L_1 sequences.

In addition, the data revealed that the L_2 children do make use of prior L_1 knowledge, and that interference as well as positive transfer from the previously learned language does take place. This finding prompted Wode to conclude that the L_2 developmental sequences for any language vary systematically as a function of the L_1 acquired previously.

Trosborg (1982) also replicated C. Chomsky's research on Danish-speaking subjects. She investigated the existence of a developmental sequence for the acquisition of the complex structures (easy/eager to see, promise, ask/tell). Her investigation was an analysis of eight studies that involved Danish-speaking subjects acquiring English as a second language at ages

7-10, 13, and 18. The results indicated a developmental pattern similar to that reported by C. Chomsky and Waterbury and Tucker.

Beniak (1984) carried out three studies on the acquisition of French syntax by young speakers of English and French in Quebec and Ontario. Each study was a comparison of the acquisition of an aspect of the French verb system by three groups of speakers. They were: young English-speakers learning French as a second language in an early French immersion program in Montreal; young monolingual French-speakers attending elementary French language schools in Quebec; and young bilingual French-speakers enrolled in elementary French language schools in Ontario. The three aspects of the French verb system studied were the syntax of the infinitival complement of motion verbs, the morphology of the pronominal verbs (that is, reflexive pronoun plus verb), and the morphology of the past participles (that is, stem plus affix). Each study presented and explained the language acquisition errors made by the three speaker groups as well as the differences in the language acquisition stages reached by them.

Summary and Conclusions

Studies on L_2 acquisition show that children as well as adults form different L_1 backgrounds, in a

natural envirionment, acquire English syntax in a way similar to a child learning his native language. That is, studies generally show that the L_2 acqusition process is the same as the L_1 acquisition process. However, differences exist in some aspects.

There are two major areas of research which illuminate differences and similarities between L_1 and L_2 acquisition. These are the morpheme studies (studies of the accuracy of use of English grammatical morphemes) and studies of the development of negation and interrogation. An interpretation of the results of L_2 morpheme studies led researchers to postulate a similar order of acquisition, regardless of differences in age and L_1 background (Dulay & Burt, 1974; Bailey, Madden, & Krashen, 1974), and in spite of the use of different testing procedures (Larsen-Freeman, 1975). The accuracy order of development, however, was not identical to that found in L_1 acquisition (Brown 1973; De Villiers & de Villiers, 1973). (Order of acquisition was conditioned by cognitive development in the case of L_1, while the L_2 acquisition order correlated with frequency in input (Larsen-Freeman, 1976).)

These studies have been of considerable influence in recent research, even though their subsequent results have been criticized for many reasons. First, what is examined is not a developmental order, but an order

relative to the degree of accuracy with which these morphemes occur in obligatory contexts. Second, the testing method which has been used eliminates individual differences (Meisel, Clashen & Pienemann, 1981). Third, although the morpheme studies show definite regularities, there is also deviation from regularities for groups and individuals. For example, longitudinal studies of the acquisition of the same morphemes in individuals (Hakuta, 1974; Rosansky, 1976) showed an order different from the one found in the cross-sectional studies (Dulay & Burt, 1974; Krashen, 1982).

In the case of the studies of negation and interrogation there is evidence of similar L_2 development across differences in L_1 background and age. In addition, developmental stages are identical to those reported in L_1 acquisition.

Furthermore, L_1 and L_2 acquisition researches indicate a well-defined sequence of development for yet another area, a specific set of linguistic structures (easy/eager to see, promise, ask/tell). These structures were originally reported by C. Chomsky (1969) to be acquired in a regular sequence by English-speaking children. A similar developmental pattern is evident in L_2 learning (Waterbury & Tucker, 1978; Trosborg, 1982) in spite of differences in the range of age (adults and children), as well as differences in L_1 background

(Arabic and Danish). These findings confirm the notion that L_1 and L_2 acquisition derive from the same underlying process.

Regarding the interference from native language, conflicting data were found in the literature. In some cases, the interference was obvious, and in others there was little or no interference. In the case of Norwegian children (Ravem, 1978) and German children (Wode, 1978), transfer from the native language did exist while acquiring English syntax. This is possibly due to the fact that the three languages (English, German, and Norwegian) belong to the same branch (Germanic) of the Indo-European language family.

On the other hand, no syntactic interference from the first language was observed with Spanish-, Taiwanese-, and Chinese-speaking children (Young, 1974; Huang, 1971; Dulay & Burt, 1974). These languages obviously do not belong to the same branch as that of English (i.e., Germanic), even though Spanish falls into the same family of languages as English (Indo-European).

With the adolescents, the case is different. Interference did exist for Spanish-speaking as well as French-speaking subjects (Butterworth, 1972; Chamot, 1972). It was argued that these subjects' need to communicate as adults made L_1 transfer possible. On the contrary, no interference was observed with Arabic

adults while acquiring English syntax (Hanania, 1974; Waterbury & Tucker, 1978). This could be attributed to the fact that Arabic is not of the same language family as English. In general, it appears that interference would more likely occur when the first language is in the same family, and particularly the same branch, as English. At this point, it can only be concluded that more research on this aspect is needed.

CHAPTER III

DESCRIPTION OF SUBJECTS AND STUDY

Subjects

The children in this study were native Arabic-speakers from Egypt, Saudi Arabia, and Qatar. They were four boys who ranged in age from 5.9 to 7 years at the beginning of the study (April 11, 1986). The children arrived in December, 1985 with their parents, who are graduate students at the local university. The children were enrolled in an elementary school by the middle of January, 1986. It is a university community school where more than half of the students are the children of international students attending the local university. The school is considered moderate in size with a total of about 350 students. The Arabic children attended the school for five days each week, Monday through Friday, from 8:55 a.m. to 3:15 p.m. The selection of the subjects was controlled so as to have two children from each of the two grades--kindergarten and first grade--chosen for the study.

Observation started with five children; the four boys and one six-year old girl. She entered the kindergarten class on February 11, 1986, just a few days after her arrival in the United States with her parents. At the time the study began, she neither spoke nor understood English. Theoretically, a child like this is an ideal subject from whom to learn about language development because one does not have to work at discovering what the child knew of the language before observation began. However, the girl did not speak English until two months after the study began. This was, of course, frustrating for someone awaiting her every word. It therefore seemed logical to exclude her from the study since there was so little evidence of progress.

The basic criteria for selecting the children were simply: 1) that their first language be Arabic and 2) that their English-language skills be in the beginning stages. From nine Arabic-speaking children in both kindergarten class and first grade, four were chosen; the others were excluded because they were fairly fluent in English at the start of observation. The four selected children were Ali, Adel, Tarek, and Sami.[1] However, based on the researcher's observations of the children's ability to follow instructions in English, or

[1]These are not their real names.

the level of their apparent structural development, the four children selected appeared to have a rudimentary knowledge of English. While they did not have a great difficulty in understanding simple English, they were able to use only basic common expressions with obvious grammatical mistakes. Sami seemed at the beginning to be the least knowledgeable of the four, but later he showed interesting progress.

Until the four children came to the United States, two of them (Ali and Adel) had only very limited instruction in English. It was reported that they knew only a few words and expressions of English, and did some simple writing and reading exercises, but the language was not spoken at all. The other two children (Tarek and Sami) had no previous knowledge of English, and had received no formal instruction in the language. These two children differed from the excluded girl in the fact that she was the only Arabic-speaking girl in the class. That probably made her very introverted and shy, and she rarely spoke or interacted with the other children.

According to the parents, the children spoke only Arabic before they left their home countries. They watched only Arabic TV programs and never had any natural exposure to English. It is most likely that they had their first contact with the new language when

they first arrived in the United States and started school.

Arabic was the principal medium of communication at home. The parents, however, indicated that it is important that their children correctly speak and learn English. They encouraged the children and took interest in their school work. They used English at home occasionally. English was also spoken when the children went out to play with peers. In fact, because the childen spent most of their time with American friends, they were more exposed to English than to Arabic. But they seldom watched TV in the beginning because of the language barrier. In general, it appears that the children have spent most of the daytime (around 8 to 10 hours, including school time) outside home communicating in English.

Fortunately, three subjects were more talkative than Sami, who was quiet and liked to play alone sometimes. In his house, he used to be more active. This could be explained by the fact that at the end of the school day he tries to work out this quietness caused by the language barrier. Later I found that Sami was shy and wary of strangers. Once he felt comfortable, however, he could be very playful. In addition, this child's attendance at school was erratic for different reasons, including sickness and sometimes

laziness. But he still had contact with his English-speaking friends at home and in the playground, where an improvement in his English was noticeable every time compared to the excluded girl. Also, the other three children were more sociable than Sami. At school they were very interested in other children and in engaging in all the activities. They never missed a class. Their involvement in school life helped them make friends among the American students and the other school-age bilinguals from different countries. I had the impression that although the children knew they spoke a different language, they never felt as outsiders.

After school and on weekends, they usually played with children their own age around their apartments in the student housing. Most of their playmates were native speakers of English. Generally, throughout the observation period, the four children were friendly, helpful, cooperative, and willing to participate freely in the study.

Choice of Classroom

The two grades (kindergarten and first grade) were chosen for the following reasons:

1. No systematic instruction of English was given, even in the ESL classes where children's English

was corrected only occasionally. The children were exposed to the new language in much the same way a child learns his first language. This makes it easy to determine how much English an Arab child could absorb naturally in an immersion situation.

2. In this setting, the child's total verbal environment would be an unfamiliar one each day, which he would have to decode in order to communicate in it. The child would have to learn a new language to understand his teacher and play with his peers. Thus, a high motivation factor would be present, making this situation the ideal one to examine child second-language acquisition.

Classroom Atmosphere and Curriculum

The atmosphere in the two classrooms was congenial and friendly. It was a good environment for studying language. There were enough activities (explained below) to make it possible to observe the children in classroom interaction. Because the teacher spoke no Arabic and the majority of the children were Americans, the official language in the classroom was English. The Arabic-speaking children rarely spoke Arabic among each other. Significantly, the Arab children, through this natural environment approach to English used in the

classroom, were treated not only as if they could learn but as if they were expected to learn.

The teacher made an effort to introduce an integrated and well-rounded curriculum to the children. The language arts and materials used were primarily children's reading books, pictures, and other audio-visual aids intended to stimulate language flow. In the classroom, the children had a variety of things to do: listening to stories, reading, writing, singing, dancing, playing games, playing with toys, art work, and other activities.

Different kinds of stories and fairy tales were read to the students, such as The Three Bears, The Three Pigs, Hansel and Gretel, and others. Various activites were also used in reading or retelling a story. These included an art project, a cooking project, the use of puppets or a flannel board, and so on. In addition, the children were asked to make individual books of a story (simplified language); that is, to rewrite it using their own vocabulary. Generally, the teacher would continue with a story, using as many media as possible, until she was sure that the children had learned the vocabulary, the particular sounds and syntactic constructions, or until they were tired of the subject.

Similarly, books such as Brown Bear and I Know An Old Lady were also taught in the classroom. The teacher

also used a number of ESL textbooks entitled, I Like English (Book 1) and Yes! (Book A). These two books stress oral language, listening, and speaking. Their goal is communication in English. The books provide materials developed to enable the young child to use English actively from the beginning. In short, teaching was centered around the students' immediate needs and ability to communicate, by listening, imitating, questioning, and expanding through a wide variety of drills, dialogues, songs, and other means.

The early lessons of I Like English (I), which were covered by the students, emphasized particular syntactic structures such as: present progressive tense, simple present tense of do, have, like, and want, negative, WH-questions, possessive adjectives, and so on. The other book, Yes! (A), introduced simple English vocabularies through pictures, such as: socks, shoes, pants, shirt, hat, hands, face, swings, and so on. Besides the ESL books, other reading books normally taught to English-speakers were also used. These books are: Sun Up, Happy Morning, Magic Afternoon, Sun and Shadow, and Together We Go.

Activity songs were used basically to reinforce certain nouns and verbs. These songs included: Walk Around the Circle; March Around the Alphabet, What Are You Wearing, Colors, Circle Game, All on the Table

Before You, and others. The teacher also tried to communicate with the children through singing certain songs such as Hello, What Is Your Name, where they respond with "my name is_____."

Games such as Alphabet Bingo and Concentration were employed to illustrate the use and recognition of alphabets, colors, clothing and food names, and so forth. In addition, the teacher mentioned that she always collects a wide variety of pictures, an important tool of teaching.

The four Arabic-speaking children, among other non-native speakers of English, were participating in all classroom activities. They all had the need and the opportunity to speak English. It is also important to note that throughout the class period, the teacher corrected the grammar and the pronunciation of all the students but there was no attempt to teach English systematically.

Language-Learning Environment Outside the Classroom

In addition to classroom activities, the natural exposure the Arabic-speaking children received in their everyday environment (whether through school or the outside environment) enhanced their language development to a great extent. This was evidenced by the English

structures they produced throughout the observation period.

The natural exposure through television, social contacts and activities, and so on, was extremely important. The children have had exposure to English through television. They used to watch a variety of programs, particularly cartoons. In addition, the social contacts with American peers stimulated the use of language in contextual social situations. The children had the opportunity to gradually learn and use more words, more greetings, and social expressions in talking to American children or adults. For example, going to the playground gave the Arabic children the occasion to hear and use English at play. They would repeat songs and other things they had learned during the day at school. On the whole, rapid progress was made in the children's learning of English.

In this immersion situation, the children were highly motivated to learn a new language since they felt themselves to be members of the new language community. Also, the children's need or the urge to communicate with Americans encouraged them to use English to establish new relationships or express certain ideas.

In addition to the basic need for interaction within a language community, social prestige appeared to be one of the factors motivating these language

learners. For example, when one of the subjects was asked if he enjoyed speaking English, he replied, "Yes, because when I go back to Egypt it makes the other children jealous of me because they can't speak English." The Saudi child said, "I enjoy speaking English because my mother likes it." That is, when the social value placed on the second language is high, motivation to learn will be quite high.

Generally, a natural environment for learning a foreign language is desirable and is perhaps the best medium for second-language acquisition; in particular, when this medium is a university dominated school similar to the one where this study took place. It provides sufficient exposure, which is considered a must for the process of second-language development to take place as it does in first-language learning. In addition, the type of topics that come up in a natural immersion situation are quite different from what is dealt with in a classroom situation with formal instruction of the target language.

In summary, the four subjects' exposure to English in this language-learning environment was constant and varied. After a few months, the Arabic-speaking children, who previously had no background in English, were writing and speaking the language. Furthermore,

they were developing positive attitudes toward the American culture and language-learning in general.

Procedures for Data Collection

The purpose of this study, as previously mentioned, was to describe the order in which four Arabic-speaking children acquire the English neg and question pattern involving particular aux constituents, and morphological rules. Researchers who conducted similar studies adopted similar procedures in collecting their data. Most of the researchers recommended observing and recording the subjects' free speech. They also recommended the use of certain standardized tests as the best means for data collection in further language acquisition studies. These included imitation tests and translation tests. Adams (1972) concluded that for a thorough language acquisition study, it is necessary to use more than one technique, such as the use of observation, imitation, and translation simultaneously. She also claimed that this would give a more complete picture of the student's production and "would elicit more information through each technique where another was lacking" (p. 63).

The data were collected during the thirteen-week period from April 11 to July 11, 1986. The researcher gathered the data from two main sources: 1) observations

and manual transcriptions of the subjects' spontaneous speech (this technique was used by Ravem (1968, 1975, 1978), Huang (1971), and others), and 2) controlled production experiments (Berko's morphology test, elicited imitation test, and translation test).

Spontaneous Speech Samples

Because of rules and restrictions imposed by the school system, observations of the four Arabic-speaking children's spontaneous utterances were limited only to the children's first five weeks at school. Observations for the second eight weeks were continued out of school by arrangement with the children's parents. At school the observations were conducted in the children's classrooms. The observations took place four hours per week: two hours on Mondays and two hours on Fridays. On each day, one hour was spent with Sami and Adel in kindergarten and the other hour was spent with Ali and Tarek in first grade. The same amount of time was spent with the same children outside school during the second eight weeks of observation.

At school, note-taking was the sole medium of data collection. Again, school regulations forbid the use of a tape recorder in the classroom. I also found that the general noise level and the freedom of movement of the students would have made a tape recorder impractical in any case. I carried a notebook and wrote down as many

of the utterances as I could during each observation session. I always tried to be within hearing distance of the subjects and to take careful notes on all the responses they produced, along with the context sometimes. At first, the students were curious about my presence in the classroom, but the teacher explained that I was learning how to teach and that I needed to observe the class activities.

It was possible to keep a consistent record of the four subjects' speech during the observation sessions. After every session, a diary of each subject was written (examples are included in Appendix A). Later, all noted English utterances were transcribed using the transcription format suggested in A Field Manual for Cross-Cultural Study of the Acquisition of Communicative Competence (Slobin, 1967).

In fact, a great deal of important data were obtained. Also, interesting information and valuable insights were provided into the strategies the subjects employed while acquiring English. These strategies will be discussed in Chapter IV.

From May 16 to July 11, 1986, the researcher visited the subjects' homes in order to continue collecting the data. A friendly relationship developed with the children. At home they were talkative and seemed to be relieved from school burdens and tension.

Although Arabic was the principal language at home, the children spoke to me in English all the time. This was due to the researcher's Lebanese Arabic dialect which differed from the children's Arabic dialects and might have been difficult to understand.

For convenience, at their homes, the researcher attempted to consistently observe the children at regular intervals each week. This was possible since I lived in the same university complex. Visiting the children's homes to record their English utterances turned out to be very productive. The language data were collected during interviews held twice a week in the evenings, and lasted about one hour each. All interviews were tape-recorded. A Panasonic cassette tape recorder (Model RQ-350) with a built-in microphone was used. The quality of the recordings was quite satisfactory. The recorded interviews involved two people at a time--the researcher and one of the subjects. The cooperation and the understanding of the parents facilitated the recording and the subsequent transcription of the data.

Following each interview, the recording was accurately transcribed, using the previously mentioned Slobin format. All the utterances, except for some Arabic words and expressions, were transcribed in

detail, using conventional English spelling, but indicating approximations and repetitions.

During the interviews, the researcher used a different set of techniques to elicit conversation as close to natural as possible. One of these techniques was to verbally create situations in which the children would use English spontaneously. For example, several socially conversational questions were used to elicit more responses in English, most of which were understood and answered. The children were asked how they would make particular statements in English. They were also asked to recall English expressions that they knew or had recently learned, or to recall experiences in school or anything of special interest to them. This included a valuable amount of reproduced conversation which significantly enhanced the data.

Another technique for eliciting English utterances was the use of pictures. Pictures of simple format and of various interesting story possibilities were shown and discussed. The subjects were asked to describe what they saw in the picture and to tell what was happening in the picture. They were helped along with questions to facilitate eliciting utterances.

As the children and the researcher became better friends, the chances for natural conversational situations increased. A few visits were also arranged

between the subjects and their young American peers, during which more natural conversations were carried out entirely in English.

In addition, other possibilities were explored in order to record the children's spontaneous speech in situations when they needed to communicate in English. The researcher accompanied the children on several occasions to the playground, where they spent one to two hours playing with American friends. At the playground, taping was so difficult that a memo was kept instead.

Generally, when they were engaged in normal playground activities, the children's language developed into spontaneous conversations from which the researcher could often times withdraw. Most important, there seemed to be no barrier of nationality or language which enhanced the children's verbal communications. Also, at the playground a certain competitive spirit was present which evoked different interesting types of conversation. This provided additional data on the children's English utterances.

Generally, significantly varied samples of the children's speech were collected during the study period. Although the collection of data was open-ended and included anything the subjects said, the main concern was centered on their development of certain syntactic structures. The data gathered through observations of

the children's spontaneous speech, and through the use of controlled production experiments (which will be explained later) served as the foundation for the discussion that will follow in Chapter IV.

Controlled Production Experiments

The four subjects were given three standardized tests individually, at regular intervals, to investigate English structures that might not have appeared in the children's spontaneous speech (this will be discussed in Chapter IV). These tests were:

Elicited Imitation Tests. In this test, the children's oral production and imitation of a certain set of sentences were examined. It was used mainly to determine the children's processing of particular English structures. Imitation tasks have been applied to examine first-language acquisition (Fraser, Bellugi, Brown, 1963; Menyuk, 1963; and Slobin & Welsh, 1973). Moreover, imitation tests have been administered in studies of second-language acquisition (Butterworth, 1972; Cathcart, 1972; and Adams, 1974).

In preparing the imitation tests, the researcher took some sentences directly from Slobin's manual (1967; Appendix 1) and also used some of the sentences that Slobin and Welsh had given to their subjects. In addition, other grammatical and ungrammatical sentences

based on the models developed by Slobin (1970) were constructed. In the second and third month of data collection, the researcher concentrated on sentences with auxiliaries (especially "do"), question words, inversions, and progressives because many of these structures had not appeared in the children's spontaneous speech but they often seemed to comprehend such structures. Vocabularies familiar to the children were used in all sentences. Elicited imitation tests that were administered and recorded in weeks 5, 9 and 13 are found in Appendix B.

Translation Test. Ravem (1968, 1978) devised a translation test to determine his six-year-old son's development of the English auxiliary system. Butterworth (1972) developed his translation test on the basis of Ravem's for the same purpose. Ravem's test was the model for the translation test devised for this study. This test also included vocabularies appropriate to Arabic-speaking children. The purpose was to determine the children's knowledge of the English auxiliary system.

The children were given instructions in Arabic, such as, "Tell your brother that you don't like coffee," or "Ask him if he likes ice cream." The children then translated these into direct English statements or questions addressed to a third person. (The children's

translations will be analyzed and compared to their spontaneous speech in Chapter IV). Using the native language reduced the number of clues the children had to the English structure. In addition, the use of an Arabic language stimulus facilitated the children's understanding of what they must respond to. The researcher, however, was mainly concerned with the production of an appropriate structure, not comprehending the instructions to choose that structure.

The translation test was given and recorded in weeks 5, 9, and 13. The sentences constructed with an English translation of the stimulus are found in Appendix C.

Morphology Test. This test was administered to determine the four children's knowledge of English morphological rules. The same testing technique was adopted by Adams (1974) and Butterworth (1972).

The researcher gave the children an oral version of Jean Berko's morphology test (Slobin, 1967) in week 13 (Appendix D). The main objective was to trace the development of the children's acquisition of English noun plural, third-person singular, adjectives, and past tense inflections in a more systematic way than was possible from analysis of speech samples.

Test items consisted of real words interspersed with nonsense syllables. They were presented in the

format: "I have a wug. I have two. I have two_____." The children had to provide the appropriately inflected form. The main emphasis, however, was placed on the use of the correct morpheme and not on the children's actual pronunciation of the morpheme. The tests mentioned so far were used simultaneously to elicit enough data for analyzing the children's production of particular English structures.

Research Design and Data Analysis

Research Design

As previously mentioned, the study was carried out over a three-month period. The description of collected data proceeded through three observation periods: I - April 11 to May 12; II - May 12 to June 13; and III - June 13 to July 11. The researcher found it appropriate to group the data into units covering four weeks each, making three periods total. This does not imply that language development and changes took place abruptly at the period boundaries. In fact, language development was continuous throughout the entire observation period. This type of arrangement was merely to facilitate the analysis of the data.

The researcher, therefore, analyzed the spontaneous speech data collected for each child over a period

of one month. In addition, two previously discussed controlled production experiments--the elicited imitation test and the translation test--were administered toward the end of each period. The two tests elicited specific structures which might not have appeared in the child's spontaneous speech. Each child was tested individually at the end of each period. The timing of the test was based on the assumption that a child might develop in one month particular syntactic aspects that should be immediately tested before he proceeds to a higher level of language acquisition. The results of each child's tests were compared to the sentences of the child's free speech observed during the same period. This helped to show if the tests' results reflected patterns in English syntax usage similar to those observed in the children's free speech.

Furthermore, the researcher tried to discover if the structures were learned by the children in any definable sequence through time. Each child's grammar for the first month was compared with his grammar for the second and third months. After determining the sequence of (English syntactic development) for each child, the researcher compared their sequencing to see if the order of acquisition of grammatical structures was similar for all four children.

The study was designed as closely as possible to a pseudo-longitudinal study, since a longitudinal case study requires more data to be collected over a longer period of time. Therefore, in this pseudo-longitudinal study, the analysis of negative, interrogative, and auxiliary development is based on data from the four children, with no one subject having examples for every pattern. That is, I have not made generalizations which are based on data taken from only one student. One subject (Sami), however, showed significantly different results from the other children in the way he developed his negative and interrogative English pattern. Sami's data will be analyzed separately and then compared with the data from the other three subjects. It was believed that this framework provided a fairly complete detailed description, assuming enough data have been collected at frequent intervals.

At the end of the study, Berko's test of English morphology was administered individually. This examined the children's knowledge and order of acquisition of the morphological rules of English after a few months of learning the language. The test also determined whether children who are in the process of acquiring English as a second language internalize grammar rules in the same order as first- and second-language learners.

Data Analysis

The main concern in analyzing the data was to find out what English structures the Arabic-speaking children learn and how they learn them. The researcher was also concerned with investigating what strategies children use to learn a second language. The researcher did not analyze the data within the framework of transformational-generative grammar (like most first- and second-language researchers) . Rules that would generate utterances like those found in the data were not written. Based on readings (Butterworth, 1972; Adams, 1974; Cancino et al., 1978; and others who argued that writing grammars to analyze the data is unsuitable development descriptive technique), the researcher found it unnecessary to write rules that accounted for all of the utterances children produce at a certain age. This would have complicated the task tremendously. Most importantly, it might have revealed inaccurate evaluation of the children's actual competence in the English language.

The researcher mainly emphasized describing and analyzing the structure and origin of the children's language. This description relied solely upon observable speech; that is, the surface structures of their language. The data analysis described the children's production of specific syntactic areas. It also

followed their development of English syntax from one specific point in time to another over a three-month period. This determined if the structures were acquired in a definable sequence through time.

In addition, with the two contrasting hypotheses of Dulay and Burt (1972, 1974) in mind (contrastive analysis and $L_1 = L_2$ hypotheses), specific predictions were made about "transitional" errors in children's speech. Based on the two hypotheses, there were two possible assumptions to account for the errors produced by the Arabic-speaking children. First, these errors could be similar to those of the child learning his first language. Second, the children's errors could be accounted for by interference from their native linguistic system.

Although the researcher did not rely heavily upon the notion of error analysis to describe and organize the data, the above two possible explanations were used as criteria to explain the children's English syntactic development. In fact, the researcher was reluctant to completely drop the notion of error analysis because strong evidence exists in related studies (Wagner-Gough, 1975; Wode, 1978) that children as second-language learners draw upon their native syntactic structures to produce English.

It was expected that this data design and analysis would give a more complete description and better justification of the generalizations and conclusions. However, because the data come only from four subjects, the descriptions and the findings are highly tentative and speculative. This study must be considered as a further step toward rather than the basis for strong generalizations about the learning process of English syntax by Arabic-speaking children.

CHAPTER IV

RESULTS AND ANALYSES

This chapter presents the findings of the present research in three parts. In the first part, the subjects' progress in the acquisition of English negative, interrogative patterns, and specific auxiliary constituents is traced throughout the three one-month periods covered by the study. The spontaneous speech samples[1] collected are analyzed by sentence type or syntactic surface structure with some reference to Arabic, wherever applicable. Since one child (Sami) showed significantly different results, his data will be analyzed separately and then compared with the data from the other three subjects. The developmental stages, through the three periods of this study, will also be compared with those observed in other L_1 and L_2 studies.

The second part of the chapter describes the specific communicative strategies or procedures the

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[1]Data obtained from observations of one child's free speech (April 11-July 11, 1986) is given in Appendix A.

Arabic-speaking children appeared to employ in learning English as a second language. The third part describes the results of the three controlled production experiments given: elicited imitation test, translation test (Arabic to English), and Berko's test of English morphology.

General Development of the Subjects' Negation Patterns

Period I (April 11-May 12, 1986)

During period I, the data of three subjects (Ali, Adel, and Tarek, whose ages ranged from 5.9 to 7 years) can be considered as fitting somewhere between Stage I and Stage II of L_1 negation acquisition described by Klima and Bellugi (1971). They divided the acquisition of the negative into three stages; Stage I, in which the subjects' ages ranged from 19 to 29 months, has a negative applied externally to a sentence nucleus: NEG + NUC (e.g., 'No play that'). In Stage II, where the ages ranged from 28 to 38 months, the negative moves inside the utterance (e.g., 'I no taste that'). The auxiliary is undeveloped, but 'don't' appears as a variant of 'no' and 'not'.

In this period, some of the negative utterances used by the three subjects were declarative sentences in which 'no' was used for the auxiliary 'do + not', such as:

4.1 I no have picture

4.2 I no got black (black crayon)

4.3 I no . . . I no got sister

4.4 I no like cookie

4.5 He no wan yellow

In these utterances, 'no' is directly preceding the main verb and there is no tense marker present. Although 'do' is a difficult concept to master, because in Arabic there is no parallel construction, the three children's development at this stage is not due to interference, because it looks like a natural phase of development as found in the literature of child first and second language (Chamut and Butterworth). Also, in Arabic, verb forms are made negative by the negative particles 'La' and 'ma' (both mean 'not') preceding the verb, but it is not necessary to have a separate subject pronouns 'I' and 'he' since the form of the verb itself indicates the subject. For instance, the Arabic equivalents of examples 4.1, 4.4, and 4.5 above are:

4.1a Ma amlook soora

4.4a La ohib elhalwa

4.5a La youreed asfar

In the first two examples, the pronoun 'ana' (≡I) is omitted, and in example 4.5a the pronoun 'howa' (≡he) is also omitted.

The subjects also used declarative sentences in which 'no' was substituted for 'not'; for example,

4.6 no blue, blue

4.7 no me

4.8 no mine

Although 'no' does not occur within the utterances, as in Stage I of child language analysis, the children's competence is more developed than the first-language learners. The above utterances only resemble the surface form of Stage I, and simply the use of 'not' would have made them correct.

There were also other interesting utterances produced by Ali and Tarek, such as 'No could the picture', and 'no could the bus'. The first sentence means that Ali's classmate could not draw the picture, and in the second sentence means that Tarek was trying to describe a picture the teacher displayed of a girl who could not catch the bus. In these sentences, the 'no' is placed before a nucleus including a verb, similar to those examples described in L_1 and L_2 child language Stage I (Bellugi, Ravem, and Adams), except for the use of 'could', which indicates more development than those of other L_1 and L_2 children.

During period I, 'no' was used in place of 'don't for all the imperatives, as in:

4.9 No say me!

4.10 No eat it!

4.11 No play no more!

4.12 No look it!

Similar structures were also found in L_1 children during their first stage, whereas 'don't' was observed in their second stage. In my study, one of the three children used 'don't' in the imperatives twice only during this observation period. The use of the personal pronoun at the end of the above imperatives is a normal feature of this developmental stage. If Arabic were causing interference, there would have been no object pronoun following the verb. Instead, an object marker suffixed to the stem of the verb indicates the object pronoun in Arabic. 'No look it' is an interesting example, as it seems that 'no' was simply added to the English expression 'look it' commonly used by children.

Double negatives were used during this time, as in 'I no got no black'. There is evidence in the literature (Chamot, 1973) that this is common among American school-age children. Also, at the end of this period there was evidence that the children started to become familiar with the English auxiliary 'can't'. Some examples are:

4.13 This book no can't, can't have it

4.14 No can't, can't play Bingo

There is a parallel construction to 'can't' in Arabic, but the negative particle is placed in front of the word 'can', which indicates noninterference. It seems that at this stage the subjects were, probably, uncertain as to whether 'can't' is a one-word negative by itself or not. Thus 'no' and 'can't' were first used and then corrected by using 'can't' alone.

The observations indicate that Sami, the fourth child, started at a slower pace and level but at the end of the time period was even with the other three children on some features and further developed on others. There has been a great evidence in the literature that there is similarity in the developmental stages of L_1 and L_2 acquisition. The differences are mainly related to the subjects' rate of progress, a factor that is considered quite significant in the literature. Therefore, considering the significant difference in Sami's progress and the fact that he represents 25% of my data, Sami is dealt with separately.

Sami's negative statements more nearly resembled those of L_1 and L_2 Stage I (Bellugi, Adams, and so on) than did statements of Ali, Adel, and Tarek. Negatives were formed by simply attaching 'no' to the utterance. However, unlike a child's Stage I, the 'no' was used inside and outside the utterance, and most of his utterances had no verbs. For example, Sami's data

showed few declarative sentences in which 'no' was used for 'do + not', as in:

4.15 No come yet.

4.16 No five. Dis no five.

In the first utterance, Sami used 'no' with a verb that should have been in past time, 'he didn't come yet'. Because he had no feature to mark past tense at this time, this use of the verb 'come' is expected. In 4.16, Sami was referring to his friend who did not know the "five cents" picture when displayed by the teacher. He used 'no' in place of 'doesn't'. There were also a few other declarative sentences in which the 'no' was used for 'not', as in:

4.17 That no picture.

4.18 No pint. No this.

4.19 Me no get off.

Unlike the other three subjects, Sami's data did not show examples of imperatives, double negatives, or any other negative structures at this time.

Period II (May 12-June 13, 1986)

During this time, there were some changes in the three children's knowledge of negation as well as English in general. They continued to use declarative utterances with 'no' in place of 'do + not', such as in:

4.20 He no like.

4.21 I no want.

4.22 You no take mine.

4.23 I no got a book.

4.24 No got it.

These sentences are similar to those discussed previously. The only changes are due to greater familiarity with pronoun use. The use of 'he' necessitates 'doesn't'. In brief, in these sentences 'no' is used directly before the main verb with no indication of tense marker. The data also showed declarative utterances such as 'no me', 'no red color', and 'dis no us', with 'no' used for 'not'. 'No' here has been placed in front of a word without a verb, similar to what occurred in period I. There were other sentences where 'no' replaced 'not', as in:

4.25 We no going outside.

4.26 I no gonna play.

4.27 We no ready.

Here the 'no' precedes the verb with the auxiliary copula deleted. These are similar to utterances by L_1 and L_2 children in Stage II.

In period II, there was a change in the acquisition of the imperative form. There was only one example --'no tell me'--in which 'no' was used before the verb. In all the other imperatives, 'don't' was correctly

placed in the initial position. The three children started by using 'don't!' alone as an imperative; shortly afterward a verb was added to it. In addition to the imperatives, there were other instances which showed that the subjects productive use of 'don't' was increasing; for example,

4.28 You don't know nothing.

4.29 You don't got any color.

4.30 You don't have any bear.

As previously mentioned, double negatives are common among American school-age children. The above sentences are significant, however, because they reveal other types of English syntactic development. The use of the indefinite 'any' shows that other areas are developing. It is difficult to explain why 'color' and 'bear' were not pluralized. And in Arabic such a construction would be pluralized, thus indicating no interference. Another type of double negative, 'that ain't nothing', which is common among children of this age, was often used by the three subjects.

In addition to the above discussed types of sentences, there were several new ones in this period. For example, the incorrect use of 'not', as in:

4.31 That not red one.

4.32 No, not broken.

4.33 You no playing.

4.34 She no reading.

4.35 I no did it.

Example 4.31 is similar to sentences found in L_1 and L_2 studies in Stages II and III. It is not likely that there is interference from Arabic in this sentence for many reasons. First, the article would not be deleted in the Arabic construction. Second, the predicate noun 'one' is not used in Arabic. The noun is usually incorporated into the adjective, where the ending indicates gender. In sentence 4.32, although the word order parallels the Arabic structure, it is not certain that Arabic is causing interference. It is possible that the first language is merely serving as an aid. In addition, in sentences 4.33, 4.34, and 4.35 the use of both the past 'did' and the continuous '-ing', although the copula is deleted, reveals a developing knowledge of English, that could not have come from Arabic because the structures 'did' and '-ing' do not exist in Arabic.

In general, the auxiliary system expanded during this period. The use of 'can' increased and 'could' began to be used. 'Could' often substituted for 'can', which makes it clear that the subjects recognized 'can' as a separate unit. 'Can't' was produced primarily with 'do'.

In period II, there was noticeable development in Sami's knowledge of English. The modals 'can' and 'can't' started to appear in his speech. In addition, the copula became a regular part of his sentence construction, and 'not' was produced frequently. There were no imperative constructions. Declarative sentences with 'no' in place of 'do + not' or instead of 'not' were used sometimes with 'no' always inside the utterance, such as:

4.36 I no have juice.

4.37 You no play.

4.38 You say no eat.

Interestingly, Sami used 'not' mainly in sentences where the verb 'to be' was required, such as in:

4.39 Not a girl

4.40 She not yellow one?

4.41 Me book not like that.

This construction was used by the other three children in period III. In addition, Sami used the copula very frequently in this period, but only with questions and declaratives. The copula was not used in the negative.

Period III (June 13-July 11, 1986)

For Ali, Adel, and Tarek, during this period, 'no' continued to be used instead of 'do + not' or 'not' in declarative utterances but much less frequently. The

use of 'don't' increased, primarily in the imperatives, where it was used alone and sometimes with verbs. Imperatives with 'no' continued but were used less than before. The children now started to use 'don't' in many other language contexts, such as in 'He don't have big one.' In summary, the three Arabic children did not use 'does' or 'doesn't' at all during the study period. Other L_1 and L_2 studies showed similar results.

Also, questions such as

4.42 She no like you?

4.43 I can't read yet?

were used. Questions were rarely inverted and the children were simply placing 'no' before an action verb. The above examples do not indicate interference from Arabic because it is not necessary in Arabic to have a separate object pronoun, since the pronoun suffix attached to the verb usually indicates the subject.

'Not' was used more frequently during this period. It was used mainly in utterances where the copula should be both as a main verb and as an auxiliary verb. For example,

4.44 I no gonna do black.

4.45 I not playing.

4.46 Oh, he is not playing.

4.47 That not a bear.

The children generally made the distinction of placing 'no' in front of a transitive verb and 'not' where 'be' was required. This is similar to Adams' findings (1974). As with L_1 and L_2 learners, the use of 'not' began to increase, although 'no' was used simultaneously in utterances of the same period. There is evidence in the literature that in all language learning the old form continues while new learning is taking place.

During the third time period, there was a significant development in Sami's syntax. The modals previously mentioned and the copula continued to be used frequently. In addition, 'are', ''re', 'me', ''s', 'was', ''nt', and 'do' began to appear. Sami continued to substitute 'no' for 'do + not' in declarative utterances such as 'he no like that' and 'he no play bingo'. However, there were no declaratives in which 'no' was used for 'not', as well as no imperatives in this period. There were two double negatives and non-inverted questions, such as:

4.48 He don't be in the house?

4.49 What he not playing, you see?

4.50 Why he don't come?

In sentence 4.49, Sami substituted 'what' for 'why' and omitted the copula with 'not'. In sentence 4.50, he used 'don't' instead of 'doesn't' and did not invert.

In addition, Sami continued to distinguish between the use of 'no' and 'not', although he started to use the copula with 'not' during this period, as in 'this two are not stronger.'

In conclusion, for the first period, comparison between Sami's progress and the other three children is fruitless, because Sami produced far fewer utterances than the other three children. Generally, the four subjects associated 'no' with negation and understood the intonation associated with negation. During period II, it was obvious that Sami's English syntax had progressed significantly and started to parallel that of Ali, Adel, and Tarek. They all used 'no' in place of 'do' and 'not' in declaratives and imperatives, 'no' in place of 'not'. Double negatives were only used by Ali, Adel, and Tarek. The children started to produce 'not' more frequently. In this period, Sami made the distinction of using 'not' in constructions where the copula was required and of using 'no' in others.

During the third period, there was evidence that the four subjects were progressing rapidly. However, Ali, Adel, and Tarek used 'no' with greater frequency than did Sami. They also used 'not' but somehow confused it with 'no'. In addition, they began to make the distinction between the use of 'no' and 'not' that Sami made in the previous period. In summary, it seems

that the four children proceeded through the same stages in acquiring the English negation. However, Sami's data showed a significantly different order of acquisition as shown in Table 1, which summarizes the basic differences between Sami and the other three subjects' negation development during the three periods.

General Development of the Subjects' Question Patterns

Period I (April 11-May 12, 1986)

During period I, Ali, Adel, and Tarek's questions were also similar to analyses of L_1 and L_2 language learners (e.g., Bellugi, Adams, and others). However, their development more closely resembled Stage II of these analyses because their utterances were longer and more complex. In this period, the three children asked questions simply through rising intonation. The word order was the same as a declarative sentence, and there was no inversion. Most of the children's questions, however, were of the yes/no type. For example,

4.51 The girl?

4.52 We go now?

4.53 You know the name?

All the yes/no questions required the modals 'do' or 'did' in the initial position.

In Arabic, a statement may be changed into a yes/no question or Wh-question simply by beginning with

Table 1--Differences between Sami and the Other Three Subjects' Negation Development for Three Periods

Period	Sami	Ali, Adel, and Tarek
I:	- Resembled stage I of L_1 and L_2 studies - Mostly had no verbs - No imperatives - No double negatives - 'Can't' was not used	- Fitting somewhere between stage I and II - Mostly had verbs - Use of imperatives - Double negative used often - 'Can't' used
II:	- 'Can't' used with and without 'do' - No use of imperatives - No double negatives - Copula used often - 'Not' frequently used, and in places where 'to be' required	- 'Can't' used primarily with 'do' - Use of imperatives - Use of double negatives - Copula omitted often - 'Not' less frequently used and omitted where 'to be' is required
III:	- Regular use of copula - Use of copula with 'not' - Did not confuse use of 'no' with 'not' - Use of 'do' as a tense carrier in different contexts - No imperatives	- Copula less regularly used - No use of copula with 'not' - Use of 'no' confused with 'not' - Use of 'do' as a tense carrier only in the imperative - Use of imperatives

an interrogative particle and keeping the same word order. There are also particular intonation patterns associated with questions. In English, questions have a different word order from statements. In addition, Arabic has no grammatical element equivalent to 'do' and 'be'. But at the same time, a subject and an object pronoun are not expressed in the interrogative sentence. Therefore, at the beginning stage of learning, it is

possible to consider the above questions of this kind a natural stage of the learning process rather than interference. L_1 and L_2 studies show that rules for the auxiliary systems, inversion, and the insertion of 'do' are learned later. They involve more syntactic knowledge than the child had at this point and, most importantly, are not needed for communication.

Also, in period I, all questions omitting 'be' were interrogatives with a Wh-word, as in

4.54 What that?

4.55 What you doing there?

4.56 What you name?

4.57 Where the crayon?

4.58 For what this?

These questions are all similar to the Stage I expressions (Bellugi, et al.) except for 4.55 and 4.56, because pronouns would not be used at this stage. Interestingly, 'What you doing' was the only utterance in which -ing was attached to a verb during this period (later, -ing began to be used regularly). This means that the subjects, at this stage, were repeating a phrase previously heard, by simply omitting the auxiliary and inflections which were not yet in their syntax. It appears that certain phrases needed for daily survival were learned quickly, with no knowledge of syntax. Similarly, 'What your name?' is also often

used and heard in the classroom. Once again, the 'is' was deleted. The utterance 'for what this?' is slightly different from the above discussed ones. In Arabic, the preposition is often attached before the question word, and it seems here the 'for' was attached as if it were translated. It also could be inverted English structure.

During this period, there were a few examples of Wh-questions in Sami's data, such as

4.59 What time?

4.60 What color this?

4.61 What your name?

With these questions the auxiliary, copula and inflections were left out. Sami also used a few questions different from the above ones, with declarative order and with the deletion of the copula, such as 'the bears?' and 'this what color?' The second question, however, could either be caused by interference (this structure is possible in Arabic) or could simply be attributed to being a normal stage in development for all English learners.

Period II (May 12-June 13, 1986)

During this time, the three subjects continued to use the questions with declarative order similar to those in period I. The modal 'can' was present in a few utterances:

4.62 You give me paper?

4.63 I can do my name?

4.64 I can go get it?

4.65 I got two minute?

4.66 You want no do it?

4.67 You can do that number?

'Do' was now omitted for Wh-questions; for example,

4.68 What you want to do now?

4.69 Where you get the pencil?

Also, the copula 'be' was still omitted for Wh-questions and for yes/no questions in this period:

4.70 What color that?

4.71 What book the?

4.72 What you doing?

4.73 Where he paper?

4.74 This your mother?

It was not the interference that played a factor here, but the copula was not developed as yet. There is strong evidence in the literature that for L_1 learners the copula appears late as well.

Sami's syntax significantly developed during this period. The copula became an integral part of his speech and he began to use 'can', 'can't', and the auxiliary 'don't'. 'Do' was still not used. However, all of Sami's questions in this period were of declarative word order, such as:

4.75 You see the white?

4.76 You got this now?

4.77 This is grandma?

4.78 This is big bear?

4.79 This is a girl?

4.80 You don't see black, white, red?

4.81 You don't see this?

Questions 4.77, 4.78, and 4.79 simply lack the inversion of 'this' and 'is'. Questions 4.80 and 4.81 lack the inversion of 'don't' and 'you'. This lack of inversion is probably caused by nonmastery at this point.

Sami also used the following Wh-questions:

4.82 What she ask?

4.83 You know what is?

4.84 Where the baby?

'Do' was omitted in these questions. It is also interesting that 'is' was not included here, although it was in the yes/no questions of the same period.

Period III (June 13-July 11, 1986)

During this period, questions with declarative word order were used by Ali, Adel, and Tarek, but now with modal auxiliaries:

4.85 You wanna go over there?

4.86 You gonna do that?

4.87 You wanna do it?

4.88 I can sit here?

4.89 I can't see yet?

4.90 You can do bird for me?

In the first utterances, 'wanna' and 'gonna' are shortened forms of 'want to' and 'going to'. They are not considered auxiliaries which could be inverted with the subjects, but are the pure verbs themselves. Therefore, they still need an auxiliary. Thus, 'do' is required before the questions with 'wanna' and 'are' before the questions with 'gonna', since they function as progressive verbs.

The latter three questions show that the subjects still were not inverting. There were also several Wh-questions not inverted, such as 'Where she was?'. However, this is another example of nonmastery, and is a typical error among L_1 learners. Even in Stage III, for example, when Bellugi's children were inverting yes/no questions, Wh-questions were frequently not inverted.

Also, in period III, the children were still using quite a few yes/no questions and Wh-questions with simply rising intonation[1] and with no modal or auxiliary, such as the following questions that require 'do':

4.91 You know what color?

4.92 He no like him?

4.93 Now you play?

4.94 Why you break?

4.95 How you do it?

4.96 How you know?

In addition, 'be' was omitted in most of the Wh-questions, which again can only be attributed to nonmastery. For example:

4.97 What you laugh about?

4.98 How you gonna do?

4.99 Where the red one?

In this period, Sami's data also revealed questions with declarative word order and with modal auxiliary, such as:

4.100 I could have this?

4.101 I can put this on?

4.102 You no wanna play?

The first two questions need simple inversion of the auxiliary and NP. The third needs the 'no' changed to 'don't' and then placed in the initial position.

There were also questions of declarative word order and with 'don't', as in:

4.103 He don't be here?

4.104 He don't scare of me?

---

[1]It should be mentioned here that all questions require inversions from a strict grammatical viewpoint. The yes/no questions, however, allow rising intonation as a question marker, whereas Wh-questions require inversion.

4.105 Why we don't see his grandma in the picture?

4.106 Why he don't run?

These questions again require simple inversion of 'don't' and the NP. In addition, it seems that Sami was confusing 'don't' and 'isn't'. For example, in sentences 4.103 and 4.104 'isn't' would have been the correct word to use.

He also used yes/no questions with no auxiliary, such as:

4.107 This goes right here?

4.108 This big boy here?

There were also questions like:

4.109 He's a boy?

4.110 Why he's bigger?

4.111 They're little and he's big?

Question 110 also requires the inversion of 'is' and the pronoun. It is interesting that at the same time that Sami was using this kind of question, he was inverting other questions with 'is'. This means that he was beginning to be conscious of inversion and that those questions with 'is' would be the first to be successfully transformed. Even in Stage III, where yes/no questions are inverted, Wh-questions are not yet inverted according to the studies of Bellugi, Adams, and others. However, Cancino (1978) found that yes/no

questions and Wh-questions were inverted at the same time.

Sami also used yes/no questions and Wh-questions with the omission of the auxiliary 'do':

4.112 You know whats a park?

4.113 Where he live?

4.114 What he want?

4.115 Why he look sad?

Most of his questions during this period omitted 'do'. Toward the end of this period, Sami began to produce 'do' sometimes, so it is possible that given additional time he would have gained productive control of its use.

There were also other yes/no questions and Wh-questions in which the auxiliary 'be' was omitted, as in:

4.116 This one stronger?

4.117 And this his house?

4.118 Why he mad?

4.119 What you drawing?

4.120 Where he going?

It is natural for L_1 and L_2 learners to go through a period of flux when they are using a particular syntactic structure. They use it correctly some of the time and incorrectly other times. (For example, in Bellugi et al., the children often omitted the copula in questions where it was used in combination with other verbs.)

In brief, although Sami started at a slower pace and acquired certain syntactic structures in a significantly different order. The basic differences between Sami and the other three subjects' questions development for the three periods are summarized in Table 2.

Table 2--Differences between Sami and the Other Three Subjects' Question Development for Three Periods

Period	Sami	Ali, Adel, and Tarek
I:	- Produce very few questions; not enough for comparison in this period	- Resembled stage II of L_1 and L_2 learners - Use of rising intonation - Omission of 'do' and 'be' in yes/no and Wh-questions
II:	- Frequent use of copula early in this period - Use of 'to be' in yes/no questions - Use of modals 'can't' and 'don't'	- Use of copula only at end of this period - No use of 'to be' in yes/no questions - No use of modals
III:	- Inversion with yes/no questions - Use of 'do' as a tense marker in yes/no questions - Use of modal 'could'	- No inversion with yes/no questions - No such use - No use of 'could'

The four subjects, however, were similar in three aspects of developing questions:

1. Forming questions in declarative word order with non-inversion of the verb and NP: probably because the child has no difficulty in being understood when asking questions in this way. Therefore, there is no or little

functional and communicative pressure to adopt alternate question structures.

2. Omission of the auxiliary 'be': The children omitted the copula at the early observational stages. Its use was not consistent until the end of period II, where the copula became much more frequent and appeared in more varied contexts than it had before, particularly with Sami who started using it early in period II.

3. Omission of the auxiliary 'do': It was obvious that the four children had difficulty with the auxiliary 'do'. Ali, Adel, and Tarek did not use the auxiliary tense marker form of 'do' at all during the observation period, although they used it as a transitive verb. They seemed, however, at the point where subtleties like 'do' might be developed within a short period. Sami began to include 'do' as a tense marker at the end of period III. Similar results were found in other L_2 studies (Huang, Butterworth, and so on).

In summary, the previous discussion reveals that the four Arabic-speaking children, while acquiring English negation and questions involving specific aux. constituents, went through stages similar to those described in L_1 and L_2 acquisition studies. In addition, there was no evidence for marked interference from the subjects' first language in their English sentence construction.

Acquisition of Specific Grammatical Structures

The Progressive

The progressive form 'V + ing' was the first verb inflection (other than simple past) that appeared in the four subjects' data. For Ali, Adel, and Tarek, most often it was expressed without the copula, although there were instances where the copula was present. For example, in the third period, utterances with the past form of the copula -ing were produced, as in 'He was eating' and 'She was peeking'. Sami also first used the '-ing' form in period III. Although there is not much data of this inflection in his speech, it seems that the copula was present in most of his utterances.

The progressive inflection was also the first verb inflection to appear in studies such as Brown (1973), Adams (1974), and Hanania (1974). These studies indicate that the '-ing' first appeared without the auxiliary 'be', a finding that agrees with the data in this study.

Copula

The copula was produced in few utterances during period I. However, its use increased in periods II and III. Questions were the first type of sentences in which the copula occurred with consistency. The children produced 'was' only a few times in each period, and

they did not produce 'are' until the second period, where it was used in a few instances, but increased in period III. Contractions began to appear in the last two weeks of the study, such as 'I'm playing' and 'You're welcome'. These results agree with some of the L_1 and L_2 studies (Klima & Bellugi, Young, and Adams).

Unlike Ali, Adel, and Tarek, the copula was a grammatical aspect which Sami seemed to acquire easily. He even seemed to be more advanced than other L_1 and L_2 learners in this aspect. Sami used the copula occasionally toward the end of period I. In periods II and III, Sami used it regularly. However, like the other three subjects, he was most consistent in using the copula in questions. Sami also produced contractions very regularly during period III, where ''s' and ''re' were used more than 'is' and 'are'.

Past Tense

The irregular verbs were produced first. During period I, verbs such as 'seed' were used several times, overgeneralizing the formation of the regular past. This indicated a growing ability to control the regular past. However, in the second period most of the past forms produced were irregular, such as 'found', 'saw', 'forgot', 'got', and 'did'. During the third period, the past forms used were still primarily irregular ones,

and the children added the use of 'said', 'made', 'drew', 'broke', 'went', 'lost', 'done', 'ran', and 'won'. Only a few regular past forms were used as well, like 'missed' and 'listened'. 'Did' was also found in some of the subjects' utterances. It is important to note that Sami had not produced regular pasts throughout the entire study. However, the increasing use of pasts, although irregular, implies a definite development of the past and its different forms. L_1 and L_2 studies such as Ervin-Tripp, Brown, de Villiers and de Villiers, Young, and Hakuta showed that learners first produce irregular past verbs and later use regular verbs infrequently. In addition, the four Arabic-speaking children did not produce future inflections or any sentences with the auxiliary 'have + en' throughout the three months of data collection.

Inflections

A. Plural |-S|. The subjects began to use the canonical pluralization rule in period III, where many regular plural forms were expressed. In addition, the irregulars 'children', 'feet', and 'teeth' were used. This agrees with Ervin-Tripp's L_1 study.

B. The possessive inflection was not used by Ali, Adel, and Tarek, although they seemed to understand possession as a concept. For example, in period III, with reference to a toy in a picture, the question

'Whose toy is it?' produced 'It's the girl toy'. Although the possessive inflection is not realized here, it is clear that the child understands the possession being questioned. Furthermore, this is particularly significant as the Arabic equivalent would have the reverse order. On the other hand, the possessive form |-'s| occurred in Sami's data at the end of the last observation period. Therefore, it is difficult to know how consistent he was in its application. Also Ervin-Tripp's L_1 children (2-3 years old) developed the possessive inflection at the end of the study period.

C. The third-person singular |-s| appeared only once in two children's data (Sami and Ali) at the end of period III. This agrees with L_1 studies (Brown and Bellugi) regarding the development of the same inflection at a late stage by their subjects.

'Do'

This verb was not used at all by Adel, Ali, and Tarek in the affirmative as a tense carrier during the three-month study period. It was used, however, as a transitive verb. 'Don't' began to appear regularly during the second period. At the end of period II, it was expressed in imperatives regularly. In addition, 'I don't know', which is considered in the literature as a separate lexical unit, was a frequently used idiom.

Sami, on the other hand, started to use 'do' in the affirmative at the very end of the study period. It was produced many times in the last two weeks in its past form + negative (e.g., 'I didn't found'). This is an evidence of his understanding of 'do' and 'past', although the tense is doubly marked, which was only observed in L_2 studies of Adams as well as Young. However, like the other three children, 'don't' was much easier for Sami and it appeared regularly in his speech during period II. He did not use it in imperatives at all, but the expression 'I don't know' was used in all study periods.

'Can' and 'Can't'

These two syntactic aspects became well established in Ali, Adel, and Tarek's lexicon and syntax by the end of the first observation period. 'Could' was produced during the first month of observation, but was found regularly at the beginning of period II. Sami used 'can' sometimes during the second observation period, but he used it often during the third period. 'Can't' appeared only twice in his data.

The Subjects' Communicative Strategies

The four Arabic-speaking children appeared to employ certain strategies in learning English as a second language. These are:

1. Repetition and Intonation

On certain occasions, it appeared that the children repeated what they were saying enough times in order to communicate. They probably thought that through repetition they would be understood. Repetition was sometimes accompanied by a rising intonation. For example, when Ali was describing a kite in the playground, he said 'go up, up, up, up'. His intonation was becoming increasingly louder, as if the kite was ascending through his voice. The repetition of 'up' and the change in Ali's intonation was an attempt on his behalf to communicate his thought and to make certain it was understood. Such methaphoric and simple means of communication was also observed in other instances where the subjects repeated their utterances with a lowering intonation.

Generally, the children produced several types of repetition patterns. First, those in which the entire sentence was repeated:

4.121 To get a bike. To get a bike.

4.122 Close your eyes. Close your eyes.

4.123 I know. I know.

4.124 Not you. Not you.

Second, those in which only a part of the phrase was repeated:

4.125 Hey that green. Green.

4.126 He had a red nose. A red nose.

4.127 Look at big kite. Look it.

And third, there were repetition patterns in which the meaning was excluded by adding words to the initial phrases, such as:

4.128 Like that. Picture like that.

4.129 You got two. You got two. One red. One blue.

The repetition strategy was reported particularly in the studies of Butterworth, Huang, and Hanania. Others did not mention much about repetition, probably because it did not occur or was not considered important. However, the present study reveals that repetition is one type of strategy that is used by children in communication, which indirectly enhanced their language learning process. They tend to repeat and play with, the new sounds or words as a natural way to familiarize themselves with the new language.

2. Gestures

The use of physical gestures as a method of communication was quite frequent. Gestures usually replaced unknown or unremembered English vocabulary. For example, one day in the classroom, the teacher was asking the students what kind of birds they have at home. Adel looked at me and said, 'I have hamama'

(which means 'dove' in Arabic), then he added (with flying gestures), 'go like that'. Because Adel used the Arabic word for 'dove', he had to make the flying gestures for clarification. Also, once the teacher asked Ali if he was drawing a picture. He said, 'no' (showing her the crayons) and added (by making painting gestures with his hands), 'no pink'.

On another occasion, during the third period, I was showing Tarek a picture of a man with boxing gloves. When I asked him, 'What does the man have on his hands?', he replied in Arabic 'Kfouf' (for gloves) and started making boxing gestures. Other few similar situations also occurred throughout the study period.

3. Noises

There were also a few instances where noises were used as a tool of communication, often accompanied by gestures. One day (toward the end of the study), Sami and Tarek were talking about cars:

Sami: Do you drive?

Tarek: Yes (laugh; then continued); you go like that. Go like that! (gestures of driving) I go (car noise)

Also, on another occasion, the children were asked about the meanings of the Seven Dwarfs' names (Sleepy, Happy, Sneezy, Grumpy, and so on) mentioned in the story, Snow White and the Seven Dwarfs. In their answers, the

children reverted mostly to noises and gestures for describing the different names.

4. Simplification

Another communication strategy in evidence was the subjects' use of sentences with simple structure. Generally, the children's utterances lacked the inflections, auxiliary constitutents, and many of the function words characteristic of adult surface structure. The subjects relied on context to complete meanings. Verbs mostly appeared as infinitives ('go', 'like', 'know', and 'play'). They were not inflected for either tense or number. In short, the children's utterances reflected a process of simplifying and basically contained content words such as:

4.130 She give flower water.

4.131 He no milkman.

4.132 No, two fish.

This strategy also appeared in many second-language acquisition studies such as Butterworth, Huang, and Hanania.

5. Imitation

The children's data also showed a number of utterances that indicate an entire imitation. Because of the usefulness of some utterances, regardless of their complexity, they were learned as whole units rather than formed by the application of rules. There

were quite a few declarative and imperative imitations that were used by the four subjects throughout the different periods of the study, such as 'Excuse me', 'wait a minute', 'come on!', 'let's go', 'I gotta go', and 'get outta here'.

Results of Controlled Production Experiments

Elicited Imitation Test

Each subject was given a standardized imitation test at the end of weeks five, nine, and thirteen of the study period. The results of each child's tests were compared with his free speech collected in each month's period. The description of the tests' results are based on a pooling of data from the four subjects, with no one student having examples for every pattern.

Generally, results revealed that the children modified most of the model sentences in the three imitation tests to agree with their own grammar during that period of the test. For example, Tarek's free speech during period I produced negative declarative sentences in which 'no' was used for 'do not', as in 'Ali no wan purple'. Similar syntactic structures were also produced in his imitation test I, as in:

	Model Sentence		Imitation
4.133a	I don't want an apple.	4.133b	I no wan apple.
4.134a	I don't know his name.	4.134b	I no know |iz| name.

4.135a Mohammed didn't have a bike last year

4.135b Mohammed no have bike.

Also, paralleling the generally increased use of 'can' in free speech during period II, Ali, for example, imitated the same model sentence 'Cats can drink milk', whereas in period I he omitted 'can' in 'I can see a cow'.

Interestingly, in period II Sami used the copula in questions and declaratives but not in the negatives, as previously discussed. Also, in the imitation test of the same period, he changed the model sentence 'the red desk is not here and the black desk is here' to 'the red desk not here and the black desk is here'. For all subjects, the use of 'don't' was mostly restricted to a few memorized expressions such as 'I don't know'. The fact that the subjects did not produce 'don't' in the imitation tests at the end of periods II and III provides additional support for the conclusion that they had virtually no rule-governed productive control over 'do + not'. The following examples demonstrate the subjects' normal responses.

	Model Sentence		Imitation
4.136a	I'm not old but I don't have any hair	4.136b	I no old I no hair
4.137a	We don't like to buy a new car every year.	4.137b	We no like to car every year.

4.138a	I don't like Tina and I don't speak to her.	4.138b	I no like Tina I no speak her.

'Does' and 'doesn't' were not used at all during the study period, and none of the subjects used them in the imitation tests.

Regarding the yes/no- and the Wh-questions, the subjects produced sentences similar to their speech data. They changed the questions into declarative statements with rising intonation and with the omission of the auxiliary 'do'. In test I, for example, the model sentence 'do I like to read books?' was imitated as 'I like read book↗'. During this last period, 'be' was still omitted in most Wh-questions of the free speech data. This was also observed in test III, where 'are', for example, was omitted in 'where are you going to sit'.

Similarly, yes/no-questions with the models 'can' and 'can't' were not inverted in the last imitation test. In addition, the four children were never heard to produce 'have + en' throughout the whole study period. They, however, only produced the past participle of the main verb and omitted the auxiliary 'have' in their imitated sentences. Some examples are:

	Model Sentence		Imitation
4.139a	Ahmed have lost the game.	4.139b	Ahmed lost the game.

4.140a We have gone to the Mall yesterday.

4.140b We gone to Mall yesterday.

Translation Test

A translation test was administered basically because there is a slight possibility that in the imitation test the student could have imitated the model sentences without comprehension. As explained earlier, this test was based on Ravem's test (1968) and was given to the four subjects individually in weeks 5, 9, and 13 of the study. Ravem used the test to compare the translated utterances with the data obtained from the children's free speech in order to get an indication of the validity of prompted utterances of this kind.

The test consisted of forty-eight sentences which included vocabularies familiar to the subjects. Each child completed the test in about thirty minutes. The children were given instructions in Arabic, such as 'Tell your brother that you didn't go to gym today', and so on. They had to translate these into English statements or questions addressed to a third person. They were also told to translate exactly the model sentence said by the researcher in order to have them use a certain negative, interrogative, or auxiliary form. The results, therefore, were expected to be related to the

children's development of these syntactic aspects, but many alterations occurred and there was obvious interference from Arabic. In fact the translation test turned out to be more of a stimulus for free speech production than one of rigid control like the elicited imitation test. However, it was another useful source of information on the children's English syntactic development.

The children maintained the Arabic word order in their translations, which is similar to the findings of some L_2 acquisition studies (Ravem, Butterworth, and Adams) on translation tests. Such a strong influence of the native language on the children's translations was not expected, considering the previous analysis of their free speech that did not show marked interference from Arabic. The children's data also revealed that they sometimes would give an English word which is not a lexical equivalent of the Arabic word, but a member of the same semantic category. These two findings (preservation of Arabic word order in translation and word substitution based on semantic relationships) were prevalent in the present study.

Interference from the children's first-language grammar was obvious in the sentence, 'His family name', where the Arabic order was kept when Tarek translated it into English as 'The name of family him'. Similarly,

the sentence 'Your mother's name' was translated by Ali and Adel as 'The name of mother you', and by Sami as 'The name of you mother'. Also, in Arabic the adjective follows the noun it modifies, which is the reverse order of English. Ali, Adel, and Tarek produced 'bar chocolate, book English, and game soccer' on the translation tests. Sami produced 'English book, bar chocolate, and game soccer'. These results did not conform with the children's spontaneous data, which basically did not contain errors in word order interference from Arabic. Therefore, the use of the Arabic language stimulus to facilitate the children's understanding of what they respond to had a strong influence on the sentences' word order in translation.

In addition, the Arabic model sentences had influenced the subjects' translations in other aspects. There were instances of mixing and word-for-word translation. There was lexical as well as phonetic mixing. Lexical mixing occurred when the children kept certain Arabic words in their English translations, such as 'with whom', 'bicycle', and 'ice cream'. Phonetic mixing was evident in the children's use of Arabic pronunciations for 'Shobrite', 'brincibal,' 'tabe recorder', 'brogram', 'efery', 'jym', and so on. Thus, the |p|, |v|, and |dʒ|, which have no equivalent sounds in Arabic, were replaced by |b|, |f|, and |ʒ|. This

type of phonological interference, that is, borrowing sounds from the Arabic language when constructing the English constructions, was found in much fewer instances of spontaneous speech data.

Three subjects also made word-for-word translations by saying 'all the week' instead of 'every week'. The copula 'be' presented difficulties for the Arabic-speaking children during period I of the observations. The verbs 'got' and 'have' were used instead, because their equivalents in Arabic function in a few cases where English would require a form of 'be'. The use of 'be', particularly in questions, increased and became consistent in the children's speech in periods II and III. Therefore, during period I the word 'got' was mainly used in place of 'be' with reference to age. However, in the translation tests given at weeks 9 and 13, Ali and Adel translated the sentence 'Ask him if he is six years old and if Ali is seven years' as 'You got six year and Ali got seven year'. Tarek used 'have' instead of 'got', and Sami used 'is' then changed to 'got'. Thus, the words 'have' or 'got' were used in place of 'be', when 'be' was frequently produced in spontaneous speech. There were also many lexical substitutions. For example, 'Shoprite' was produced instead of 'store', 'basketball' was used instead of 'gym', and the word 'game' was changed to 'bingo'.

Also, 'wash' was changed to 'put water' and 'couch' was changed to 'chair'.

The above discussion makes it clear that caution must be exercised when using data derived from translation because it reveals interference from the children's native language which is not normally observed in their spontaneous speech. However, in addition to the previous findings, the researcher tried to obtain further information from translations about the subjects' development of negative, interrogative, and the auxiliary system. After comparing the children's translations of the model sentences to their speech data collected in the study period, it was obvious that there were no significant differences between the two regarding the children's development of English syntax. The following examples taken from the four subjects will help clarify this point:

	Free Speech		Translation
4.141a	I no like cookie.	4.141b	I no like coffee.
4.142a	I no got black.	4.142b	I no understand name you family.
4.143a	We go now?	4.143b	You like ice cream?
4.144a	You playing?	4.144b	You drinking cola?
4.145a	What you doing there?	4.145b	What he doing tonight?
4.146a	We no ready.	4.146b	You no sell your car.

4.147a	You don't know nothing.	4.147b	I don't know name of you family.
4.148a	You want to do it?	4.148b	You clean your car all the week?
4.149a	Where you get the pencil?	4.149b	Where you go tonight?
4.150a	He don't have big car	4.150b	I no sit all the day in my chair.
4.151a	She no like you?	4.151b	You no go Shoprite tomorrow?
4.152a	What he want?	4.152b	What you watch on TV yesterday?

Berko's Morphology Test

An oral version of Berko's morphology test (1958) was given to the children in the last week of the study period. Its objective was to trace the children's acquisition of English morphology rules after a few months of learning the second language. For this purpose, a number of nonsense words were invented, following the rules for possible sound combinations in English. If the test had contained real words, the child might have been able to give the correct forms. This would not have indicated that the child had actually internalized the grammatical rules because he could have memorized

the form of the word. If the child had a productive rule he would generlize and use it when encountering new words.

The test consists of twenty-seven problems, each accompanied by an illustrative picture. The items deal with aspects of English morphology, including inflectional endings (the formation of plural nouns, third-person singular, singular and plural possessives, the progressive, past tense, the comparative and superlative of adjectives, and the diminutive), and word derivations and compounds. The researcher would give several sentences and the child would solve the presented problem by providing the appropriate modification.

The researcher gave an example of how the subjects were expected to respond to the test items because some did not seem to understand the task. She also found it necessary to comment on the imaginative animals and various pictures to hold the children's interest. The child, for example, was shown a picture of an imaginative animal and then a picture of two of them. The researcher would say, 'This is a gutch. Now there is another one. There are two of them. There are two _____'. The child was required to give the plural of 'gutch'. If he had internalized the grammatical rule for forming English plurals, he would be able to add the allomorph |ðz| and say 'gutches'.

Except for 'ring' and 'melt', there were two possible answers for the past tense formation for all of the English examples given ('bing', 'gling', 'spow', 'mot', and 'bod'). Generally, the answers were as in 'rick', for example, either 'ricked' or 'was ricking'. In the case of the past tense of 'ring' there were three possible answers: 'rang', 'was ringing', and 'ringed'. None of the children responded with the first two choices, but Ali and Tarek said 'ringed'. Although this form is not acceptable in terms of an adult's grammar, it indicates that the children are aware of the formation of the regular past. 'Melted' was the only possible answer to the question, 'What happened to the ice?' because the picture showed a puddle of water, the result of melting. None of the four subjects responded with the correct past tense of 'melt', although Ali supplied the correct past tense of the parallel nonsense verb 'mot'.

Similar results appeared with the allomorph |-ɔz|, which is added to a word ending in a sibilant to form the plural of a noun, the possessive, or the third-person singular. For example, Tarek produced the correct plural of 'gutch' ('gutches') but failed to give the plural of the other cases requiring the addition of |-ɔz|. Ali and Adel supplied the correct plural of 'kazh' but could not provide the other |-ɔz| endings.

Sami was the only child who responded appropriately to most of the items such as 'loodges', 'nazzes', glasses', and 'tasses'. However, he did not give the expected plural of 'gutch' or 'kazh'.

Although the same inflections are added for pluralization, third-person singular, and the possessive, it is obvious that the children acquire its use for the plural before the possessive. For example, three children (Ali, Tarek, and Sami) formed the plural of 'wug' correctly by adding |-z|, but only Sami added the morpheme to 'wug' to form the singular possessive. On the other hand, the test showed that the four children were more able to form the plural possessive than the singular. These results, however, could not be reliable because the subjects were given the plural form of the nouns, which happened to be the same as the plural possessives ('wugs'' and 'biks''). It is more likely that the children imitated the researcher, since nothing is added to a plural noun.

The morphology test also showed that the Arabic-speaking children have not internalized the rules for derivation and compounding. When they were asked what they would call a tiny 'wug', only Sami supplied or derived the correct diminutive 'wuggie'. Ali, Adel, and Tarek responded with 'baby wug' and 'little wug'. However, none of the four children produced the compound

'wughouse' in response to the question, 'What would you call a house that a wug lives in?'. In the picture, the 'wug's' house is located on the mountainside, therefore Tarek and Sami's answer 'mountain-house' is considered an acceptable noun compound. Ali also gave the sensible answer, 'his house'. In addition, neither the subjects of Berko's study nor the Arabic children could derive the adjective 'quirky' from the noun 'quirk'. Only Sami said that a dog with 'quirks' on him was a 'quirk dog'.

Adjectival inflections such as 'quirkier' and 'quirkiest' also seem to develop later. For example, the comparative 'quirkier' was not produced by any of the children. And only 1.2% of Berko's subjects could supply it. Similarly, neither in Berko's study nor in the present one did the subjects give the superlative form 'quirkiest' without the researcher first giving them the comparative. However, in this study, when the researcher first told the children the comparative form, Tarek was able to answer with the superlative. Sami said, 'The most quirky', which means that at the time, he had only one rule in his grammar for the formation of the superlative: 'the most' + adjective, since in adult grammar two-syllable adjectives or adverbs which do not end in |-y| or |-ly| keep their original form and are preceded by 'the most'.

In brief, Berko's morphology test showed that Arabic-speaking children learn the allomorphs |-z| and |-s| before they learn |-iz|, and that they acquire the past tense allomorphs |-d| and |-t| before |-ed|. Adjectival inflections, derivatives, and compounds also seem to appear later. These findings agree with the analysis of the acquisition of the same allomorphs in some L_1 and L_2 studies (Berko, Ervin, Adams, Heckler, and so on). It is important to note that there is evidence that the same grammatical rules seem to be internalized earlier in both first- and second-language acquisition. Percentages of the Arabic children's correct answers are present in Table 3 and are compared with those from Berko's subjects.

Table 3--Percentage of Correct Answers on the Berko Test

Inflectional Items	Allomorph	Arabic K and 1st-Graders	Berko's 1st-Graders
Plural			
glasses	|-əz|	25	99
wugs	|-z|	75	97
luns	|-z|	75	92
tors	|-z|	50	90
heafs	|-s| or |-vz|	50	80
cras	|-z|	25	80
lasses	|-əz|	25	39
gutches	|-əz|	25	38
kazhes	|-əz|	50	36
nizzes	|-əz|	0	33
Progressive			
zibbing	|-iŋ|	100	33
Past Tense			
binged	|-d|	50	85
glinged	|-d|	25	85
ricked	|-t|	25	73
melted	|-əd|	0	31
spowed	|-d|	0	59
morted	|-əd|	25	33
bodded	|-əd|	0	31
rang	|æ| <- |i|	0	25
Third Singular			
loodges	|-əz|	25	56
nazzes	|-əz|	25	29
Possessive			
wug's	|-z|	25	81
bik's	|-s|	50	95
niz's	|-əz|	25	46
wugs'	|-θ|	100	99
biks'	|-θ|	100	82
Adjectival Inflections			
quirkier	|- r|	0	1.2
quirkiest	|- st|	25	35
Derivation and Compounding			
zibber or zibman		25	16
wuggie or wuglet		25	0
wughouse		0	18
quirky dog		0	0

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This study was carried out to ascertain and describe the process of second-language acquisition in kindergarten and first-grade classrooms, where no formal English instruction took place. In these two classrooms, four children whose native language is Arabic were observed for five weeks. Observations continued out of school for an additional eight weeks.

The study also investigates the degree to which Arabic children at the age of six and seven could learn English as a second language simply through exposure. Three areas of English syntax were analyzed in depth. These were: negation and question formation involving particular auxiliary constituents, and the acquisition of morphological rules. Data were gathered through recording of the children's spontaneous speech and through the use of three standardized tests: elicited imitation test, translation test, and Berko's morphology test. In addition, other aspects of language communication were discussed, as they seemed to provide a clear

picture of second-language learning. These pertained to the children's communicative strategies and the ways with which they compensate for language deficiencies.

A number of conclusions have been drawn from the present study. These conclusions are summarized below:

1. One of the most significant results is the similarity of the pattern of development between natural acquisition of English as a second language by an Arabic child and first-language acquisition.

2. Also there is a distinct similarity between the developmental stages of an Arabic child's acquisition and those found in other L_2 studies.

3. There is no evidence for a marked interference from the children's first language in their English sentence construction. However, there have been a few cases where the use of certain structures could be attributed either to normal acquisition or to interference.

4. The general trend of the four children regarding the developmental stages in the three-month period are:

A. In negation:

a. Use of 'no' in negation

b. Use of double negatives

c. Omission of the aux copula

d. Use of 'not' mainly in sentences where the verb 'be' is required

e. Use of 'do' as a tense carrier mainly in imperatives

B. In questions:

a. Use of rising intonation and declarative word order

b. Lack of inversion

c. Non-use of tense marker 'do'

d. Omission of auxiliary 'be'

e. Use of copula in period III

C. In specific syntactic structures:

a. The progressive inflection 'V + ing' appeared first without the copula and then was produced with the copula in period III

b. The use of copula increased, mainly in questions, in periods II and III

c. Regarding the past tense:

i. Irregular verbs were produced first and frequently

ii. The formation of the regular past was overgeneralized

iii. Regular past forms were seldom produced

d. Future inflection as well as verb + en forms were not produced at all

e. Plural |-s| began to be used in period III

f. Possessive |'s| did not appear at all

g. Third-person singular |-s| appeared only at the end of period III

h. 'Do' was mainly used as a transitive verb and not as a tense carrier in the affirmative

i. 'Can', 'can't', and 'could' started to be produced at the end of the first observation period

5. Sami (one of the four children, or 25% of the data) showed similar developmental stages to those mentioned in No. 4 above, but significantly different results regarding the rate of progress. Generally, he started at a much slower pace, then ended up even with the other three subjects in some syntactic features and further developed in others, as discussed in Chapter IV.

6. The four children used the following communicative strategies in the process of English language acquisition:

A. Repetition and intonation

B. Gestures

C. Noises

D. Simplification

E. Imitation

7. Three standardized tests have been administered. These tests were:

A. Elicited Imitation test. The results revealed that the subjects modified most of the model sentences in the three imitation tests to agree with their own grammar during that period of test.

B. Translation test

a. Revealed interference from the children's native language which was not normally observed in their spontaneous speech

b. The test was another important and useful source of information on the children's syntactic development

C. Berko's morphology test

a. It showed that Arabic children acquire certain syntactic allomorphs in a way similar to most L_1 and L_2 learners

b. The subjects learned the allomorphs |-z| and |-s| before they learned |-iz| and the past tense allomorphs |-d| and |-t| before |-ed|

Recommendations for Further Study

The present research has provided general information regarding how Arabic children may go about acquiring English as a second language in a natural environment. It was an observational study that considered the stages of language acquisition, the rate of children's progress, and the variation in the subjects' data. Interesting and significant results were obtained. These results, however, cannot be generalized, considering the effects of different variables involved in such a study. In order to come up with more definitive conclusions, this study could be extended into several directions that are suggested below for future study:

1. A longer observational period is necessary to cover a larger span of development.

2. This study can be replicated with other Arabic subjects to substantiate the present findings.

3. It would be useful to select a wider range of children's ages to study the age effect on the data.

4. The study may also be extended to Arabic adults with different educational backgrounds. The subjects of the present study did not have formal training in Arabic grammar, and the question arises as to whether this factor may have had an effect on their approach to learning English.

5. The classroom in which formal English instruction is given should be observed simultaneously.

6. Human factors such as intelligence, introversion, gender difference, and others could also be considered in further studies.

7. Exact school regulations should be ascertained before the study begins, and an effort be made to involve and raise the school administration's interest in the project. In this way, the researcher would be able to engage in a greater number of aspects of the study.

It is hoped that the present study will encourage further fruitful investigtions in this area.

APPENDICES

APPENDIX A

Data obtained from Tarek's free speech in the period April 11 - July 11, 1986.

April 11, 1986

Me no draw.

That no Ali.

Is red.

Brown.

I got one cat.

April 14, 1986

No, no pink.

I don know.

No, he no milkman.

I got blue.

purple.

look at the book.

I no can see the family.

No, two fish.

What that.

I no like fish.

No, fish.

eat (an answer to: "What's she doing?")

I got five (an answer to: "How old are you?")

No me.

Yes, mine I blue.

No, black.

Get a pencil.

That, blue.

April 18, 1986

Yellow (an answer to: "What color is that?")

Red. Orange. Oh, yellow, no color.

Black.

No.

This dress.

That cat.

That my balloon.

The girl like cookie.

This blue dress.

April 21, 1986

I know. From the school.

That one?

What color?

Not here.

No come yet?

April 25, 1986

Ali eat cookie.

I eating cookie.

Look at this two flower.

This kite high.

He sweating, he is so hot.

The boy ran after (for chase) the dog.

This one have no water.

He throw and catch. Boy is got it.

He steal. (a response to a picture that displays a man with big bags of money)

Boy can swim.

That his dog.

The boy play with balloon.

The boy ate ice cream.

No, he cry.

That, that girl.

Many many lion.

Thats . . . color red.

That lion and lion and lion (for three lions)

We go now?

I know I do it.

Look at the dog.

I know. I know. Not you. Not you.

That they teacher.

She's thirsty.

The Christmas?

Oh, she sitting on the desk.

Hey, you, you, gimme two.

You have the boy jumping?

I have two surprise for Annahita.

I got a surprise him (for her).

April 28, 1986

A little boy (an answer to: "Who's this?")

Dog. The house (an answer to: "Where's the dog?")

To the house

Bike? Bike?

See the little girl room. Little girl.

Yeah, what |she| time?

Look at my flower.

This no flower.

My friend come to me today.

I know all of my friend.

I boy head. You buy (coloring his picture)

I got blue.

All a blue.

Yes. I finish.

May 2, 1986

This one big.

Today story?

He just wait to me.

He say you like some cookie.

I can see it . . . big. (describing a big picture)

I know what now.

That fly.

That a bird.

I don know. There no bus.

No, I cry. (for he cries)

Wanna go first.

Can't go.

Bus come and no can't got it.

I don know who talk a policeman.

Not like they.

Look it. I know it.

No this.

Talk. I know do it.

Go like that . . . oh, like that. Leave it!

No English. That's no English (refers to a boy that doesn't speak English).

One book.

That girl. She cry.

Look it. The she cry.

One pig. Two pig. Too many pig.

We go now?

May 5, 1986

Whats this?

This what color?

No, this blue. What color this?

Orange, no. This yellow?

Yeh, this is orange. And this one?

Pretty?

This one?

The bus to school.

No this. I do it.

I found it. I got it.

In house (an answer to: "Where did the dog live?")

No, no do no move.

K know that one. I got it here.

No say me. (Don't tell me!)

What you doing?

I win John. Go on. I beat you John.

May 9, 1986

Look, this is brown. Yellow, green and red.

No . . . no crayon.

This . . . milk (for cow)

Sleeping (an answer to: "What's he doing?")

Good morning. What time?

What your name?

That's baby?

No me. Red no more.

I want more star. I not got two star. Look. I got one star - like that.

I don have my birthday.

I no got sister.

Two. I got two brother.

I don know how to write the name.

Yesterday I go to the swing.

Go like that . . . (makes gestures for swinging) I go like this.

May 12, 1986

No talk in this.

This is the animal.

I got this animal.

No, not like that.

No, this animal.

Why he have it right there?

No, no black.

No, is red.

Two picture.

Time to leave?

Leave me my pencil. No take it.

I can write now.

He no wanna write. You wanna see?

I write. I write now.

You see that red? (points to a picture)

What you doing?

May 16, 1986

You no take it. That put in here.

Not girl. A boy. (an answer to: "Is this a little girl?")

No. Is an apple. (an answer to: "Is this an orange?") This is an apple.

Ah, you see is a carrot.

You go get it the yellow one. (To his friend)

On the chair. On the big chair (an answer to: "Where's he sitting?")

With two boys (an answer to: "Where's he?")

Go like that . . . (gestures)

You like? No. No. This is big.

Snowman? This is big snowman.

That?

I wanna go play.

Tina no playing.

Ali want crayon. He can't get crayon.

He no can't draw.

I wanna make that.

What that?

Oh, can't get paper. Can no, can't get paper.

Look it Mohammad.

Like that. Picture like that (makes gestures while describing picture of a girl)

Let me see. No look it.

The pencil. It broken.

No, not that pencil.

I no got that a dog. I no dog now. I no got.

You got two. One red. One blue.

He wanna no give me the crayon.

I can do that. I know do. I know do flower. Look it. I know do one. I wanna draw it.

May 19, 1986

Working (an answer to: "What are they doing?")

Sit down. (an answer to: "What's he doing?")

Yes. He hungry. (an answer to "What's he eating?")

Run . . . catch butterfly. I can't see the butterfly.

I found two crayon.

Grandma. Birthday. (an answer to: "What's this story about?")

Pencil. I want pencil.

Draw the picture. I want paper. (an answer to: "What are you doing?")

May 23, 1986

No me. No tell me.

That mine. That Ali. That Anna. (an answer to: "Whose paper is this?")

He drawing.

He draw picture.

I like draw that. That blue, red, white.

I don wanna draw that.

I don know. I don know house.

That not mine.

I got a hurt.

I go over here. (I will . . .)

Put my name. I can't do it. I don know nothing.

He say. He say. What he say that?

You see red? (describing the girl's red dress in the picture)

Put water on the flower (an answer to: "What's she doing?")

She no happy.

Tree. She like tree. (an answer to: "Where's she?")

Where the mother?

I don see the mother.

May 26, 1986

I no have dinner.

I don no have it. I don no have it now.

You have for Ramadan (asking his friend if he got

a present for Ramadan, which is a holy Islamic month and feast)

I don like play now.

No, not my story. (an answer to: "Is this your story?")

I don wanna go outside.

Oh, it raining! I wanna go outside.

No, my coat this. (an answer to: "Is this your coat?")

I know do the car.

Look it. Now go like that (car noise)

Not my car. (for my car is not like that)

I got yellow. I got three orange.

What color that?

I finish. Now, I go do another picture. I go do this picture.

You color no my picture.

No, hair black. (describes a girl's hair)

Mom! No put down mine.

Look it. That nice. Do it again?

No, not here. You do it like that (points to his picture)

May 30, 1986

I got this bike!

I have this bike.

He no have a nothing bike.

Let me see it.

I got bigger (refers to his brother's bike)

I have a one friend. He have a that yellow. Yellow bike.

You can do tape recorder (you can play . . .)

I can do it.

I can't do it.

You know what that (points to a big tree)

We got that in my house in Egypt.

You wanna try this?

The car in school.

Look this. Flower come from the tree.

Hurt. Fell down (an answer to: "What happened to your foot?")

I got two. I got two.

June 2, 1986

I never see like that lion. That big.

I haven't like that.

C'mon, open up. Open it.

I know what is it. Chocolate.

Eat. No me.

Ali, that your? (asks about a book)

I go get three crayon. I paint it. I know.

I can play now.

Ali. Go away!

I like that. You need me? You got some mine

(refers to his pencils)

I draw it. I finish. Is a dog. A baby dog.

Me first. Look it. Look it.

Me do that, do that one.

I do it. One minute. One minute (I'll do . . .)

I could do it two times. I do it two times.

I know read that one. I gonna read it.

I could do it. A minute.

June 6, 1986

You making a pig.

He draw. I know. I know whats that.

This is for me. Because he need this.

This ain't nothing.

That's difficult for draw.

No, no the picture of dog is this one.

I could do this?

I could take this?

You hurt my finger.

Where I gonna sit?

I wanna play with that. I wanna do it. I wanna do

it.

She fell down!

She crying! She cry!

Play (an answer by: "After I leave what you wanna do?")

No, six night (for I wanna play until six at night).

They playing, singing.

That you book?

June 9, 1986

Can I make my brother picture? (. . . brother's picture)

Here's you picture.

I tell you the story?

It's here. The story is here.

I can do my brother picture . . . my picture.

I gonna tell you about my mother.

I wanna show you picture.

This is a beautiful picture. Look!

I play football.

You playing too fast! (To his brother)

That a ball. That go in here. Look it.

Mohammad. Stop hitting me!

I can't catch the ball. Come on. Not fast!

I can get it very fast.

You have one at your house?

You know what that? (shows an insect)

No, I no play any more.

No, no me. That too fast for me.

I do that one. I gonna do that one. OK?

Three bird! What that? That one?

I got it. Look it. Two butterflies (repeats after his American friend). I like butterfly. I got it now. I gonna get that big one.

Time to go. (repeats after the investigator)

June 13, 1986

You wanna do this one or that? (refers to two books)

She sit and play the swings (describes a picture).

This one bigger?

This two are not.

Those are not bigger.

Oh no . . . they're not big (describes a picture of three cats).

Why the girl is in the garden? To get flower.

Whose this?

But why . . . mother is not in the house (still talking about the story's pictures).

She swing fast!

Let's see this one.

I no want that.

My mother don't be here (won't).

Do it like that. Draw it like that. Those things go like that (gestures).

He can have this (to his brother).

No, not can have this.

He can come over here and play with me.

Where she go?

She goes there?

Why she go?

I going now. What you eating?

Want to help you? (asks a friend if he needs help in collecting his toys)

I go get coke?

You coke? (You want coke?)

Now we playing game? What game?

June 16, 1986

He don't play with me no more.

He play with him a lot.

You have 3 ball. Gimme one. Better than the bike.

Let me show this word. Can you keep my book. I'm leaving.

You know that story?

He don't know it. That story. He know nothing.

You know the story? OK, you know this game? Like that? You know what that game?

No, know it.

I'm not gonna play with you. I no want. I want that one. What you doing? That ain't no big ball. That you Souheila?

My brother, he fall . . .

No, not that game not again.

Oh, I like that. Flower and flower.

You don't got any flower?

I got this white.

I can give you flower. What color?

June 20, 1986

What's that?

You no want to go Shoprite?

I don't want. No, I don want any cookie.

I can make one.

He go to his house today? (asks about his friend who's not in the playground yet)

Can I have cookie now?

That car . . . I gonna buy a car.

What that? There something yellow.

He got bike. Blue bike.

We going to shopping?

No, that no good. That stealing. (talks to his brother)

OK. I can play this. No you, no play like that. I gonna kick you. I won this game! I won! I

won! We gonna get him!

I no wan be your friend. No, we no play. We gonna go softball. All the boys here?

I give you two cookies.

June 23, 1986

I can do that. Mohammad, what you doing here? That my ball. You know his sister? Him. Do his picture. That his sister. That his. I know her.

I is here. I gonna do it again Miss Sabra. No again. I can do flower again. I wanna play hopping.

I go that way and that way. I go like this and like that (gestures)

I can hop no more. I haven't nothing like that. He got my book.

What she say there? What say there?

That's a big big fly.

Yeah, I know how to make my brother picture.

My brother Mustafa. The same name my friend in Cairo.

I get chocolate (I want)

Today. I go to the playground.

Look, what he making.

Look at my father car.

I know how to drive it.

You wanna play.

That your teddy bear.

He be mine (in my team).

I gonna play right here.

Look out the kite. Let take that to Miss Souheila. Let give that to her.

Gimme my cookie, you no want it.

You know what he tell me.

That your kite.

June 27, 1986

(Counting candies). I wan it. My brother get four. I got five. Wait. I get four. Everybody get four. You got five. No, I got four.

No, I make a tree . . . you make a horse. (draw)

I don wanna play now.

Look, Ali make this? Is a horse?

How you know? How come my book?

I did a tree. No say me. That too hard.

Naughty, what naughty?

That mine. Who got it? You?

You know what color? Blue. I gonna do it blue or red.

Who gonna gimme my red. Who gonna gimme . . .

I can't have this. I can't have.

How you make this?

I not gonna do it orange.

Oh, no not that. You know what? I need purple.

You draw your picture. I draw my picture. You dumb! I finish. What to put the colors (where).

My . . . again. Wait a minute. You got two pictures. You want two more?

What you look for?

What you laugh about?

How you gonna make this?

He say pen.

The boy fall the swing.

I could do this.

I got that butterfly. I got a big one my friend.

I go show you. Right over there.

No there. That too big.

I can't believe it. That too big.

Don't tell me no. Playing. Now my turn. You can't play. Let's play. He can't play. The boy want to go to the swing. He going to swing.

The bus go!

Why they are here? What for?

June 30, 1986

I got clock . . . like that (looking at his watch)

Mine is not the Seiko.

Know my little brother? You know my brother? (To his friend) How you know?

Whats he play here?

What he read?

He is a boy? Why he put that? (He refers to a picture of a boy wearing mask)

Where his brother?

He brother don play.

And this his bike? What he get this? Why we don't go to the swing?

You know, he say a bad word. I know whats that word in Arabic.

What she get in the purse?

He look sad. He look mad.

July 4, 1986

I think he's hiding (repeats after researcher)

I help him. But why he look mad? Look his, his face (points to his friend's face). Like crazy, like this (gestures).

There his bike?

That little boy got a bike (refers to a picture)

Look his hands. Why his hands go yellow? (refers

to a lion picture). He close his eyes.

The other heads don't look this. Because they're not lions.

This like a bird. But this big. All are bigger. I don scare of him. He don scare. But the boys are scare.

He no have a ball (refers to Ali).

He is on the swing.

July 7, 1986

Can you draw it for me?

Whose is this on?

He don wanna play someplace to school?

Miss Souheila want me. She need me.

What were you doing?

Reading some stories.

I got one back home (book).

Who is it? I can make his picture. What have here?

My brother say me to go like that (swings). Then I get tired. He told me to go like that. Higher. He don know nothing. Wan me to swing with him? Look how he higher. He go more higher. Look how higher he is. I'm going more higher. I'm the same higher now. I not get off now. I no have to get off.

I don wan nobody to push me.

I didn't did that. He did.

I know how to make a kite.

There ain't a big fly like that. This is a big, big fly.

What you say?

Why she have to be like that. She swings over there. How do she swing like that. This ain't the same fly.

July 11, 1986

Where his bike?

Wait, I can ride (with you . . .)

We already see it. The bike goes sh ... sh ... sh and I run so fast.

You know whats a zoo? You know where . . . where lions and all that and all monkeys.

Lion have big hands.

No, not those who have these things. No those things. Not those kind . . . (describes picture of elephants).

What do you need those? What that? In the playground is that one? The bike is this one? (points to the playground).

Can I use this paper? On this one the yellow are. I forget it was the elephant.

Here the bike. Who he the bike (whose bike is this?)

Why he look like the monster. The monster? (makes fun of his brother's drawing).

He have this big ball and he throw it over there.

Why he don't play? Are you going to the shop? Where he going?

Why he's mad? Mustafa? Yeh.

You know the word wolf? I know the word wolf.

The wolf in the bed (refers to the story of "Little Red Riding Hood"). His nose is bigger. His nose is bigger.

What he not doing nothing. (an answer to: "What's he doing?")

He have a big nose, and big eyes, and big arms.

No, I didn't take nothing.

No, me stronger than the wolf. No, me bigger than the wolf.

Who . . . where Mustafa? He cry?

Let turn the page. Let see how to her house (how she will get to her house).

Wolf like a granma. Yeh, like a granma.

I don know (an answer to: "Where are the men?"). Now your turn (to this brother). No, you finish?

Whats that thing. The name. The name. That. Look it. One stick. Two sticks. Four sticks in a hand (refers to a picture in the story). And

two feet. And mans feet. That who got big ears? I know who he is. He is a wolf.

The girl, the granma, and the wolf (an answer to: "Who was in the story?").

You know, you know nothing (speaking to his friend).

APPENDIX B

Elicited Imitation Tests

Test I

I showed you the book.

I am very tall.

It goes in a big box.

Read the book.

I can see a cow.

I will not do that again.

I do not want an apple.

Do I like to read books?

Is it a car?

Where does it go?

Where shall I go?

He said that I am too old.

They played with big yellow balls.

Ahmad wants to riding the bus.

Muna and Ahmad went to Shoprite.

The boy who running fell down.

Ali wants to play in the yard.

Ahmad could have lost the game.

Two of the boys rode their bicycles.

Mine old green coat has holes.

Not Tina but Ali speaks English.

Seven of the cars were bought.

The teacher who teaches English is sick.

Mother, father and ate dinner.

Mohammad did not have a bike last year.

Mrs. Smith but Sally is from Panama.

How hot is it today?

We have gone to the mall yesterday.

What kind of exercises did you do?

What did you do in gym?

I don't know his name?

Who speaks to you here?

What does Mrs. Smith teach?

Do you play bingo with Ali?

How many times did Ali win?

Can Ali beat you in bingo?

He is your brother and your friend.

What time do you go home today?

Do you have a lot of homework to do?

Do you speak English with your mother?

Will you go to Meijer's this afternoon?

Is it sunny outside?

What is she doing?

What TV channel do you watch?

How many hours do you watch TV every day?

Do you watch cartoons?

She has one toy?

Is your sister's toy big?

I like to play in the yard.

I always play on Saturdays.

Can you ride your bicycle?

She played with me in the yard.

Do you know where Ali is?

Test II

Michigan has many lakes.

Cats can drink milk.

The big boy is eating some ice cream.

Ali who cried came to my party.

The boy is eating and singing.

There are the red bicycles.

The students at school can play games.

The story the boys read is very sad.

Where, where are you from?

How do you say this in English?

Michigan is very good in baseball.

Tomorrow there will not be any English classes.

The store the man bought is in East Lansing.

The red desk is not here and the black desk is here.

Ahmad likes big girls and Ali likes Chicago.

The chair is white. The pencil is white.

The red desk and the black desk are in the classroom.

Mrs. Smith eats at McDonald's and Tina eats at the Taco Bell.

The pencil and some paper are on the desk.

The yellow chairs and yellow pencils are at the school.

There is a big dog, and there are five students from Saudi Arabia.

I gotta go and the red bicycle is in the room.

The bird ate the bread and the ice cream.

The bicycle is red and white and is new.

The boy rode the bicycle, played chess, and spoke English.

Cairo has many people, and it is the capital of Egypt.

The boy and his friends are eating, singing, and swimming.

The game the boys are playing is bingo.

When is your birthday? Where are you from?

Ahmad, who is from Egypt, is a student at school.

He knows how to speak English, but does he read it?

The girl in the little red dress sat on the chair.

The teachers are in the office and are eating chocolate.

Three of his friends are very nice.

You have too much ice cream to eat.

I'm not old, but I don't have any hair.

He eats eggs, chicken, bread, milk, ice cream.

All my friends are studying today, and they're busy.

The boy who playing fell down.

The school has many big classrooms.

Ten of the cars were bought.

The student has a pencil, but can he write?

The girl asked the boy what he was doing?

The game will be in school, but I won't go there.

She asked me to close the door, window and box.

Tomorrow morning they will give him the big yellow balls.

The houses are green, white, red, yellow, blue.

Michigan is colder than Egypt but is smaller.

The book the boy is reading is very good.

Test III

Who is Ali and where is he from?

The book is on the chair, the chair is in the room.

He knows how to play chess. But can he beat Ali?

The children are sitting in the classroom making their toys.

Two of my friends, one of my teachers, and my mother speak Arabic.

He likes to ride bicycles very much.

What time will he give me mine book?

I don't like Tina and I don't speak to her.

He is riding, singing, talking, drawing today.

If I write a letter, do you want to read it?

The girl who talking didn't see me.

Five of the books on the desk I bought.

The people in Cairo speak Arabic and are very intelligent.

Tomorrow at 9 o'clock I don't have a class.

The boy has a bicycle, but can he ride it?

Yesterday he opened the door when she closed the window.

The girl told the boy that she didn't understand him.

Tomorrow I'm going to go to Detroit, and I'm coming back Thursday.

She asked the teacher to tell me where to go.

Last week the big yellow balls were given to me.

I don't watch TV when I'm studying.

Don't you know when you went to Detroit?

You didn't understand me but don't go home now.

Do they go to school on the bus everyday?

Are you sitting in your chair now?

We don`t ride our bicycles to school when it's raining.

They are walking, talking, riding, singing.

Don't you think that I'm going to go to Egypt?

He doesn't like to watch wrestling on Friday night.

Didn't they tell you to go home on the bus?

Can I go to play with my friends?

I like to swim, ride my bicycle, watch TV.

When are you going to visit your friend?

Does he look like a student, a teacher, or a doctor?

Why don't they talk to Mr. Smith if they want to go?

Now he's walking to the playground with his dog.

We don't like to buy a new car every year.

How much milk do you drink every week?

Did they play with him before I came back?

Which country makes the best cars, Japan or Germany?

They're going to go shopping at 5 o'clock.

Am I drinking your coffee and eating your eggs?

How are you going to go to Saudi Arabia?

Can't you do it?

APPENDIX C

Translation Test

(Sentences were given in Arabic, and then translated into English by the subjects).

Negative Statements

1. Tell him not to sell his car.
2. Tell him that you don't know his family name.
3. Tell him that you don't sit on your chair everyday.
4. Tell him that you don't like coffee.
5. Tell him that you don't know your friend's name.
6. Tell him that you won't go to the store tomorrow.
7. Tell him that Ali doesn't beat you at any game.
8. Tell him that you didn't go to gym today.
9. Tell him you're not sitting on your chair.

Interrogative. Yes/No

10. Ask him if he drinks cola.

11. Ask him if he likes ice cream.
12. Ask him if he is a 7-year-old and if Ali is an 8-year-old.
13. Ask him if he knows what your mother's name is.
14. Ask him if he likes to ride a bicycle.
15. Ask him if he washes his bicycle every week.
16. Ask him if Mrs. Smith has a tape recorder.
17. Ask him if Mrs. Smith likes ice cream.
18. Ask him if he rode his bicycle yesterday.
19. Ask him if he studied English in school.
20. Ask him if he saw the program called "Three's Company" on TV.
21. Ask him if he ate breakfast yesterday.
22. Ask him if he can swim.
23. Ask him if he has eaten already.

Neg-Interrogative Yes/No

24. Ask him if he doesn't go to gym anymore.
25. Ask him if he didn't give his book to Mrs. Smith.
26. Ask him if he isn't going home.

Interrogative - What/What + Do

27. Ask him what he read yesterday.
28. Ask him what he did yesterday.

29. Ask him what he saw on TV yesterday.

30. Ask him what he will do tonight.

31. Ask him what he's going to do tomorrow.

Wh-Interrogative - Where

32. Ask him where he buys chocolate bar.

33. Ask him where Mr. Smith went to school.

34. Ask him where he's going tonight.

35. Ask him where he will read his English book.

Wh-Interrogative - Who

36. Ask him who the principal is.

37. Ask him with whom he's going to study tomorrow.

38. Ask him who he saw yesterday.

39. Ask him with whom he talked yesterday.

Wh-Interrogative - When

40. Ask him what time he returned from Detroit.

41. Ask him when you can see a soccer game.

42. Ask him when he goes to bed.

43. Ask him when he ate dinner yesterday.

44. Ask him when he will study Arabic.

Wh-Interrogative - Why + Neg.

45. Ask him why he doesn't read.

46. Ask him if he doesn't go to school on Tuesday.

47. Ask him why he doesn't have a bicycle.

48. Ask him why that door doesn't open.

49. Ask him why he doesn't live in Detroit.

50. Ask him why he didn't go to Detroit today.

APPENDIX D

Berko's Test (1958)

Each item is accompanied by a pictorial representation of the objects and/or actions described.

1. Plural. One bird-like animal, then two. "This is a wug. Now there is another one. There are two of them. There are two _____."
2. Plural. One bird, then two. "This a gutch. Now there is another one. There are two of them. There are two _____."
3. Past tense. Man with a steaming pitcher on his head. "This is a man who knows how to spow. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he ____."
4. Plural. One animal, then two. "This is a kazh. Now there is another one. There are two of them. There are two _____."
5. Past tense. Man swinging an object. "This is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

6. Diminutive and compounded or derived word. One animal, then a miniscule animal. "This is a wug. This is a very tiny wug. What would you call a very tiny wug? This wug lives in a house. What would you call a house that a wug lives in?"
7. Plural. One animal, then two. "This is a tor. Now there is another one. There are two of them. There are two_____."
8. Derived adjective. Dog covered with irregular green spots. "This is a dog with quirks on him. He is all covered with quirks. What kind of dog is he? He is a_____ dog."
9. Plural. One flower, then two. "This is a lun. Now there is another one. There are two of them. There are two_____ ."
10. Plural. One animal, then two. "This is a niz. Now there is another one. There are two of them. There are two _____ ."
11. Past tense. Man doing calisthenics. "This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____ ."
12. Plural. One animal, then two. "This is a cra. Now there is another one. There are two of them. There are two _____ ."

13. Plural. One animal, then two. "This is a tass. Now there is another one. There are two of them. There are two _____."
14. Past tense. Man dangling an object on a string. "This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."
15. Third-person singular. Man shaking an object. "This is a man who knows how to naz. He is nazzing. He does it every day. Every day he _____."
16. Plural. One insect, then two. "This is a heaf. Now there is another one. There are two of them. There are two _____."
17. Plural. One glass, then two. "This is a glass. Now there is another one. There are two of them. There are two _____."
18. Past tense. Man exercising. "This is a man who knows how to gling. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."
19. Third-person singular. Man holding an object. "This is a man who knows how to loodge. He is loodging. He does it every day. Every day he _____."
20. Past tense. Man standing on the ceiling. "This is a man who knows how to bing. He is binging. He did

the same thing yesterday. What did he do yesterday? Yesterday he _____."

21. Singular and plural possessive. One animal wearing a hat, then two wearing hats. "This is a niz who owns a hat. Whose hat is it? It is the ____ hat. Now there are two nizzes. They both own hats. Whose hats are they? They are the ____ hats.
22. Plural. A bell. "This is a bell that can ring. It is ringing . . ."
23. Singular and plural possessive. One animal wearing a hat, then two. "This is a wug who owns a hat. Whose hat is it? It is the ____ hat. Now there are two wugs. They both own hats. Whose hats are they? They are the ____ hats.
24. Comparative and superlative of the adjective. A dog with a few spots, one with several, and one with a great number. "This dog has quirks on him. This dog has more quirks on him. And this dog has even more quirks on him. This dog is quirky. This dog is _____. And this dog is the _____."
25. Progressive and derived adjective or compound. Man balancing a ball on his nose. "This is a man who knows how to zib. What is he doing? He is ____. What would you call a man whose job is to zib?"
26. Past tense. An ice cube, then a puddle of water. "This is an ice cube. Ice melts. It is melting.

Now it is all gone. What happened to it? It_____ ."

27. Singular and plural possessive. One animal wearing a hat then two. "This is a bik who owns a hat. Whose hat is it? It is the_____ hat. Now there are two biks. They both own hats. Whose hats are they? They are the_____ hats.

REFERENCES

REFERENCES

Adams, M.S. The acquisition of academic skills and a second language through a program of total immersion. Unpublished M.A. TESL thesis, U.C.L.A., 1974.

Bailey, N., C. Madden and S.D. Krashen. "Is There a 'Natural Sequence' in Adult Second Language Learning?" Language Learning, 1974, 24(2), 235-243.

Bellugi, U. "The emergence of inflection and negation systems in the speech of two children." Paper presented at the New England Psychological Association Convention, 1964.

Bellugi, U. "The development of interrogative structure in children's speech." In K. Riegel (Ed.), The Development of Language Functions. University of Michigan Language Development Program Report 8, 1965.

Bellugi, U. and Brown, R. (Eds.), The Acquisition of Language. Lafayette, Indiana: Purdue University Press, 1964.

Beniak, E. Aspects of the Acquisition of the French Verb System by Young Speakers of English and French in Quebec and Ontario. Laval University: International Center for Research in Bilingualism, 1984.

Berko, J. "The child's learning of English morphology." Word, 1958, 14, 150-177.

Bloom, L. Language Development: Form and Function in Emerging Grammar. Cambridge, Mass.: M.I.T. Press, 1970.

Bloom, L., Lightbown, P. and Hood, L. "Structure and variations in child language." Monographs of the Society for Research in Child Development, 1975, 40.

Braine, M.D.S. "The acquisition of language in infant and child." In C.E. Reed (Ed.), The Learning of Language. New York: Appleton-Century Crofts, Educational Division, 1971, pp. 7-95.

Brown, R. "The development of Wh questions in child speech." Journal of Verbal Learning and Verbal Behavior, 1968, 7 (2), 279-290.

Brown, R. A First Language: The Early Stages. Cambridge, Mass.: Harvard University Press, 1973.

Brown, R. and Bellugi, U. "Three processes in the child's acquisition of syntax." In Lenneberg, E.H. (Ed.), New Directions in the Study of Language. Cambridge, Mass.: M.I.T. Press, 1964, 131-162.

Brown, R., Cazden, C., and Bellugi, U. "The child's grammar from I to III." In Bar-Adon, A., and Leopold, W.F. (Eds.), Child Language, a Book of Readings. Englewood-Cliffs, N.J.: Prentice-Hall, 1971, 382-424.

Brown, R. and Fraser, C. "The acquisition of syntax." In C.F. Cofer and Barbara J. Musgrave (Eds.), Verbal Behavior and Verbal Learning. New York: McGraw-Hill Book Co., 1963, 158-197.

Butterworth, G.A. A Spanish-Speaking Adolescent's Acquisition of English Syntax. Unpublished M.A. thesis, U.C.L.A., 1972.

Cancino, H., Rosansky, E.J., and Schumann, J.H. "The acquisition of English negatives and interrogatives by Spanish speakers." In E. Hatch (Ed.), Second Language Acquisition, Rowley, Mass.: Newbury House, 1978, 14, 207-230.

Cathcart, R.L. Report on a group of Anglo children after one year of immersion in instruction in Spanish. Unpublished M.A. thesis, U.C.L.A., 1972.

Cazden, C.B. "The acquisition of noun and verb inflections." Child Development, 1968, 39, 433-448.

Chamot, A.U. Grammatical problems in learning English as a third language. Unpublished Ph.D. thesis, University of Texas, Austin, Texas, 1973.

Chomsky, C. The acquisition of syntax in children from 5 to 10. Cambridge, Mass.: M.I.T. Press, 1969.

Chomsky, Noam. Syntactic Structures. The Hague: Mouton, 1957.

Chomsky, Noam. Aspects of the Theory of Syntax. Cambridge, Mass.: M.I.T. Press, 1965.

Corder, S.P. "The significance of learner's errors." International Review of Applied Linguistics (IRAL), 1967, 5 (4), 161-170.

Dato, D.P. American children's acquisition of Spanish syntax in the Medrid environment. ERIC ED053-631, 1970.

De Villiers, J., & de Villiers, P. "A cross-sectional study of the acquisition of grammatical morphemes in child speech." Journal of Psycholinguistic Research, 1973, 2, 267-278.

Dulay, H.A. and Burt, M.K. "Goofing: an indicator of children's second language learning strategies." Language Learning, 1972, 22, 235-252.

Dulay, H.A. and Burt, M.K. "Should we teach children syntax?" Language Learning, 1973, 23, 245-258.

Dulay, H.A. and Burt, M.K. "Natural sequences in child second language acquisition." Language Learning, 1974, 24, 37-53.

Ervin-Tripp, S.M. "Structures in children's language." Paper presented at the International Congress of Psychology, Washington, D.C., 1963.

Ervin-Tripp, S.M. "Imitation and structural change in children's language." In E.H. Lenneberg (Ed.), New Directions in the Study of Language. Cambridge, Mass.: M.I.T. Press, 1964, 163-190.

Ervin-Tripp, S.M. "Becoming a Bilingual." Working Paper 9, Language-Behavior Research Laboratory, University of California, Berkeley, 1968.

Ervin-Tripp, S.M. "Structure and process in language acquisition." Report of the Twenty-first Round Table Meeting. Monograph No. 23. Washington, D.C.: Georgetown University Press, 1970, 313-344.

Ervin-Tripp, S.M. and Miller, W. "Language development." In H. Stevenson (Ed.), Child Psychology. Chicago: University of Chicago Press, 1963, 108-143.

Flores, M. Early stages in the acquisition of Spanish syntax structures by a group of English-speaking children. Unpublished M.A. TESL thesis, U.C.L.A., 1973.

Fraser, C., Bellugi, U., and Brown, R. "Control of grammar in imitation, comprehension, and production." Journal of Verbal Learning and Verbal Behavior, 1963 2 (1), 121-135.

Gillis, M. The acquisition of English verbal system by two Japanese children. M.A. thesis, McGill University, 1975.

Grégoire, A. "L'Apprentissage du Language." In Bar-Adon and Leopold (Eds.), Child Development: A Book of Readings, 22. London: Prentice-Hall, 1971, pp. 91-95.

Hakuta, K. "A Preliminary report on the development of grammatical morphemes in a Japanese girl learning English as a second language." Working Papers on Bilingualism, 1974, 3, 18-43.

Hanania, E. Acquisition of English structure: a case study of an adult native speaker of Arabic in an English-speaking environment. Ph.D. dissertation, Indiana University, 1974.

Hatch, E. "Four experimental studies in syntax of young children." Technical Report II. Southwest Regional Laboratory for Educational Research and Development, Englewood, California, 1969.

Hatch, E. "Annual supplement to literature survey on child language." Technical Memorandum TM-2-70-15, Southwest Regional Laboratory for Educational Research and Development, Englewood, California, 1970 (a).

Hatch, E. "Some studies in language learning." University of California, Los Angeles, TESL Workpapers, 1972, 6, 29-36.

Heckler, E.E. The acquisition of English verb morphology by non-native speakers. Ph.D. dissertation, Michigan State University, 1975.

Huang, J. A Chinese child's acquisition of English syntax. Unpublished M.A. TESL thesis, U.C.L.A., 1971.

Huxley, R. "Discussion of syntactic regularities in the speech of children." In J. Lyons and R.J. Wales (Eds.), Psycholinguistics Papers. Edinburgh: University Press, 1966.

Ingram, D. "Early patterns of grammatical development." In R. Stark (Ed.), Language Behavior in Infancy and Childhood. New York, 1981, pp. 327-352.

Klima, E.S. "Negation in English." In J.A. Fodor and J.J. Katz (Eds.), The Structure of Language. Englewood Cliffs, N.J.: Prentice-Hall, 1964.

Klima, E.S. and Bellugi, U. "Syntactic regularities in the speech of children." In J. Lyons and R.J. Wales (Eds.), Psycholinguistics Papers. Edinburgh: University Press, 1966, 183-208.

Klima, E.S. and Bellugi, U. "Syntactic regularities in the speech of English." In Bar-Adon and Leopold (Eds.), Child Development: A Book of Readings, 38. London: Prentice-Hall, 1971, pp. 412-424.

Kniesner, M. Adult Acquisition of Bilingualism. Unpublished manuscript, Harvard University Graduate School of Education, 1967.

Krashen, S. Principles and Practice in Second Language Acquisition. University of Southern California: Pergamon Press, 1982.

Lambert, W., Just, M. and Segalowitz, N. "Some cognitive consequences of following the curricula of the early school grades in a foreign language." Report of the 21st Round Table Meeting, Monograph No. 23. Washington, D.C.: Georgetown University Press, 1970.

Larsen-Freeman, D. "The acquisition of grammatical morphemes by adult ESL learners." TESOL Quarterly, 1975, 9 (4), 409-419.

Larsen-Freeman, D. "An explanation for the morpheme acquisition order of second language learners." Language Learning, 1976, 26, 125-134.

Lenneberg, E. Biological Foundations of Language. New York: John Wiley and Sons, Inc., 1967.

Leopold, W. "A child's learning of two languages." Report of the Fifth Round Table Meeting. Monograph No. 7. Washington, D.C.: Georgetown University Press, 1954.

Lord, C. "Variations in the acquisition of negation." Papers and Reports on Child Language Development, 1974, 8, 78-86.

Maratos, M. "New models in linguistics and language acquisition." In M. Hall, J. Bresnan and G. Miller (Eds.), Linguistic Theory and Psychological Reality, pp. 247-263. Cambridge, Mass.: M.I.T. Press, 1978.

McCarthy, D. "Language development in children." In Carmichael (Ed.), Manual of Child Psychology. New York: John Wiley and Sons, 1954.

Menyuk, P. "Syntactic structures in the language of children." Child Development, 1963, 34, 407-422.

Menyuk, P. Sentences Children Use. Cambridge, Mass.: M.I.T. Press, 1969.

Milon, J.P. "The development of negation in English by a second language learner." TESOL Quarterly, 1974 8 (2), 137-143.

Ravem, R. "Language acquisition in a second language environment." IRAL, 1968, 6 (2), 175-185.

Ravem, R. "The development of WH-questions in first and second language learners." In Schumann, J. and Stenson, N. (Eds.), New Frontiers in Second Language Learning. Rowley, Mass.: Newbury House, 1975, 153-175.

Ravem, R. "Two Norwegian children's acquisition of English syntax." In E. Hatch (Ed.), Second Language Acquisition. Rowley, Mass.: Newbury House, 1978, 10, 148-154.

Rosansky, E. Second Language Acquisition Research: A Question of Methods. Unpublished Ph.D. dissertation, Harvard University, Graduate School of Education, 1976.

Slobin, D.I. (Ed.) A Field Manual for Cross-Cultural Study of the Acquisition of Communicative Competence. University of California, Berkeley, 1967.

Slobin, D.I. Suggested Universals in the Ontogenesis of Grammar. ERIC ED 043-001, 1970.

Slobin, D.I. and Welsh, C.A. "Elicited imitation as a research tool in developmental psycholinguistics." In C.A. Ferguson and D.I. Slobin (Eds.), Studies of Child Language Development. New York: Holt, Rinehart and Winston, 1973, 485-496.

Swain, M. "French immersion program across Canada." The Canadian Modern Language Review, 1974, 31, 117-129.

Thornhill, D.E. A quantitative analysis of the development of syntactical fluency of four young adult Spanish speakers learning English. Unpublished Ph.D. dissertation, Florida State University, 1969.

Trosborg, A. The acquisition of some complex syntactic structures in L1 and L2 learners (Easy to See, Promise, Ask/Tell). Unpublished Ph.D. dissertation, University of Aarhus, Denmark, 1982.

Vallette, R. "Some reflections on second-language learning in young children." Language Learning, 1964, 14 (394), 91-98.

Wagner-Gough, J. Comparative studies in second language learning. M.A. TESL thesis, U.C.L.A., 1975.

Waterbury, M. and Tucker, R. The acquisition of complex English structures by adult native speakers of Arabic. Unpublished Ph.D. dissertation, McGill University, 1978.

Wode, H. "The L1 vs. L2 acquisition of English interrogation." Working Papers on Bilingualism No. 15. Toronto: Ontario Institution for Studies in Education, 1978.

Young, D. The acquisition of English syntax by three Spanish-speaking children. M.A. TESL thesis, U.C.L.A., 1974.