COMPREHENSION AND PRODUCTION OF SUBJECT - OBJECT RELATIONSHIP IN REVERSIBLE SENTENCES BOTH IN ACTIVE AND PASSIVE VOICE OF TURKISH CHILDREN IN THE ACQUISITION OF TURKISH AS FIRST LANGUAGE

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ABSTRACT

In this study, the aim is to find the rate of comprehension and production of subject-object relationship in reversible sentences both in active and passive voice in a group of children who are acquiring Turkish as first language.

In Chapter I, the aim of the study is stated and some information about Turkish sentence structure is given.

In Chapter II, the literature related to the comprehension and production of subject-object relationship and word order is reviewed.

In Chapter III, the method, research design and the subjects are mentioned.

In Chapter IV, the data collected for the purpose of study is analyzed.

In Chapter V, the results of the data analysis is discussed.

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CHAPTER I

INTRODUCTION

1.1. Problem

Language acquisition is a fascinating process and has been a great concern of many disciplines all over the world.

Language acquisition is not marked just with the utterances a child produces. The language acquisition process begins with the production of non-speech sounds first, then single words and finally unique personal production. Within area of language development, awareness of word order by the child and the discrimination of the agent and the patient in reversible sentences both in active voice (1) and in passive voice (2) have been studied in great extent. (Chapman and Miller, 1978; Fraser, Bellugi and Brown (1963); Turner and Rommetveit, 1967.).

(1)	The car	is pulling	the truck.	- active voice
	agent		patient	
	The truck	is pulling	the car.	- active reversible
	agent		patient	
(2)	The cat	is chased by	the dog.	- passive voice
	patient		agent	
	The dog	is chased by	the cat.	- passive reversible
	patient		agent	

Word order such as location of the agent and the patient in a sentence indicates the semantic relations, in other words, shifting the places of the agent and the patient changes the meaning in the sentence. (Brown and Bellugi, 1964; Schelisinger, 1971; Ervin-Tripp, 1973). In English, word order gains importance since the semantic variation of the sentences are determined by the arrangement of syntactic elements within the sentences. For example:

(3) The cat is chasing the dog. - active voice
agent patient

(4) The dog is chasing the cat. - active reversible
agent patient

In these examples, two sentences involve the same elements: two nominals 'dog' and 'cat' and a verb 'chase'. In example (3), 'cat' is the agent and 'dog' is the patient. The noun preceding the verb is the agent and the noun following the verb is the patient. In (4) 'dog' precedes the verb and thus it is the agent and 'cat' follows the verb, therefore it is the patient.

In Turkish, however, word order is not so strict as it is in English. A morphological marker is required to denote the semantic variation. Lack of the morphological marker causes ambiguity as in example (5).

(5) Köpek kedi kovalıyor. (A cat is chasing a dog)
dog cat chase-ing
nom. nom.

In (5), 'köpek' is the agent and 'kedi' is the patient and it gives the meaning of "A dog is chasing a cat" but this sentence is ambigious since we can also denote that 'köpek' (dog) and 'kedi' (cat) are both agents to give the meaning "A cat and a dog are chasing". So, a signifier is required to denote the agent and the patient.

Therefore, in Turkish, it is the process of suffixation which signifies the semantic variations instead of word order as it is in English.

(6) Köpek kediyi kovalıyor. (The dog is chasing the cat.)
dog cat acc. chase-ing

This sentence involves the same elements as the sentence in (5) but the accusative suffix -i signifies the patient 'kedi' in the example (6).

Furthermore, in Turkish, the order of the agent and the patient can be shifted for pragmatic purposes or contrastive emphasis:

(7a) Köpek kediyi kovalıyor. (The dog is chasing the cat.)
dog cat acc. chase-ing

In (7a) köpek is the agent and kedi-y-i is the patient. The agent precedes the patient and comes right before the verb. The word kedi is the patient of the sentence and takes the suffix (-i) to indicate the defineteness of the patient, the emphasis is on the patient because, in

Turkish, the position immediately before the verb encodes focus.

(7b) Kediyi köpek kovalıyor. (The dog is chasing
cat dog chase-ing the cat.)
acc.

Example (7b) consists of the same elements as agent and patient as example (7a) but the order is different. The patient kedi precedes the agent köpek. The emphasis is on the agent.

(7c) Köpek kovalıyor kediyi. (The dog is chasing
dog chase-ing cat acc. the cat.)

In this example, the word order is the same in English as noun-verb-noun. The agent köpek precedes the verb and the patient follows the verb, and the patient is defined with the suffix -i. The agent köpek is emphasized in such constructions.

(7d) Kediyi kovalıyor köpek. (The dog is chasing
cat chase-ing dog the cat.)
acc.

In this example, the order is again noun-verb-noun but the patient precedes the verb, therefore, it encodes the focus and the agent follows the verb.

(7e) Kovalıyor köpek kediyi. (The dog is chasing
chase-ing dog cat the cat.)
acc.

(7f) Kovalıyor kediyi köpek. (The dog is chasing
chase-ing cat dog the cat.)
acc.

In example (7e) and (7f) the verb is followed by the agent and the patient. The emphasize is on the verb and such constructions are used rarely.

As can be seen in these examples, word order can be used in six different forms. In whatever order the agent and the patient are, the suffix determines the definete patient in each sentence.

In Turkish, as in English, three important rules have to be kept in passivization. The first one is that the object NP of the active sentence becomes the subject of the passive sentence; secondly, the verb is morphologically marked with the passive morpheme; and the last one is that the subject NP is in a agentive phrase with the postposition 'tarafından' (by) in the passive sentence. (8).

(8) Polis hırsızı kovalıyor. - active
policeman thief chase-ing
NP_1 NP_2
(The policeman is chasing the thief.)

Hırsız polis tarafından kovalanıyor. - passive
thief policeman by chase-passive morpheme-
NP_2 NP_1 present progressive tense
(The thief is being chased by the policeman.)

The type of passives that include all three properties are considered as "full passives". But as a native speaker, intuitively speaking, full passives are not used frequently in actual speech. They most occur in written language. (9)

(9)	Esnaf Sarayı	belediye başkanı	tarafından	açıldı.- full passive morp
	shopping center	mayor	by postposition adv. particle	open-ed open-passive past tense marker

agentive phrase

In actual speech, native speakers find full passives too long to use. Then, they prefer using passive sentences where the agentive phrase is deleted. The passive sentence type where the agentive phrase is deleted will be called "agentless passives". (10)(Balpınar, 1981).

(10) Öğrenci tahtayı sildi.-active (The student cleaned the blackboard.)
student board acc. clean-ed

Tahta silindi. - agentless passive
board clean-passive
nom. morp.-past t.

(The board was cleaned)

The agent of a passivized sentence can also be indicated by adverbs (-CE) suffix in Turkish. (11)

(11) Anayasa milletçe kabul edildi. - full passive
Constitution nation accept-passive morp.-
past tense marker

(The Constitution was accepted by the nation.)

Passivization of the sentences in Turkish can also show different variations of word order as it is in active voice. (12)

(12) Kedi köpek tarafından kovalanıyor. - passive
cat dog by chase-passive morp.
patient pres.prog. tense marker

agentive phrase

(The cat is being chased by the dog.)

In (12) applying the same rule in active voice sentences, it can be said that the element before the verb is focused in passive sentences. In this structure, the noun in the agentive phrase is the agent and kedi is the patient. The agent is emphasized.

(13) Köpek tarafından kedi kovalanıyor. - passive
dog by cat chase-passive morp.
nom. pres. prog.tense marker
agentive phrase patient

In the second variation, (13) the verb is preceded by the patient and the patient is focused. This variation is possible but used rarely.

1.2. Background of the Problem

Experiments which test the child's ability to comprehend and produce the location of the agent-patient in active and passive reversible sentences were conducted with children acquiring English intensively. In Turkish, however, the only experiment regarding the comprehension and production of location of the agent and patient in terms of word order was conducted within Berkeley cross-linguistic acquisition project (1972) and not much information is available on the acquisition of agent and patient relationship especially in reversible sentences. We have no idea at what age Turkish children begin to comprehend and produce reversible sentences with the appropriate agent-patient relationship both in active and passive voice, and at what age the acquisition of these items is completed and consequently, the difference between the comprehension and production of active and passive reversible sentences.

1.3. Aim to be Achieved

1.3.1. Purpose of the Study

The purpose of the study is to determine the comprehension and production of reversible sentences in both the active and passive voice in a group of children acquiring Turkish between the ages of 2;3 and 5;11.

The goal is to find an answer to the following questions:

1. What is the rate of comprehension and production of active and passive reversible sentences at different ages in children acquiring Turkish?

2. At what age are the comprehension and production of these sentences completed in Turkish?

3. Does comprehension precede production in reversible sentences either in active or in passive voice?

4. What is the difference between the active and passive voice in regard to comprehension and production of these items?

1.3.2. Hypothesis

This study is expected to reveal that comprehension of reversible sentences both in active voice and passive voice precedes the production of these items and children will show higher performance in comprehending and producing active sentences than they do in passive reversible sentences.

1.4. Scope of the Study

This study includes the test of reversible sentences both in active and passive voice. In relation to reversible sentences, there are four kinds of structures according to the

animacy or inanimacy of the agents and patients. The sentences are presented with their reversibles;

- animate agent-animate patient-verb as in (14) and (15)

(14) Köpek kediyi kovalıyor. -active reversible
dog cat chase-ing
acc.

(The dog is chasing the cat)

(15) Hırsız polis tarafından kovalanıyor. - Passive
thief policeman by being chase-d reversible

(The thief is being chased by the policeman)

- inanimate agent-animate patient-verb as (16) and (17)

(16) Kamyon köpeğe çarptı. - active reversible
truck dog bump-ed
dat.

(The truck bumped the dog)

(17) At araba tarafından çekiliyor.- passive reversible
horse car by being pull-ed

(The horse is being pulled by the car)

- inanimate agent-inanimate patient-verb as in (18) and (19)

(18) Araba trene çarptı. - Active reversible
car train bump-ed
dat.

(The car bumped the train)

(19) Kayık gemi tarafından çekiliyor. - passive reversible
boat ship by being pull-ed

(The boat is being pulled the ship')

- animate agent-inanimate patient-verb as in (20) and (21)

(20) Köpek kamyona çarptı. - active reversible
dog truck bump-ed
dat.

(The dog bumped the truck)

(21) Araba at tarafından çekiliyor. - passive reversible
car horse by being pull-ed

(The car is being pulled by the horse)

The sentences are chosen regarding their reversibility and the sentences which are non-reversible are excluded.(22)

(22) Çocuk ata biniyor. - active non-reversible
boy horse ride-ing
dat.

(The boy is riding a horse.)

The reversible of this sentence is impossible.(23)

(23) At çocuğa biniyor. - active non-reversible
horse boy ride-ing
dat.

(The horse is riding the boy.)

The experiment is limited to the comprehension and production of the agent and the patient in reversible

sentences. The required word order in the test is agent-patient- verb form in active sentences; and patient-agentive phrase-verb form in passive sentences. The other variations which are mentioned in section 1.1 are omitted. During the experiment, the children are not required to modify the nominals used as agent and patient. For this reason, such a sentence(24) is not used in the experiment since the determination of these nominals are not required.

(24) Büyük köpek küçük kediyi kovalıyor.- active reversible

big	dog	small	cat	chase-ing
adj.	nom.	adj.	non. acc.	

(The big dog is chasing the small cat.)

The sentences are constructed ten animate nouns, seven inanimate nouns, and six transitive verbs which are given in the following:

Ten animate nouns are 'kedi (cat), köpek (dog), kız çocuk (girl), erkek çocuk (boy), koyun (sheep), bebek (baby), anne (mother), polis (policeman), hırsız (thief), inek (cow) and at (horse)';

Seven inanimate nouns are 'araba (car), kamyon (truck), gemi (ship), kayık (boat), lokomotif (locomotive), vagon (wagon), tren (train)';

Six transitive verbs are 'kovalamak (chase), çarpmak (bump), çekmek (pull), taşımak (carry), öpmek(kiss), süslemek (beautify).

The first five verbs listed above have also been used in one or more of the major sentence comprehension studies as (ICP test of Fraser et al. 1963; Slobin, 1966; Carrow, 1968; Owings, 1972; Chapman and Miller, 1978).

The present progressive tense is chosen to show an ongoing event except the sentences which are constructed with the verb 'bump'.

CHAPTER II

REVIEW OF LITERATURE

2.1. Previous Studies in Language Development of English Speaking Children

The question "How do children learn to talk?" has fascinated men for centuries. The question of language acquisition was primarily a matter of philosophical speculation for many years, but in the late nineteen century empirical research was begun.

In the decade 1960-1970,the study of language development and understanding changed greatly. Dale (1972) claims that the child does not merely speak a "garbled version" of the adult language around him. He speaks his own language with his own characteristics patterns, about as consistently as an adult speaks but of course, not perfectly.

The second insight is that language is a matter of hypothesis-formation and hypothesis-testing. The child himself acts as linguist and finds the underlying rules he hears and the tests them by attempting to use them to understand speech.

Piaget was the first psychologist who attempted to investigate child language acquisition from a psychological perspective. Piaget calls the period between 18 and 24months of the child as 'sensorimotor period '. He (as cited in Dale, 1972) has observed that language acquisition is an indication of child's cognitive development and argued that "children acquire knowledge during this stage by acting on their surroundings, by touching, grasping, looking and manipulating the objects around them".

The sensori-motor period ends when the child becomes able mentally to represent reality, so able to operate with symbols and commence the acquisition of language.

De Laguna (1927), Leopold (1949), and Stern and Stern (1907), (as cited in McNeill, 1970,)made long term diaries and classified the utterances into classes which they analyzed as full sentences and characterized as 'holophrastic speech'. The single word utterances of the child are considered to express complex ideas. Thus, action and speech should be combined to interpret the single word utterances. De Laguna analyzes the single word utterances as a kind of propositions, in other words, as full sentences. This strategy was assigned by some other scholars as McCarthy (1954), McNeill, (1970), later on.

Rodgan (1976) classifies the child's single word utterances into two main categories: as holophrastic and non-holophrastic. By holophrastic speech, she means the syntactic relations as subject-verb-object relation, nouns, adverbs, pronouns etc. But by non-holophrastic speech, she means the pragmatic value of speech such as naming and repetition.

Rodgan suggests that holophrastic usage represents the first steps in the child's progress toward an understanding of linguistic relations, syntactic and semantic in the adult sense".

After a few months the child begins to produce single word utterances, he becomes capable of combining single words into two word utterances. Two-word utterances are analyzed by Braine (1963) as Pivot (P) class and Open (O) class.

The pivot class comprises forms which are more frequent, having a fixed position in two word utterances. They never occur as single word utterances and never occur together. Miller and Ervin (1964) utilized two-word classes as 'operators' and 'nonoperators'. These two classes are parallel to Braine's pivot and open classes. Slobin (1966) believes that P and O classes might be a universal feature of early speech as formalized by Chomsky (1965). McNeill (1966) supports Slobin's hypothesis providing evidence of

a universal innate hierarchy of word classes first but in 1970 redefined these classes in terms of grammatical relations.

Bloom (1970) claims that Pivot and Open classes are not found with children learning English giving examples from the speech of three children. Bloom has shown that pivot and open characterization of child speech is a superficial one which underestimates the child's linguistic knowledge. Bowerman (1970) with her study with Finnish children and Blount (1969) with Luo children, Kernan(1969) with Samoan children support Bloom's claim.

Brown and Fraser (1963) characterized children's two or more words utterances as 'telegraphic speech'. The child uses only content words such as verbs, nouns and adjectives in his speech and omits the function words like articles, prepositions and inflections.

Adults behave in this way in telegrams that is why the speech omitting functors are called 'telegraphic speech'.

One of the major devices used by languages to indicate the syntactic structures of sentences is word order. Word order is also important to determine the meaning of a sentence in languages with strict word order as in English. So order appears to play a most

important role in the development of a child's language. The reliance on word order is apparent in imitation and in comprehension as well as in spontaneous speech.

McNeill (1970) remarks that a child adopts the hypothesis that abstract grammatical relations are expressed in language through word order, and most children learning English at first use word order to express grammatical relations However, Braine (1970) cites a few examples of apposition. (e.g. 'see it baby' or 'baby see it' for 'see the baby'). On the other hand children learning inflected languages sometimes use word order to express grammatical relations. Bowerman (1969) found one subject used apposition in Finnish which is highly inflected and has flexible word order. Miller and Ervin (1964) found an English speaking child who used both word order and apposition. McNeill (1970) related this to the hypothesis that children learning English who use both apposition and word order may be following a wrong hypothesis that they are learning an inflected language.

Brown and Bellugi (1964) suggests that the child preserves the word order "just because his brain works that way and that he has no comprehension of the semantic contrasts involved" (137). Schelisinger (1971) agrees that word order is the first thing the child learns about adult grammar. Klein (1974) reports that children learning languages never produce utterances with a word

order which they have not been exposed to. Bowerman (1973) concludes that the order in the speech of adults and children is similar.

In the early stages of language development, children produce subject-verb, verb-object, and subject-object sentences, but subject-verb-object sentences appear only later (Dale, 1972). Bloom (1970) has argued that subject-verb-object order is part of the children's competence at the earlier stage, but either cognitive or linguistic constraints limit the length and complexity of productions. The constraints are gradually lifted and thus production advances. De Villiers and de Villiers (1972) report that judgement of correct word order by children is a difficult task not mastered till poststage V(MLU=4.0).

Studies of comprehension also seem to vindicate the common belief that comprehension precedes production. Children comprehend speech before they produce any true language. Fraser, Bellugi and Brown (1963) reveal that certain grammatical features cannot be produced before they are fully comprehended. Lowell and Dixon (1967) repeated the same experiment with wider age range and with retarded children. They found that the differences in comprehension and production depend on the ages and the I,Q of the children. The child makes use of the word order to comprehend the sentences in languages with strict word order, because

the child perceives the first noun as the agent. Roger Brown (1973) has explored a different kind of comprehension and demonstrated that some specific grammatical classes have semantic correlates for children. He points out that nursery-school children are sensitive to the implications of each grammatical class and that children first construct grammatical classes on a semantic base.

2.2. Previous Studies on Comprehension and Production of Subject-Object Relationship in Reversible Sentences in the Acquisition of English and Turkish

Word order is considered as a key which signifies syntactic and semantic relations in languages with strict word order as it is in English. Many arguments about word order have arisen.

There are three main approaches to the word order argument suggested by Bruner (1975); McNeill (1975), and Osgood (1977).

Bruner (as cited in Warner and Gleitman, 1983) approaches the word order argument semantically:

> "The argument has been that the structures of action and attention provide bench-marks for interpreting the order-rules in initial grammar: that a concept of agent-action-object-recipient at the pre-linguistic meaning of

appropriately ordered utterances involving such case categories as agentive-action, object, indirect object and so forth".

(Bruner, 1975:p.17)

With this theory, Bruner suggests that early speech should follow an order of 'agent-action-object-recipient" and the languages which has a variety of possible word orders like Turkish are much more difficult to acquire for the children.

McNeill (as cited in Warner and Gleitman, 1983) approaches the word order argument considering the sensorimotor cognition:

"When the cognitive schema has an intrinsic sequence, the utterance will tend to be produced in the same sequence".

(McNeill, 1975: p.367)

Slobin (as cited in Warner and Gleitman,1983) proposes that 'intrinsic sequence' is sometimes based on the order of the action or sometimes come from a mental process.

Osgood (as cited in Warner and Gleitman,1983) bases his argument for natural word order on perception:

"The natural order of constituents will correspond to that most frequently experienced

in pre-linguistic, perception-based comprehending".

(Osgood and Bock, 1977: 57)

According to this argument, Osgood confirms that the doer of the action, in other words, the agent comes first in the sentences because animate, human and moving beings most readily attract attention.

Regarding these three approaches, English can be considered as an ideal language for initial acquisition because of the word order system.

Brown and Bellugi (1964) approach the word order in terms of syntactic relations and suggest that "the child preserves the word order just because the brain works that way and...he has no comprehension of semantic contrasts involved". (p.137). The data collected in Berkeley-Cross-Linguistic Project support this idea assuming the children use the language like their parents as they tend to behave like their parents acquiring parents' way of talking, sitting and walking. But as more sentence forms are acquired, word order comes to play an active role.

Brown (1973) concludes that the stage I child learning English can match the agent-patient and can learn word order as the first aspect of the syntax as

an expressive medium.

However, as Turkish is a language which allows six possible word orders (c.f.1.1) and as grammatical relations are expressed by case inflections, word order is used for pragmatic purposes in Turkish, Slobin (1980) found that Turkish children orient to case inflections disregarding the word order and youngest children perform correctly on all six orders providing the inflection to mark the patient.

To investigate the semantic relations, experiments testing the comprehension and production of agent and patient have been conducted. To determine whether the child can comprehend and produce the agent-patient relationship, reversible sentences are used in the experiments.

Fraser, Bellugi and Brown (1963) conducted an experiment testing the comprehension and production of agent-patient relationship both in active and passive voice. The procedure requires pairs of sentences using just the same words but with difference of order that signal difference of semantic relations. The difference is on the shifted role of the nouns as agent and patient. The work focuses on agent-patient relations. The study includes twelve subjects between the ages of 37 and 43 months. The conclusion is that 85 percent of the sentences in active voice is correct ,the correct responses in passive voice is lower. This is because the child hears fewer passive sentences than active voice and the child

can comprehend and produce the construction which he hears more frequently.

Lowell and Dixon (1967) do the same comprehension test with twenty subjects from 2 years to 6 years. The older age groups seem to solve the agent-patient problem whereas the younger age groups do not.

Bever, Mehler and Valian (in press) have conducted a very large scale study of sentences with agent-patient comprehension in children from 2;0 to 8;0 years of age using both active reversible and passive reversible sentences. The 95 percent of the responses are correct for the youngest group on reversible active sentences.

Chapman and Miller (1978) used object manipulation to compare children's comprehension and production of the location of the agent and patient in reversible sentences with animate and inanimate agents and patients. The study included twelve subjects whose ages range from 2;0 to 5;0. They report that children use appropriate agent-patient in speaking significantly more often than in responding to agent-patient cues in the comprehension task. Chapman and Miller tried to find out that whether the subjects comprehend the sentences with animate agents more often and found that animacy of the agent affect the response of the child which is consistent with other reports that animate nouns predominate as sentence subjects in

children's early sentences. (Bloom, 1970; Bowerman, 1973; and Brown, Cazden and Bellugi, 1969).

Turner and Rommetveit (1967 a) tested the comprehension and production of active and passive reversible sentences with forty - eight children at 4;3, 5;8, 7;0, 8;11 and 9;0 years, and put these items in order of difficulty. They found that the voice factor is more important in comprehension and production than reversibility. Active reversible sentences are less difficult than passive reversible sentences.

Slobin (1966) did the same kind of study testing grammar and reversibility. He found that there is not much difference between active and passive nonreversible sentences but when reversible sentences are concerned, the difference is significant.Slobin also marked that the main effect of age was significant and age interacted significantly with sentence voice and reversibility

In Turkish, any experiment which tests the child comprehension and production of sentence voice and reversibility is not available. This present work is the first one which attempts to test the agent-patient relation in active and passive reversible sentences.

CHAPTER III

METHODOLOGY

3.1. Research Design

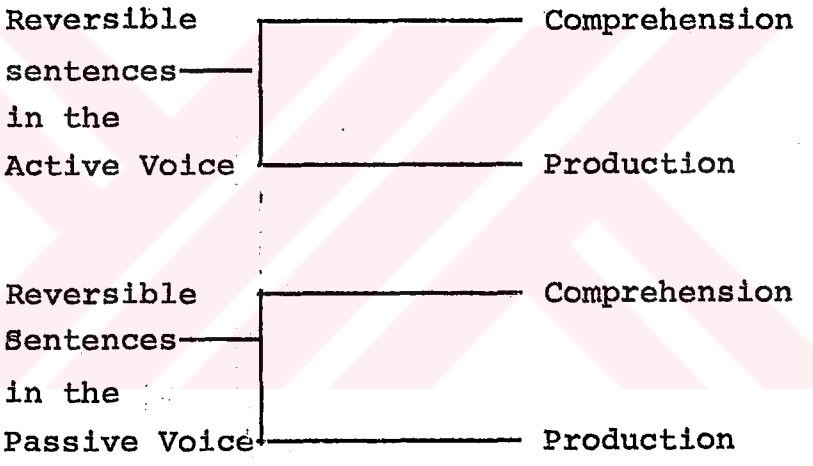
This study is designed as a cross-sectional study. In this cross-sectional study, different children at different ages are observed and the results of each child are noted and are analyzed in order to establish the performance of each group.

There are four different tasks in the study based on the sentence structures. There are two kinds of sentence structures; sentences in the active voice and sentences in the passive voice. The four tasks performed are: comprehension of active voice sentences; production of active voice sentences; comprehension of passive voice sentences and production of passive voice sentences. The main structure to be tested in this study is reversible sentences either with animate or inanimate agents or with animate or inanimate patients both in the active voice and the passive voice.

The comprehension task is designed to measure the child's comprehension of the items described above at different ages and to determine at what age Turkish

speaking children begin to comprehend and discriminate agent and patient in reversible sentences and complete the development of this particular structure.

The purpose of the production task is to reveal at what age Turkish speaking children begin to produce reversible sentences with the correct agent and patient relationship and at what age they are able to use this structure completely and freely. The four tasks can be shown in the following diagram:



3.2. Subjects

The subjects chosen for the purpose of this study are forty monolingual Turkish-speaking children whose ages range from 2;3 (two years and three months) to 5;11 (five years and eleven months) and they are organized into 4 groups. Each group consists of ten subjects who have approximate MLU values.MLUs (Mean Length of Utterances)

of the subjects range from 2.25 to 4.35 (Table 1.)

The first group is formed of ten subjects between the ages of 2;3 and 3;7 and their MLU values are between 2.25 and 2.75. The mean age of this group is 2;7 and the mean MLU is 2.54.

The second group consists of ten subjects whose ages are between 2;8 to 3;11 and whose MLU values are between 2.80 and 3.40. The mean age is 3;2 and the mean MLU value is 3.07.

The third group consists of ten subjects with ages from 4;0 to 5;0 and with MLU values from 3.60 to 3.95. The mean age is 4;3 and the mean MLU value is 3.75.

The last group is formed of ten subjects between the ages of 5;0 to 5;11 and between MLU values of 4.00 and 4.35. The mean age is 5;5 and the mean MLU is 4.18.

The subjects have the same socio-economic background with university graduate parents. Most of the subjects were attending nurseries during data collection.

3.3. Method

Twenty pairs of sentences are used for all the tasks. (Appendix C). The sentences are constructed from animate and inanimate nouns. The nouns and verbs are carefully chosen to be familiar to the children.(c.f.14) Ten pairs of sentences are in active voice and the other

ten pairs of sentences are in passive voice. By "a pair of sentences' we mean a sentence and a counterpart. All the sentences are chosen according to their reversibility. In a reversible sentence, both nouns in the sentence can be either the subject or the object of the verb. The children are required to distinguish the agent and the patient in each sentence. So sentences are presented to the child in reversible pairs.

Since the study is aimed to test the comprehension and production of agent and patient relationship, there are two tasks in the active voice and two tasks in the passive voice. Each subject is supposed to perform on totally four tasks as comprehension and production in the active voice and comprehension and production in the passive voice. The subjects are required only to comprehend or produce the location of the agent and the patient.

Before data collection, the Mean Length of Utterances (MLU) of the subjects are calculated. The ages of the children is not a reliable index in language acquisition because children at the same age do not show the same performance. MLU values of subjects show the development of a child more clearly. That is why MLU value is taken as a criteria to determine the rate of language development. For MLU computation, the spontaneous interaction of one of the parents and the child is recorded by the families. One hundred utterances of each

child containing all the nominals and verbals are counted for calculation. MLU values can be calculated in terms of words, syllables and morphemes. MLU value indicates the grammatical knowledge of the child when it is calculated in terms of morphemes. In this study, MLU is calculated in terms of morphemes because of the agglutinative nature of Turkish as propounded in Ekmekçi (1979). Ekmekçi applied MLU values to Turkish in her study on the acquisition of Turkish with a Turkish child. She gives MLU calculations in terms of words, syllables and morphemes, and concludes that MLU computation in terms of morphemes is more suitable than words or syllables because of the agglutinative nature of Turkish; that means, in Turkish, a sentence can be given in only one word adding suffixes denoting modality, negation, tense marker and person marker (25)

(25) Gid - e - me - di - m .

root - ability- negative marker - past tense m. - first person singular

(I could not go).

To determine MLU values in terms of morphemes, the morphemes of each utterance are counted and the total number of morphemes is divided by the total number of utterances. By the word 'morpheme' we mean the smallest meaningful unit of a word. For example, the word '<u>gidioum</u>'

(I am going) (uttered by a child at the age of 3;0) has three morphemes. Gidi - the root of the verb; -o indicates the present tense in progression; m - is the indication of the subject referring to the first person singular.

The sentences are presented to the subject by means of pictures. Each sentence is drawn on one card. The pictures are drawn in the way that the child likes to see and clearly to avoid any misinterpretation. All pictures are of the same size and colorless because bright colors attrack the children especially younger ones and change the response. There is no special way of illustration to get the passive responses. The pictures which are used to get both active and passive responses are similarly illustrated. The motivation to get passive response is supplied by the experimenter by saying the sentences which are illustrated in the pictures in the passive voice.(Appendix D)

A pretest task is given to the subjects in order to test whether the child knows all the nouns and verbs in the sentences to be used in the experiment. During this task, certain words, found to be incomprehensible to the children should be taught. The second procedure is to show the subjects to overcome their reluctance in discussing pictures.

3.4. Field Procedures

Most of the subjects were attending nurseries during the data collection; for this reason, the experiment is conducted in nurseries and at their own homes with the subjects who have to be at home because of any reason within the period of data collection. Before beginning data collection, the experimenter needs some time to get acquainted with the children.In nurseries, most of the children; especially older ones do not have difficulty in communicating. To enable the subjects to perform freely during the experiment, a warm-up period is necessary.In the warm-up period, the experimenter joins the children while they are playing with their friends in groups. Playing or being together at play hours is enough for subjects who are not shy and find it easy to communicate. But with shy subjects, the warm-up period lasts longer. They are set at ease by looking at photographs of their own and talking about their toys, families and brothers or sisters. After this, all the subjects are shown picture books to encourage them talk about the pictures.

The experimenter is a native speaker of Turkish. She is introduced to the children as a teacher who is visiting the nursery to show them some pictures.

Each task of the experiment is conducted with only one child at a time in a separate room. In homes, with younger children mothers can be in the room too, but sitting apart silently. Working with one subject lasts approximately thirty minutes.

Comprehension and production tasks in active reversible sentences are conducted one day and comprehension and production tasks in passive reversible sentences are conducted on another day. The experiment is done in two days for each child as the children's attention span is limited, the child can become bored when the activity lasts for too long and to avoid the confusion of using two different structures.

A third task is necessary for the subjects who give no response or when the response is not clear.These sentences are retested at another time because of the short-term memory of children.

3.5. Data Collection and Recording

The data regarding the comprehension and production level of children is collected in four sessions:

1. Comprehension of sentences in active voice
2. Production of sentences in active voice
3. Comprehension of sentences in passive voice
4. Production of sentences in passive voice

For each task, five different pairs of sentences are used. (Appendix C). Each sentence is presented to the child together with the picture illustrating that particular action. Therefore as stated earlier, the main device used for data collection is twenty pairs of pictures illustrating the actions in the sentences. The pictures are designed in such a way that the agent-patient relationship is clearly seen by the child.

For the comprehension task, the experimenter, while showing the pair of pictures which illustrates the same action with shifted nominals, utters the two sentences expressing these actions without revealing which action belongs to which picture. In the second part, the experimenter utters one of the sentences and asks the child to point at the picture which illustrates the given statement. The subject is not allowed to speak during the comprehension task.

For the production task, new sets of pictures which are similar to the ones used in comprehension task are used. The experimenter again utters the two sentences expressing the actions without pointing at the pictures and asks the child to produce the sentence expressing that particular action in the picture.

The data is collected only by the experimenter. The child sits next to the experimenter. The data is recorded on an observation sheet prepared before hand.

The observation sheet is prepared for each child separately. On each sheet, name, date of birth ,MLU of the child is written. The sentences used in the experiment are printed on the left-hand side of the sheet and the right-hand side of the sheet is divided into three columns; one column for correct responses; another column for the wrong responses and the last one for no response. A tick is put in the related column according to the answer. Besides recording the answers, notes are taken on the responses and the child's attitude toward the experiment.

Responses to both comprehension and production tasks are scored considering the correct agent and patient relationship. In other words, a response is considered correct if the action is appropriately uttered or pointed to with the correct agent-patient assignments. For instance, if the child says 'Köpek kediyi kovalıyor' (The dog is chasing the cat) to express the action shown in the picture where the receiver of the action is the cat, the statement is scored 'correct'. However, if the receiver of the action is dog in the shown picture, the same response is scored 'incorrect'. If the child does not give any response to the picture, it is treated as 'no response' and these items are further tested. If a response is obtained in the second recording, the outcome of the second test is taken into consideration

for data analysis.

In production of passive sentences, the sentences produced without agentive phrases are scored as 'correct' but the ones produced in active voice are scored as 'wrong'.

3.6. Data Analysis

This data is based on the work of Chapman and Miller (1978); thus, the data collected in this study is analyzed by taking Chapman and Miller's methodology as a basis.

For each task, 'percent correct score' is computed for each child by dividing the number of right responses by the number of scorable responses. What is meant by 'scorable responses' is the responses of the child which can be scored as either correct or wrong.The responses which are scored as 'no response' are omitted in the analysis.

Then, mean percent correct score' is computed for each group of subjects by dividing the sum of 'percent correct scores' by the number of the subjects within the group.

For each group, 'percent scorable response' for each task is computed to see how many of the sentences in each task are scored. 'Percent Scorable Responses' is computed by dividing the sum of scorable responses (correct responses - wrong responses) by 100 and multiplying the result by 100. The first 100 is found by multiplying the

number of possible correct scores with the number of subjects in each group. There are ten possible corrects scores in each task because ten sentences are tested; and ten subjects in each group; so 10.10 is 100.

The most important point in this study is the difference between comprehension and production both in active and passive voice. 'One-tailed correlated t test' is run to find the difference between comprehension and production separately in active voice and passive voice- one-tailed test predicts a difference in only one direction, either plus or minus. In this research since the difference between comprehension and production is expected to be either larger or smaller, one-tailed t test is used. T-value which is calculated indicates a significant difference between two sample means at the level by 0.05 or 0.01.

T-test with another formula is run to compute whether the difference between group is siggificant or not for each task. T-values shows the difference between the groups and whether the difference is significant or not. T-values are calculated according to the df:9 because df (degree of freedom= N-1 (number of subjects-1). (Appendix F).

Another procedure in data analysis is to analyse the findings in data collection. One is the use of agentless passive by the children. The percentage of passive sentences which are produced without agent is calculated. The other is the production of passive voice sentences in active voice. The percentage of passive sentences which are produced as active voice is computed for each group.

Finally, considering the aim of the study, all the analysis done in active voice and passive voice is compared and presented in graph from.

CHAPTER IV

DATA ANALYSIS

The data is analyzed first in terms of how children at the same age and with aproximate MLU values respond to comprehension and production tasks in active reversible and passive reversible sentences. The difference between comprehension and production is revealed for each group separately in each voice by means of a t-test (c.f. 3.6) which shows how the mean values of correct responses of the subjects in each group in comprehension differ from the mean values of correct responses of the subjects in production. It also shows whether the difference between comprehension and production is significant or non-significant by means of t-values. The values for comprehension and production in active reversible sentences and in passive reversible sentences are separately concluded.

Besides the difference between comprehension and production in each voice to determine the difference of each item between the groups again t-test is run with a different formula.

4.1. Analysis of Results in Active Reversible Sentences

4.1.1 Comprehension of Active Reversible Sentences

In comprehension task, there are five pairs of sentences. All sentences are tested with each subject in each group.

The percentage of the total number of correct responses given to the sentences in comprehension task is calculated and shown in Table III.

In the first group, the lowest correct score is four out of ten scorable responses which belongs to a child at the age of 2;7 and with 2.60 MLU value. The highest correct score is ten out of the 10 scorable responses of two subjects whose ages are 2;11 and 3;6 with 2;70 MLU values. (Table II). The percentage of correct scores in the first group range from 40 % to 100%.Mean percent correct score is 70% for the first group (Table III).

The percentage of wrong responses in the first group is 28%. 11% of the wrong responses occur in sentences with an animate agent and an animate patient. 10% of the wrong responses are observed in sentences with an inanimate agent and an inanimate patient and 3% is in sentences with an animate agent and an inanimate patient. 4% is in sentences with an inanimate agent and an animate patient. In terms of case markers, 14% of the errors are in sentences with dative markers and 14% in sentences with

accusative markers. In terms of tense markers, 15% of the errors are in past tense form sentences and 13% in sentences with present progressive. Sentences in the past tense are few in number. The percentage of scorable responses is 98%. (Table IV)

In the second group, the lowest correct score is six correct responses out of ten scorable responses and the highest correct score is ten correct responses out of ten sentences. In this group, five of the subjects comprehend all the sentences tested. (Table II). The percentage of correct scores in the first group range from 60% to 100%. The mean percent correct score is 88%. (Table III).

The percentage of wrong responses in the second group is 12%. 8% of the wrong responses focus on the sentences with an inanimate agent and an inanimate patient. 4% of the wrong responses are in sentences with an animate agent and an animate patient.

In terms of case markers, 5% of the errors are in sentences with dative markers, and 7% of them in sentences with accusative markers. In terms of tense markers, 5% of the errors focus on the sentences in past tense, and 7% in the present progressive tense. The percentage of scorable responses is 100% (Table IV).

The third group almost comprehend the active reversible sentences. Eight of the subjects in this group

give correct responses to all of the sentences; that means eight of them have ten correct responses out of ten scorable responses; two subjects have eight correct responses out of ten. (Table II). Percent correct scores of the subjects range from 80% to 100%. Mean percent correct score is 96%.(Table III).

The percentage of wrong responses is 4%. All the wrong responses are in sentences with inanimate agents and inanimate patients. These sentences are also in the past tense and patients are denoted with dative markers. The percentage of scorable responses is 100%. (Table IV).

The fourth group has achieved comprehension of active reversible sentences. All the subjects have ten correct responses out of ten sentences.(Table II). All the subjects comprehend the correct agent-patient relationship. Mean percent correct score is 100%.(Table III). The percentage of scorable responses is 100%. (Table IV).

When the difference in comprehension between the subject groups is analyzed, the higher difference is observed between Group I and Group II which is determined by t-values. T - (1-935) is between Groups I and II. The difference decreases between Group II and III which is given by t-(1.019). The least difference is between Groups III and IV. T-(0.611) is for the difference between these groups. (Table V). This shows us that the difference between the groups becomes smaller when the age and MLU

values of the groups increase. But the differences between the groups are non-significant at the $P < 0.01$ level. ($p < 0.01$) Although there is a slight difference between the groups, comprehension increases with the increasing age and MLU. (Figure I) .

4.1.2. Production of Active Reversible Sentences

In production task another five pairs of sentences which are similar to those used in the comprehension task are presented. All sentences are tested with each subject.

The percentage of the total number of correct responses given to the sentences in the production task is shown in Table VII.

In Group I, the lowest correct score in production is four out of ten scorable responses which belongs to a child at the age of 2;3 who has 2.25 MLU value. The highest correct score is ten out of ten scorable responses which belongs to a child who has 2.70 MLU value and is at 2;11 years. (Table VI). All the subjects except one have more correct scores in the comprehension task than they have in the production task. But one subject who is at the age of 2;7 and has 2.60 MLU value has more correct scores in production than she does in comprehension. The percentage of correct responses in this group range from 40% to

100% and mean percent correct score is 66%. (Table VII)

The percentage of wrong responses is 28%. The wrong responses cannot be specified according to the animacy or inanimacy of the agents or patients or according to the dative or accusative markers because all sentences given in the production task have animate agents and animate patients denoted by an accusative marker. The percentage of scorable responses is 94%. Any response is not obtained from 6% of the sentences. (Table VIII)

In the second group, an increase in the percentage of correct responses can be seen. The lowest correct score is six out of ten scorable responses which belongs to two subjects who have 3.12 and 3.15 MLU values and who are at 3;5 and 3; 3 years old. The highest correct score is ten out of ten scorable responses. Five of the subjects produced all the sentences. (Table VI) In this group, there is also one subject who has more correct scores in production. The percent correct scores of this group range from 60% to 100%. Mean percent correct score is 87% . (Table VII). 100% of the sentences are scorable. (Table VIII). The percentage of wrong responses is 13%.

In the third group, the subjects produce almost all of the sentences as they do in the comprehension task. The lowest correct score is eight out of ten scorable responses which has achieved by two subjects. Eight of

the subjects have ten correct scores out of ten scorable responses. (Table VI) Percent correct scores range between 80% and 100%. Mean percent correct score is 96%. (Table VII) Tha percentage of scorable responses is 100%. (Table VII) The percentage of wrong responses is 4%.

As in comprehension task the higher difference is between Groups I and II which is determined by t-(2.932). The difference becomes less between Groups II and III and is marked with t-(1.147). The difference between Groups III and IV is the least among the groups. T-(0.611) is for the difference between Groups III and IV. (Table IX). Only the difference between Groups I and II shows significance at the level of 0.05. ($p < 0.05$). The differences between Groups II and III and IV are non-significant. The difference between the groups decrease with the increasing age and MLU values. In spite of the slight differences between older age groups, production of active reversible sentences increase with the increasing age and MLU, (Figure II).

4.1.3. Comprehension vs. Production

An analysis of comprehension and production data shows that the performance of the subjects in comprehension task differs from their performance in

production task in Groups I and II; but comprehension and production becomes equal in Groups III and IV.

T-values indicate that the difference between comprehension and production in active reversible sentences is non-significant. T-values of groups are shown in Table X.

T (1.152) is for Group I and the difference between comprehension and production for the subjects with 2;7 mean age and 2.54 mean MLU value does not show any significant. The percentage difference is 4%.

The percentage difference for Group II is 1% and t-(0.318) shows the difference between comprehension and production of active reversible sentences is non-significant.

The percentage of comprehension and production is equal in Group III and IV. Both the percentage difference (0%) and t-values (t(.000)) shows no difference between comprehension and production in active reversible sentences (Figure III).

4.1.4. The Way Active Reversible Sentences are Acquired

Language acquisition may be marked with comprehension and production of one or more particular items. The agent-patient relationship in active reversible sentences is acquired at early stages of the language

development process. The subjects whose mean age is 2;7 and with 2.54 mean MLU can comprehend and produce active reversible sentences more than 50% of the time. This result shows us that children under this age and under this MLU value begin to comprehend and produce the agent-patient relationship in active reversible sentences with correct agent and patient. Comprehension and production is completed when a child reaches at the age of 5;5 and at an MLU value of 4.18.

It is evident that there is an overall increase in comprehension and production with an increase in age and MLU values.

4.2..Analysis of Passive Reversible Sentences

4.2.1. Comprehension of Passive Reversible Sentences

In comprehension task of passive reversible sentences, five pairs of sentences are used. Passive sentences are not the exact passives of sentences which are used in testing the active voice. Difference sets of sentences are formed with animate and inanimate agents and patients.

The percentage of the total number of correct responses given to the sentences in the comprehension task is calculated and shown in Table XII.

In the first group, one subject with 2.25 MLU value at an age of 2;3 cannot comprehend any passive

sentences which are presented. Except for that subject the lowest correct score is two out of ten scorable responses. The highest correct score is six out of ten scorable responses given by most of the subjects in this group. (Table XI). None of the subjects have ten correct scores in passive voice as they do in comprehension of active reversible sentences. Percent correct scores range from 20% to 60%. The mean percent correct score is 48%. (Table XII).

The percentage of wrong responses in this group is 50%. 30% of the wrong responses is amongst those which may be called 'probable reversible sentences (Dale,1972) (e.g. At araba tarafından çekiliyor / The horse is being pulled by the car/; Gemi kayık tarafından çekiliyor. / The ship is being pulled by the boat/; Lokomotif vagon tarafından çekiliyor/The locomotive is being pulled by the wagon/.) 20% of the wrong responses is in the sentences with animate patient and animate agent. 2% of the sentences are scored as 'no response'. Percentage of scorable responses is 98%. (Table XIII)

In the second group, comprehension increases at the rate of 17%. None of the subjects can comprehend all the sentences. The lowest correct score is four out of ten scorable responses which belongs to two subjects at the ages of 2;8 and 3;5 and with the MLU

values 2.80 and 3.12 respectively. The highest correct score is eight out of ten scorable responses. (Table XI) Percent correct scores range from 40% to 80%. Mean Percent Correct score is 65%. (Table XII).

The percentage of wrong responses is 35%.10% of the wrong responses occur in probable reversible sentences. The percentage of scorable responses is 100% (Table XIII).

The third group gives correct responses to 68% of the sentences. Percent correct scores range from 40% to 80% as in the second group. (Table XII) The lowest correct score is four out of ten scorable responses and the highest correct score is eight out of ten scorable responses by five of the subject.(Table XI)

The percentage of wrong responses is 32%. 20% of the wrong responses occur in probable reversible sentences.12% of the wrong responses are in sentences with animate agents and animate patients. Percent scorable response is 100%. (Table XIII),

In the fourth group, two subjects at the age of 5;4 and 4;27 and 4;22 MLU values have ten correct scores out of ten scorable responses. The lowest score is six out of ten scorable responses by two subjects. (Table XI) Percentage of correct responses range from 60% to 100%. Mean percent correct is 78%.(Table XII)

Percentage of wrong responses is 22%. 12% of the wrong responses are attributable to probable reversible sentences.

Comprehension of passive reversible sentences vary according to the ages and MLU values of the subject groups. The results of t-test indicate that there is a difference in comprehension between Groups I and II. t-value is (t-2.698) and significant at the level of 0.05. The least difference between the groups in comprehending passive reversible sentences is between Groups II and III T-(0.445) is non-significant. The difference between Groups III and IV is t-(1.422) according to the t-test and shows non-significance (Table XIV).In passive reversible sentences, comprehension increases with the increasing age and MLU although the difference is slight between the older groups. (Figure IV).

4.2.2. Production of Passive Reversible Sentences

In the production task, different sets of pictures are used. The percentage of the total number of correct responses are shown in Table XVI .

As shown in the Table XVI, the production of passive reversible sentences is rather slower compared to the comprehension of such items. Some subjects in every group tend to produce passive sentences as active sentences.

The sentences are presented to the children with the agentive phrases and the subjects are expected to produce the sentences as full passives. However, some subjects produce agentless passives.

As clarified by the results, the first group shows the weakest performance in the production of passive reversible sentences. The mean percentage of correct responses is 24% whether produced as full passive or agentless passive (Table XVI). 9% of the correct responses are produced as full passive and 15% are produced as agentless passives (Table XVII). The percent of wrong responses is 76%. 19% of the responses are produced in active voice which are not recorded as correct responses.(Table XVIII)

In the second group, the mean percentage of correct responses is 28% (Table XVI). There is not much difference between the first and second groups. 12% of the correct responses are produced as full passives and 16% are produced as agentless passives (Table XVII).

The second group shows more tendency to produce passive sentences in the active voice. 44% of the utterances produced are in active voice which are recorded as wrong responses.(Table XVIII).

The percentage of production increases to 46% in the third group. (Table XVI) . 17% of this percentage is produced as full passives and 29% of the correct responses are produced as agentless passives. (Table XVII)

The percentage of passive sentences which are produced in active voice is 20%. (Table XVIII)

The percentage of correct responses in fourth group is 59%.29% of the correct responses is produced as agentless passive and the percentage of passive sentences which are produced in active voice is 15%.

In production of passive reversible sentences the highest difference is between Groups II, III and t-(3.389) which means the difference is significant at the 0.01 level. ($P < 0.01$). The least difference is between Groups I and II. T-value is t-(0.877) and the difference is non-significant. The difference between Groups III and IV can be also considered as high. T-value is 2.131. It is treated as non-significant but the difference between Groups III and Iv is higher than the difference between Groups II and III. (Table XIX) Production of passive reversible sentences shows on overall increase with the increasing age and MLU. (Figure V).

4.2.3. Comprehension vs. Production

The percentage correct scores in comprehension differ from percentage correct scores in production of passive reversible sentences. T-values indicate the differences within the groups. (Table XX).

T (5.622) is for Group I, this indicates the difference between comprehension and production is significant at the 0.01 level. ($P < 0.01$).

For group II. the difference is significant at the 0.01 level (T-5.061) ($P < 0.01$).

For group III, the difference is significant at the 0.05 level ($t = 2.538$) and ($P < 0.05$).

For group IV $t = (3.943)$, the difference is significant at the 0.01 level ($P < 0.01$).

The difference between comprehension and production in passive voice is significant in all groups. Comprehension increases with the increasing age and MLU as well as production but comprehension and production never becomes egual.(Figure VI).

4.2.4. The Way Passive Reversible Sentences are Acquired

Passive structure is one of the structures which is acquired later in a child's language development. Children can have more correct responses in the comprehension task than they have in the production task. Acquisition of passive structures appears to require more time within the included age groups, in this study, in the comprehension task than in the production task. Comprehension of passive reversible sentences increases more than production does. The child can only reach 78% in comprehension and 59% in production. It is clear that the subjects tend to use active voice rather than passive voice and when he uses passive structure, he usually tends to omit the agentive phrase. As in both tasks of comprehension it is clear that there is an overall increase in age and the MLU value in

passive reversible sentences.

4.3. Active Voice vs. Passive Voice

As it is stated by Turner and Rommetveit (1976 a) more errors were made in the comprehension and production of passive reversible sentences than in comprehension and production of active reversible sentences. The voice factor has a stronger effect than reversibility.

4.3.1. Comprehension

As given in Table XXI, comprehension in the active voice differs from comprehension in the passive voice.

One-tailed t-test is run both to determine the difference between comprehension in active voice and comprehension in passive voice, and whether the difference is significant.

T-values for each group is shown in Table XII. T-(3.091) for the first group and the difference is significant at the 0.01 level. ($P < 0.01$). The second group shows t-(4.867) which is considered as significant at the 0.01 level. ($P < 0.01$). T-value is t (5.250) for the third group and the difference is significant at the 0.01 level. ($P < 0.01$) The fourth group shows an absolute

difference because in active reversible sentences, comprehension is completed and reaches to 100% but production is slower than comprehension (Figure VII). T-(4.714) and significant at the 0.01 level. ($P < 0.01$)

4.3.2. Production

As well as a significant difference in comprehension between active and passive voice, the difference in production between the two voice is observed both in terms of percentage (Table XXIII) and t-values (Table XXIV).

T-value is t-(6.508) for the first groups.The difference is significant at the level of 0.01. ($P < 0.01$). The second group shows also significant difference between production of passive of reversible sentences and production of active reversible sentences. T-value is t-(8.546). The difference is significant at the 0.01 level. ($P < 0.01$). Groups III and IV have t-(6.708) and t-(9.462) respectively. The difference is also significant at the level of 0.01 for these groups. ($P < 0.01$). Production of active reversible sentences is completed in the fourth group whereas production in passive reversible sentences is not completely acquired at this age. (Figure VIII)

CHAPTER V

DISCUSSION

The results of the analysis of data collected in the comprehension and production of reversible sentences in active voice and passive voice support the primary hypothesis that children between the ages of 2;7 and 5;5 with MLU values ranging from 2.54 to 4;18 show higher performance in comprehending and producing active reversible sentences than they do passive reversible sentences. The youngest group, Group I, in this study, comprehends and produces more than 50% of the test sentences in active voice. The difference between the comprehension and the production decreases to 1% in Group II and becomes equal in the older groups in Group III and Group IV. The oldest group, Group IV, reaches the toppest level in both comprehension and production that is to a 100% level. However, the performance in passive reversible sentences develops more slowly than active reversible sentences. The youngest group, Group I, comprehends and produces less than 50% of the test sentences. In the older groups, in Groups II, III and IV, comprehension exceeds 50%. On the other hand, production remains below 50% in Group I,II and III, but it exceeds 50% only in Group IV. Neither comprehension nor production of passive reversible sentences is completed at the age of which active

reversible sentences are completely comprehended and produced. With the increasing age and MLU value, an increase in the rate of comprehension and production both in active and passive reversible sentences is observed. According to the data collected for this study, comprehension and production of correct agent-patient relationship both in active and passive reversible sentences begin before the children reach to 2.54 MLU value and comprehension and production in active voice are completed when the children reach to an MLU value of 4.18, whereas in passive voice, comprehension and production are still developing at an MLU value of 4.18 because of the late acquisition of passive structure.

When the rate of comprehension and production of agent-patient relationship is compared considering the active and passive sentences, it is concluded that children comprehend and produce active reversible sentences better than passive reversible sentences.The reasons why the performance in active reversible sentences are higher than passive reversible sentences can be due to syntactic and semantic aspects of active and passive voice. First, we can consider the syntactic influences:

The existence of morphological markers both in active and passive voices in Turkish influences the performance of these voices. In Turkish , the object of an active sentence, in other words, the patient is

signified with a morphological marker which can be either accusative or dative. This case marker helps the child to distinguish the agent and the patient of the sentence in comprehension. But in passive voice, the object is not signified with any marker. Lack of the morphological marker confuses the child in distinguishing the agent and the patient of the sentence. Furthermore, the verb in the passive sentence is passivized by using morphological markers. The child does not perceive that the verb is denoting a different structure. Another syntactis component which influences the child's performance is that the agent is denoted with the adverbial particle 'tarafından' (by) in passive sentences. The child has difficulty in comprehending the meaning of this word and fails in comprehending which noun is the subject and which is the object. Therefore, use of morphological markers confuses the child in two aspects; one aspect is the child's inability in distinguishing the agent and the patient and the other is miscomprehending the meaning of morphological marker of the passive verb and the adverbial particle 'tarafından' (by) in passive. Fraser et al.(1963) point out that children tend to process the passive voice as active voice treating the passive markers 'is, -ed and by' as if they are signs of some uncommon tense.

Besides the morphological markers, the length of passive structure has an effect on the comprehension and production. Passive sentences are longer than the active ones, because of the addition of the agentive phrase. Schlesinger (1966) states that passive sentences are long and are considered to be more complex and are, therefore, considered to add an additional load on processing that is decoding, encoding and communicating.

If we consider the semantic components which affect the comprehension and production of passive reversible sentences, it is observed that children have a tendency to treat the first noun of the reversible passive sentence as the agent and systematically reverse the meaning of the sentence. (26)

(26)	Bebek	anne	tarafından	öpülüyor.
	baby	mother	by	being kiss-ed
	patient	agentive phrase		verb

(The baby is being kissed by the mother).

In example (26), bebek (baby) is the patient and anne (mother) is the agent but the child cannot discriminate the agent noun and applying the rule of the active voice, he treats the first noun as the agent and produces the sentence as in example (27).

(27)	Anne	bebek	tarafından	öpülüyor.
	mother	baby	by	being kiss-ed
	patient	agentive phrase		verb

(Mother is being kissed by the baby.)

Slobin (1966) attributes the difficulty in comprehending and in producing passive voice sentences partly to the problem of keeping track of the agent noun because in passive sentences the superficial and the underlying subjects are different and the child behaves according to the surface structure. Bever (1970) claims that children adopt a perceptual strategy as noun - verb-noun corresponding to the agent, action and the patient and overgeneralize this strategy of word order of the more frequent active sentences which show us that the child forms the syntax in his mind adopting the agent-action-patient strategy but does not have the semantic notions to identify the doer of the action or the noun affected by the action. Turner and Rommetveit (1967 a) suggest that the difficulty in comprehending and producing correct agent-patient relationship is due to the load on the processing system because the child has to take into account the distinction between the agent and the subject and between the object and the patient. This distinction becomes particularly important in the reversible passive sentence because not only the agent coincides with the subject of the sentence and the object with the patient, but also the agent and the patient are semantically interchangeable. Therefore, the child must pay attention to the relationship between grammatical and semantic

structure and must regard which element is agent and which is the patient in order to comprehend and produce passive reversible sentences with correct agent and patient. Reversibility of the sentence is also important in comprehension and production. Miller and McKean (1964) suggest that difficulty in processing of passive voice sentences arises more often if the agent and patient are reversible.

Not only the linguistic components but the environment and needs of the child influence the comprehension and production of passive sentences. Children hear fewer passive sentences than they hear active sentences so use fewer or no passive structures. Turner and Rommetveit (1967 a) support this view suggesting that the child has no real need for the passive voice in order to express himself. In the spontaneous speech of children recorded for this study, it is observed that both adults and children use few passive sentences. Only ten out of nearly six hundred adult sentences uttered to the children are in passive voice and only one child out of forty children uses a passive sentence which is agentless in his spontaneous speech.

Another point to be discussed is the production of passive sentences without agent. Most of the subjects in each group tend to use agentless passive although the passive sentences are presented as full passives in

the experiment. In Group I, 15% out of 24% correct responses; in Group II, 16% out of 28% correct responses; in Group III, 29% out of 46% correct responses; in Group IV, 29% out of 59% correct responses are produced as agentless passive. Thus, subjects in the study use agentless passive more frequently than full passives. Menyuk (1963) found that five out of fourteen nursery school children used full passive. Slobin (1968) found that 75% of full passives were changed to agentless passive in recalling experiment. Anderson (1963) demonstrated in a study of recall of simple active and passive sentences that recall is best for the first part of the sentence and poorest for the second part regardless of the grammatical form of the sentence. Therefore, it is concluded that children can remember only the first part of the sentence presented and omit the agentive phrase because they are not able to understand the meaning of the adverbial particle introducing the agentive phrase or the structure of passive sentences because of the fewer use of passives. Balpınar (1981) states that native speakers find full passives too long to be used.

Another point which is observed in this study is the production of passive voice sentences as active voice. In this experiment, 19% of the sentences are produced as active voice by the subjects in Group I, 44% in Group II, 20 % in Group III and 15 % Group IV. Except Group II, there is a decrease in the production of passive

sentences as active voice with the increasing age and MLU values. But the subjects in Group II produce 44% of the passive sentences in active voice. Bever (as cited in Huxley and Ingram, 1971) points out that there is a temporary increase in the tendency to produce passive sentences as active sentences at the age of 4;0.But in this study passive sentences which are produced as active voice are frequent at the age of 3;0.The reason for the production of passive sentences as active voice can be attributed to the children's preference in expressing the events in active voice since the doer of the action, in other words, the agent is important for them not the object or person affected by the action, in other words, the patient. McNeill (1970) approaches to the problem from a semantic point of view and claims that reversible passive sentences can be construed as active sentences under the influence of noun-verb-noun strategy which stands for agent-action-patient. A passive sentence becomes active under the strategy of agent-action-patient. The semantic coherence arising from the reversible situation leads to a reversal of grammatical subject and object. Schelisinger (1966), in his study which controls the possible effects of length and unnaturalness of passive sentences in Hebrew, found that passivized sentences were recalled as active twice as often as vice versa.

So far we have discussed the importance of the voice in reversible sentences but another important conclusion derived from the observation of this data is that the rate of comprehension differs from the rate of production in any voice. In this data, it is observed that comprehension precedes production of reversible sentences both in active voice and passive voice. The difference between production and comprehension is revealed by one-tailed t-test. The difference is denoted by t-value. T-value which is calculated shows that whether the difference is significant at the probability level of either 0.05 or 0.01. T-test allows 0.05 or 0.01 chance level for each value. In one-tailed t-test, any value that is more than t-3.250 at chance level of 0.01 and any value that is more than t-2.262 at the chance level of 0.05 show that two groups are different and also the difference is significant. When the t-test is applied to the data in this study, t-values: t-1.152 for Group I; t-0.318 for Group II; t(0.000) for Group III and t-0.000 for Group IV are found for comprehension and production in active reversible sentences. The difference between comprehension and production in active reversible sentences is non-significant at the 0.01 level.However, t-values for each group in passive voice are: t-5.622 for GroupI; t-5.061 for Group II ; t-2.538 for Group III; and t-3.943 for Group IV.

The difference between comprehension and production in passive reversible sentences is significant at the 0.01 level. ($P < 0.01$). In this study, the performance of the subjects in comprehension is better than the performance in the production task both in active and passive reversible sentences. To perform correctly in comprehension, the subject should perceive the difference between the sentences and also the difference between the two pictures together by which the sentences are presented. He must also have motor control of the speech. Only pointing is enough to show that the child comprehends the sentence structure even though he cannot produce by himself. Production task requires all the operations of both comprehension and also the ability to perceive the contrast between the two sentences tested and must also have sufficient motor control of speech to produce the difference. Since comprehension entails control of pointing and production requires control of speech production seems to be more complex. McCarthy (1954) claims that children may seem to comprehend without actually comprehending but cannot appear to produce without actually speaking. De Villiers and de Villiers (1975) conclude that children are able to comprehend the reversible sentences but never produce in spontaneous speech. McNeill (1966) claims that the difference is based on short-term memory and that the load on short-term memory is greater for production than for comprehension.

Since the child is likely to forget the form in production although he can remember it in comprehension.

The conclusion which is derived from the data collected for the purpose of this study and supported by the views of many disciplines is that children develop comprehension skill before beginning to produce the same item both in active and passive reversible sentences but sentence voice is important on the rate of comprehension and production. Comprehension and production of active reversible sentences precede the comprehension and production of passive reversible sentences owing to syntactic and semantic features of these structures.

APPENDICES

APPENDIX A

Table I : Subjects

GROUP I.

Subject Identifier	MLU	Age
I	2.25	2; 4
C	2.70	2;11
T	2.25	2; 3
R	2.63	2; 9
G	2.60	2; 7
C	2.25	2; 8
Ü	2.70	2;11
V	2.75	2; 2
M	2.60	2; 7
H	2.70	3; 6

Mean Age: 2-7

Mean MLU: 2.54

GROUP II.

Subject Identifier	MLU	Age
S	3.10	2;11
B	3.40	3; 7
Ş	3.12	3; 5
U	3.00	3; 4
G	2.95	3; 1
C	3.10	3; 8
A	3.19	3; 4
M	3.15	3; 3
D	2.91	3;11
F	2.80	2;08

Mean Age : 3.2

Mean MLU : 3.07

GROUP III.

Subject Identifier	MLU	Age
E	3.60	4; 0
M	3.75	4; 1
Ö	3.95	4; 3
K	3.80	4; 4
A	3.90	4;10
D	3.62	4; 5
B	3.75	4; 6
U	3.88	4; 3
Ü	3.75	5; 0
T	3.60	4; 2

Mean Age : 4; 3
Mean MLU : 3.75

GROUP IV.

Subject Identifier	MLU	Age
Z	4.25	5; 2
S	4.27	5; 4
K	4.15	5; 7
Ç	4.00	5; 2
M	4.00	5; 5
U	4.22	5; 4
T	4.35	5;11
H	4.30	5; 3
Z	4.20	5; 0
E	4.12	5; 0

Mean Age : 5; 5
Mean MLU : 4.18

Table II: Distribution of Correct Scores in Comprehension in Active Reversible Sentences.

Groups	Correct Scores										Mean Correct Scores
I	6	10	6	6	4	6	6	8	8	10	7
II	8	10	8	10	8	10	10	6	10	8	8.8
III	10	8	10	10	10	8	10	10	10	10	9.6
IV	10	10	10	10	10	10	10	10	10	10	10

Table III: Distribution Percent Correct Scores in Comprehension in Active Reversible Sentences

Groups	% Correct Scores										Means Percent Correct Scores
I	60	100	60	60	40	60	60	80	80	100	70
II	80	100	80	100	80	100	100	100	60	100	88
III	100	80	100	100	100	80	100	100	100	100	96
IV	100	100	100	100	100	100	100	100	100	100	100

Table IV: Distribution of Scorable Responses (20 Possible) in Comprehension of Active Reversible Sentences.

Groups	Scorable Repsonses										Mean Percent Scorable Responses
I	8	10	10	10	10	10	10	10	10	10	98
II	10	10	10	10	10	10	10	10	10	10	100
III	10	10	10	10	10	10	10	10	10	10	100
IV	10	10	10	10	10	10	10	10	10	10	100

Table V: T-Values Between The Groups in Comprehension of Active Reversible Sentences

Groups	t-Values
I -II	t-1.985
II-III	t-1.019
III-IV	t-0.611

Table VI: Distribution of Correct Scores in Production of Active Reversible Sentences

Groups	Correct Scores										Mean Correct Scores
I	6	10	4	6	7	6	5	6	7	7	6.6
II	10	9	6	10	8	10	10	6	10	8	8.7
III	10	8	10	10	10	8	10	10	10	10	9.6
IV	10	10	10	10	10	10	10	10	10	10	100

Table VII: Distribution of Percent Correct Scores in Production of Active Reversible Sentences

Groups	% Correct Scores										Mean Percent Correct Scores
I	60	100	40	60	70	60	50	60	70	70	66
II	100	90	60	100	80	100	100	60	100	80	87
III	100	80	100	100	100	80	100	100	100	100	96
IV	100	100	100	100	100	100	100	100	100	100	100

Table VIII: Distribution of Scorable Responses (20 Possible) in Production of Active Reversible Sentences

Groups	Scorable Responses										Mean Percent Scorable Responses
I	10	10	8	10	8	8	10	10	10	10	94
II	10	10	10	10	10	10	10	10	10	10	100
III	10	10	10	10	10	10	10	10	10	10	100
IV	10	10	10	10	10	10	10	10	10	10	100

Table IX: T-Values Between the Groups in Production of Active Reversible Sentences.

Groups	t-Values
I - II	t-2.932 ($P < 0.05$)
II -III	t-1.147
III- IV	t-0.611

Table X: T-Values as Indication of the Difference Between Comprehension and Production in Active Reversible Sentences

Group	t-Values
I	t-1.152
II	t-0.318
III	t-0.000
IV	t-0.000

Table XI: Distribution of Correct Scores in Comprehension in Passive Reversible Sentences

Groups	Correct Scores										Mean Correct Scores
I	2	6	0	6	3	6	7	6	6	6	4.8
II	5	6	4	8	8	8	8	6	8	4	6.5
III	8	6	8	6	8	8	6	6	4	8	6.8
IV	6	10	8	6	8	10	8	6	8	8	7.8

Table XII: Distribution of Percent Correct Scores in Comprehension in Passive Reversible Sentences

Groups	%Correct Scores										Mean Percent Correct Scores
I	20	60	0	60	30	60	70	60	60	80	48
II	50	60	40	80	80	80	80	60	80	40	65
III	80	60	80	60	80	80	60	60	40	80	68
IV	60	100	80	60	80	100	80	60	80	80	78

Table XIII: Distribution of Scorable Responses (20 Possible) in Comprehension of Passive Reversible Sentences

Groups	Scorable Responses										Mean Percent Scorable Responses
I	8	10	10	10	10	10	10	10	10	10	98
II	10	10	10	10	10	10	10	10	10	10	100
III	10	10	10	10	10	10	10	10	10	10	100
IV	10	10	10	10	10	10	10	10	10	10	100

Table XIV: T-Values Between the Groups in Comprehension of Passive Reversible Sentences

Groups	t-Values
I - II	t-2.698 ($P<0.05$)
II -III	t-0.445
III - IV	t-1.422

Table XV: Distribution of Correct Scores in Production of Passive Reversible Sentences

Groups	Correct Scores										Mean Correct Scores
I	0	4	0	3	1	2	5	2	5	2	2.4
II	3	6	2	3	6	2	2	0	2	2	2.8
III	2	2	6	2	6	4	10	4	4	6	4.6
IV	6	6	6	4	6	8	5	6	8	4	5.9

Table XVI: Distribution of Percent Correct Scores in Production of Passive Reversible Sentences

Groups	% Correct Scores										Mean Percent Correct Scores
I	0	40	0	30	10	20	50	20	50	20	24
II	30	60	20	30	60	20	20	0	20	20	28
III	20	20	60	20	60	40	100	40	40	60	46
IV	60	60	60	40	60	80	50	60	80	40	59

Table XVII: Distribution of Percent Scores in Production of Agentless Passive

Groups	Mean Percent of Agentless Passive
I	15%
II	16%
III	29%
IV	29%

Table XVIII: Distribution of Percent Scores of Passive Sentences Produced as Active Sentences

Groups	Mean Percent
I	19%
II	44%
III	20%
IV	15%

Table XIX: T-Values Between the Groups in Production of Passive Reversible Sentences

Groups	t-Values
I - II	t-0.877
II -III	t-3.389 (P<0.01)
III - IV	t-2.131

Table XX: T-Values as Indication of the Difference Between Comprehension and Production in Passive Reversible Sentences

Groups	t-Values
I	t-5.622 (P<0.01)
II	t-5.061 (P<0.01)
III	t-2.538 (P<0.05)
IV	t-3.943 (P<0.01)

Table XXI: Distribution of the Difference (%) Between Comprehension of Active Reversible Sentences and Comprehension of Passive Reversible Sentences

Groups	Mean Percent Correct Scores		Difference %
	Comprehension in Active	Comprehension in Passive	
I	70	48	22
II	88	65	23
III	96	68	32
IV	100	78	22

Table XXII: T-Values as Indication of the Differences Between Comprehension of Active Reversible Sentences and Comprehension of Passive Reversible Sentences

Groups	t-Values
I	t-3.091 (P<0.01)
II	t-4.867 (P<0.01)
III	t-5.250 (P<0.01)
IV	t-4.714 (P<0.01)

Table XXIII: Distribution of The Differences (%) Between Production of Active Reversible Sentences and Production of Passive Reversible Sentences

Groups	Mean Percent Correct Scores		Differences %
	Production in Active	Production in Passive	
I	66	24	42
II	87	28	59
III	96	46	50
IV	100	59	41

Table XXIV: T-Values as Indication of the Differences Between Production of Active Reversible Sentences and Production of Passive Reversible Sentences

Groups	t-Values
I	t-6.508 (P<0.01)
II	t-8.546 (P<0.01)
III	t-6.708 (P<0.01)
IV	t-9.462 (P<0.01)

APPENDIX B

Figure I

COMPREHENSION OF SENTENCES IN ACTIVE VOICE

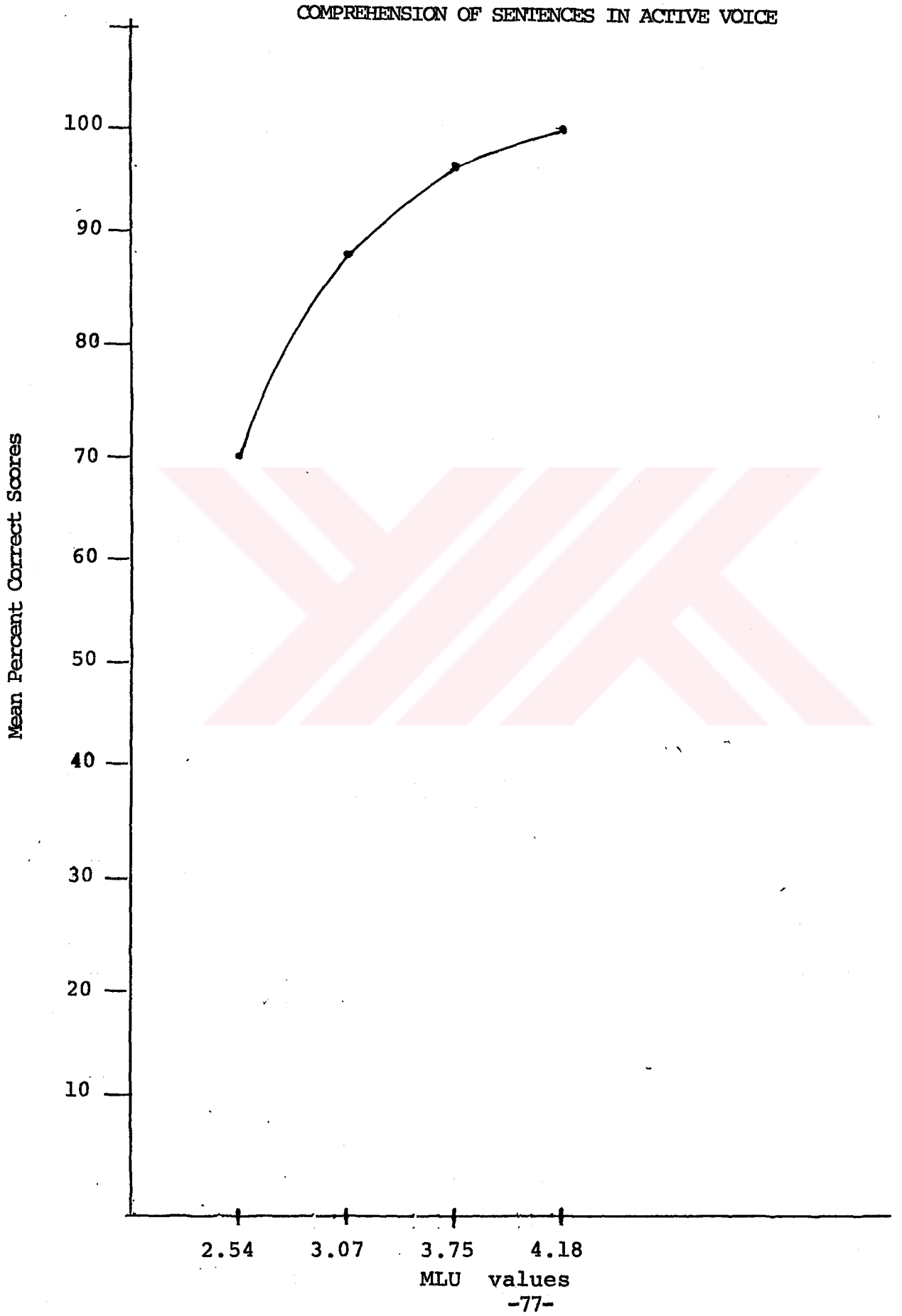


Figure II

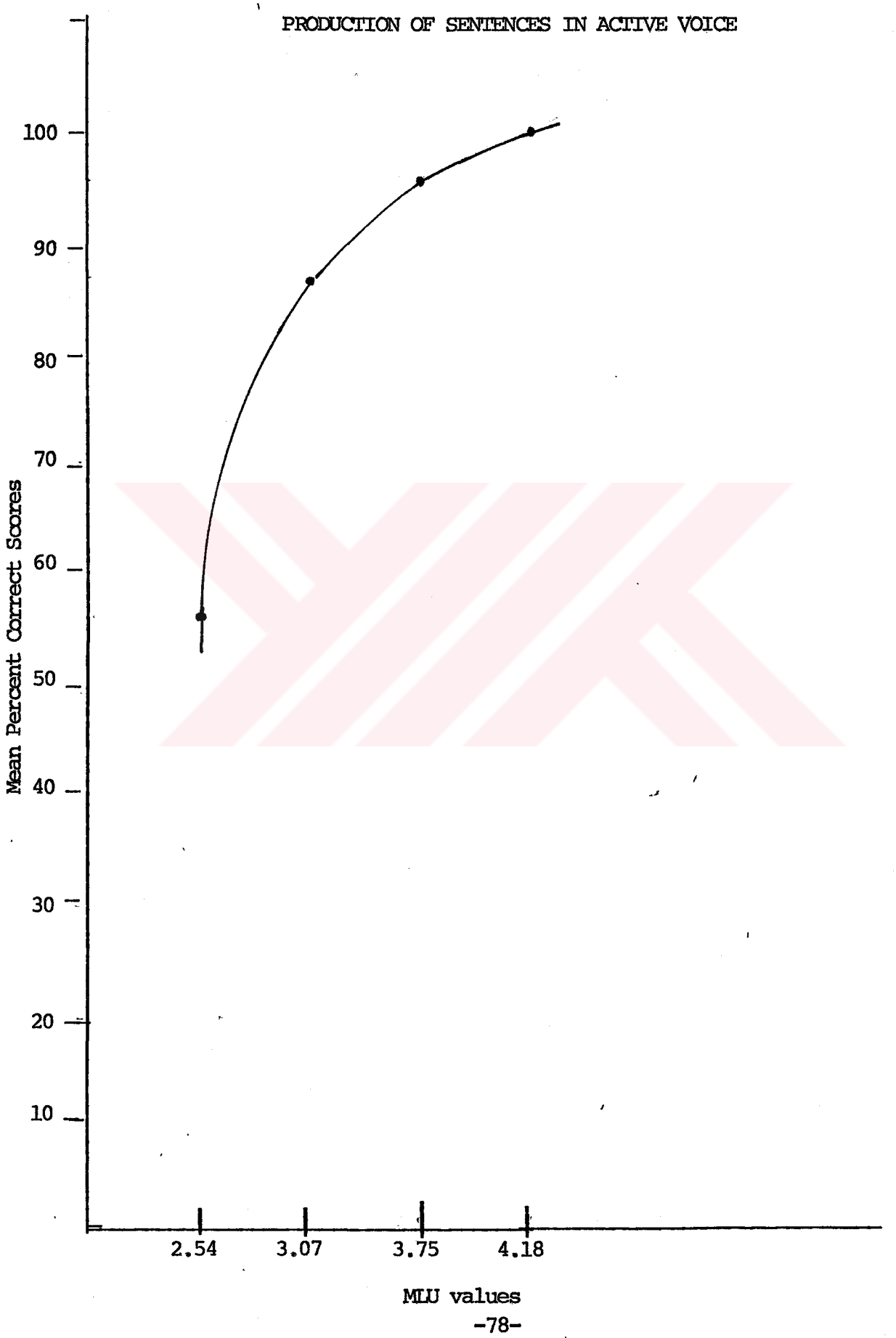

PRODUCTION OF SENTENCES IN ACTIVE VOICE
Mean Percent Correct Scores
100
90
80
70
60
50
40
30
20
10
2.54
3.07
3.75
4.18
MLU values

Figure III

COMPREHENSION AND PRODUCTION OF SENTENCES IN ACTIVE VOICE

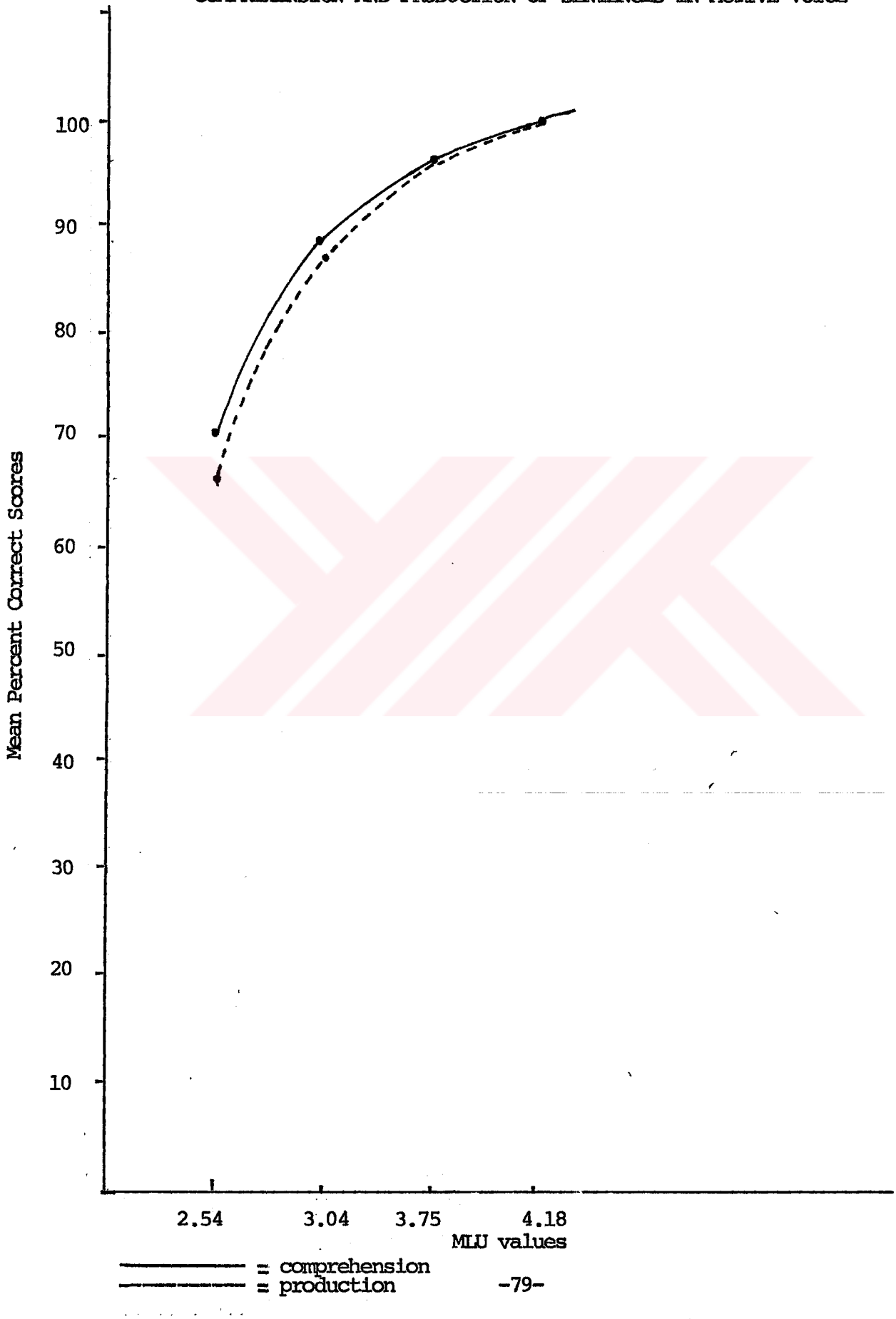


Figure IV

COMPREHENSION OF SENTENCES IN PASSIVE VOICE

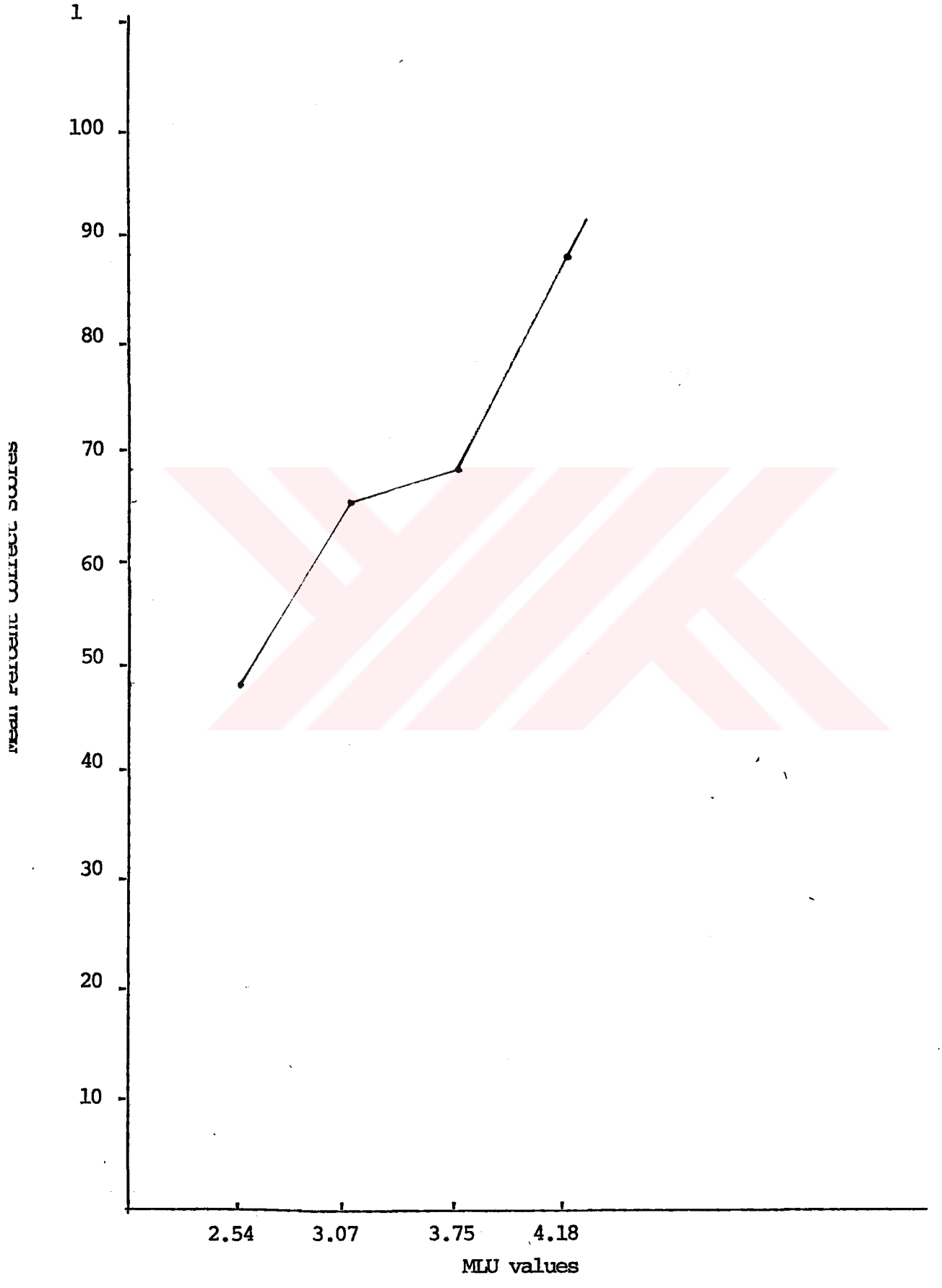


Figure V

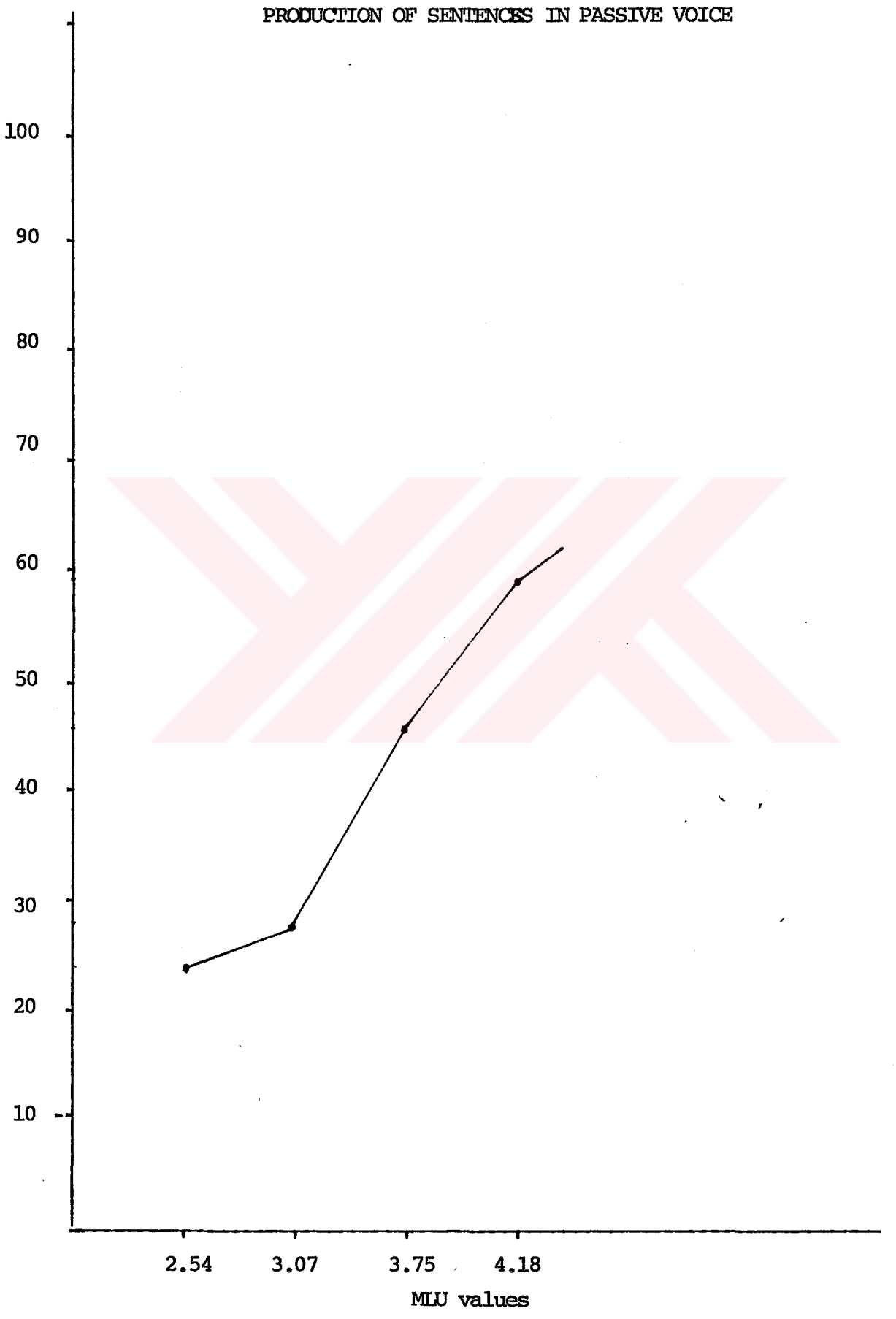

PRODUCTION OF SENTENCES IN PASSIVE VOICE
100
90
80
70
60
50
40
30
20
10
2.54
3.07
3.75
4.18
MLU values

Figure VI

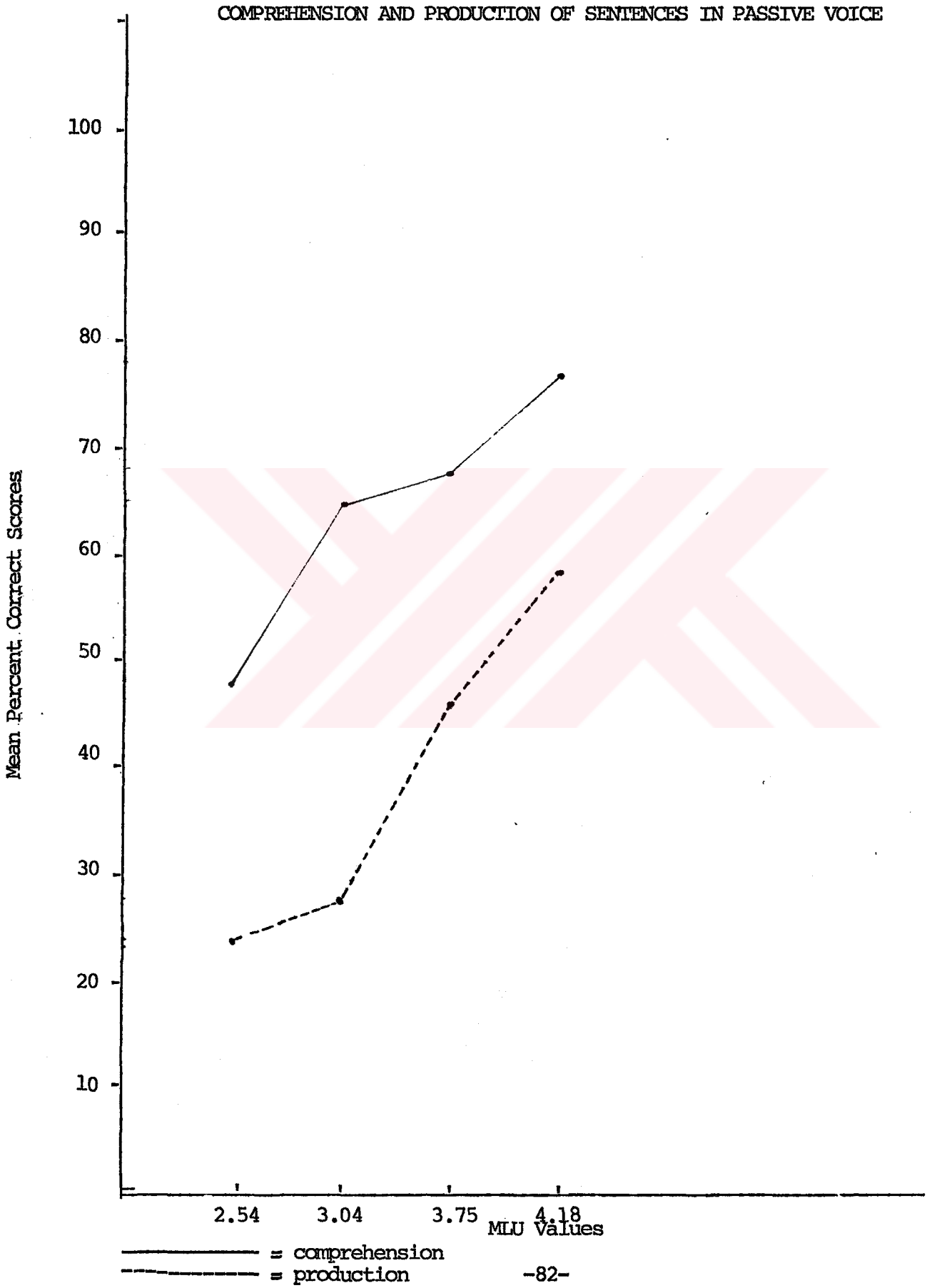

COMPREHENSION AND PRODUCTION OF SENTENCES IN PASSIVE VOICE
Mean Percent Correct Scores
100
90
80
70
60
50
40
30
20
10
2.54
3.04
3.75
4.18
MLU Values
= comprehension
= production

Figure VII

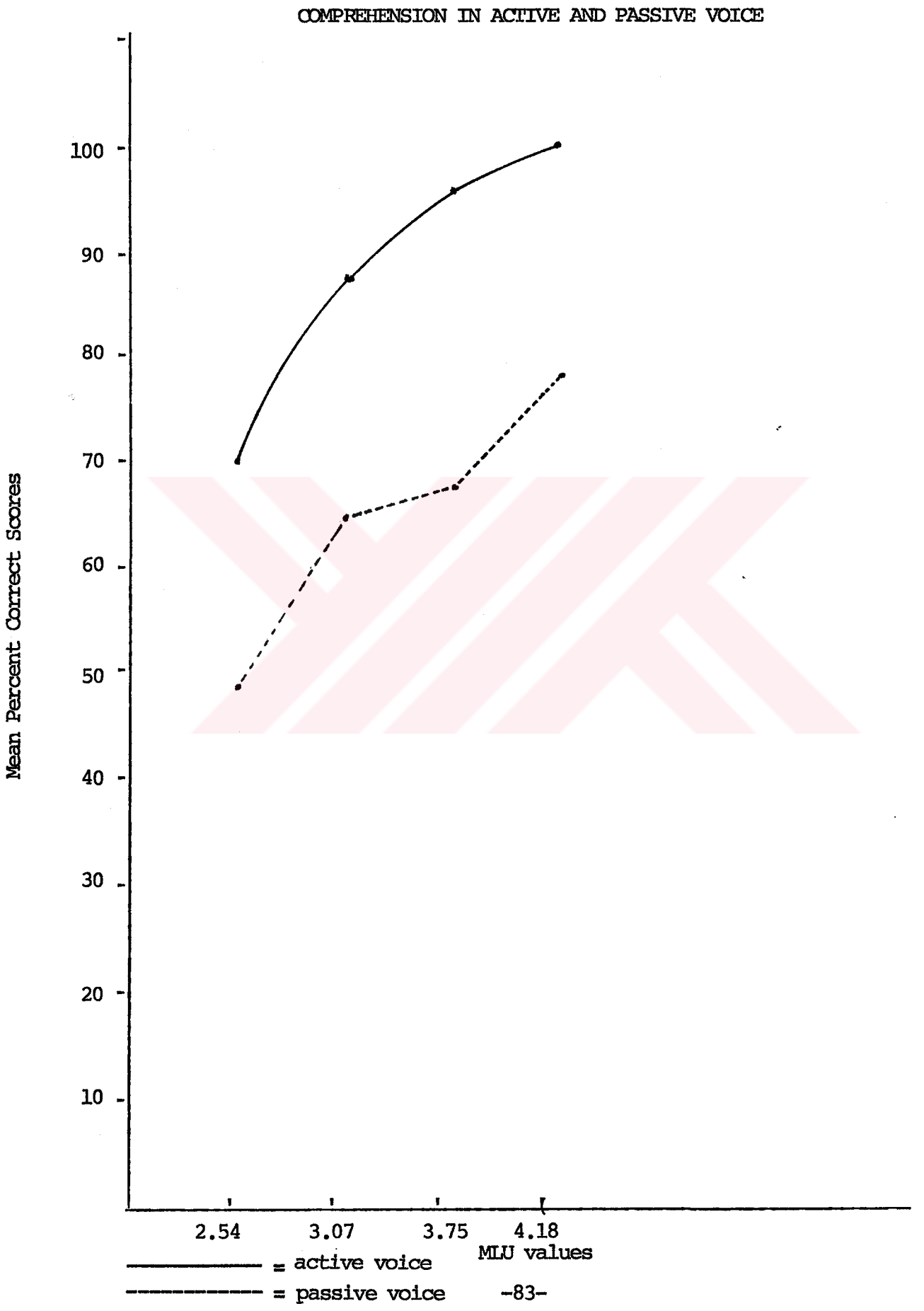

COMPREHENSION IN ACTIVE AND PASSIVE VOICE
Mean Percent Correct Scores
100
90
80
70
60
50
40
30
20
10
2.54
3.07
3.75
4.18
MLU values
= active voice
= passive voice

Figure VIII

PRODUCTION IN ACTIVE AND PASSIVE VOICE

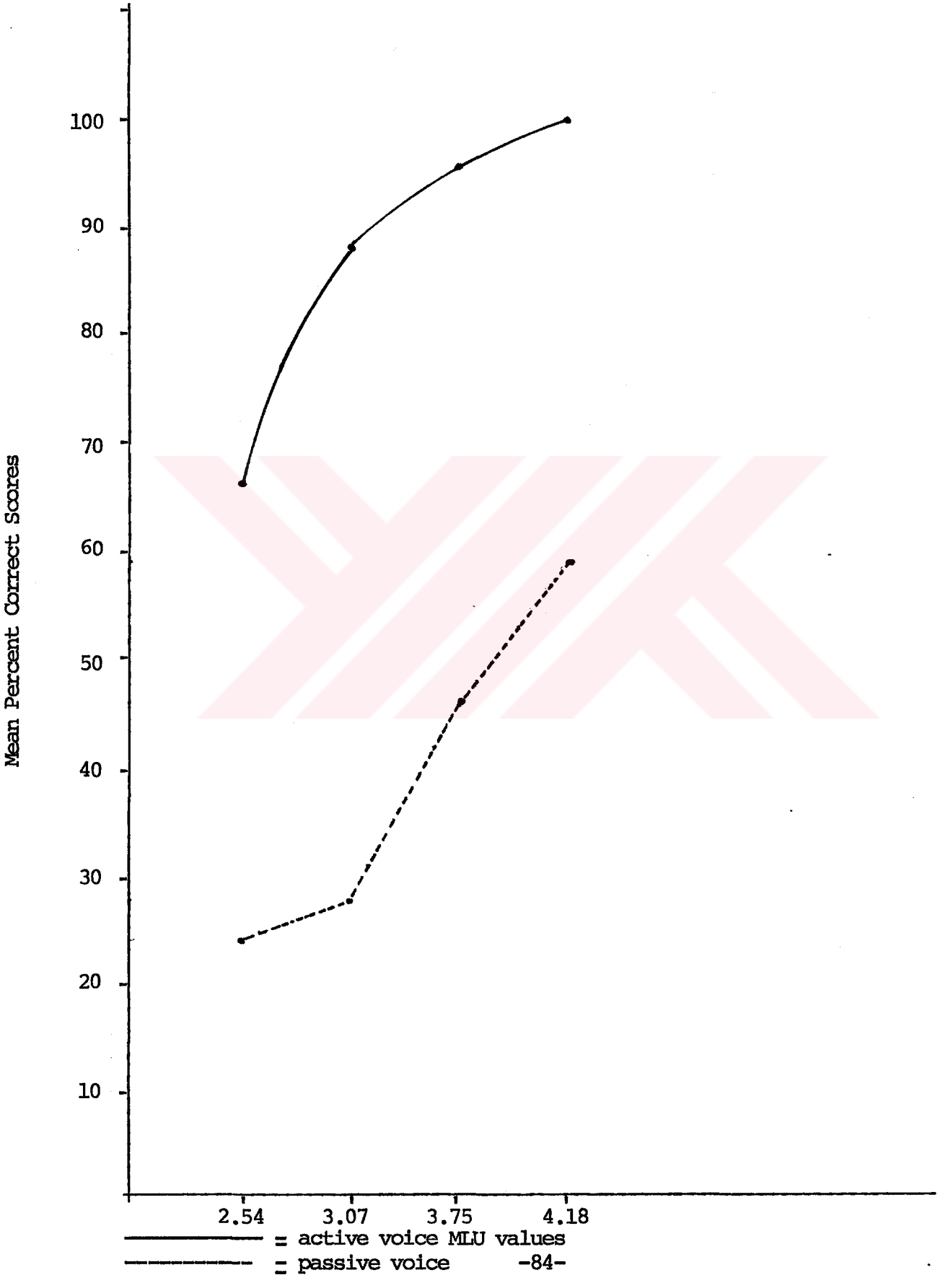


Figure IX

PASSIVE SENTENCES PRODUCED AS AGENTLESS PASSIVE

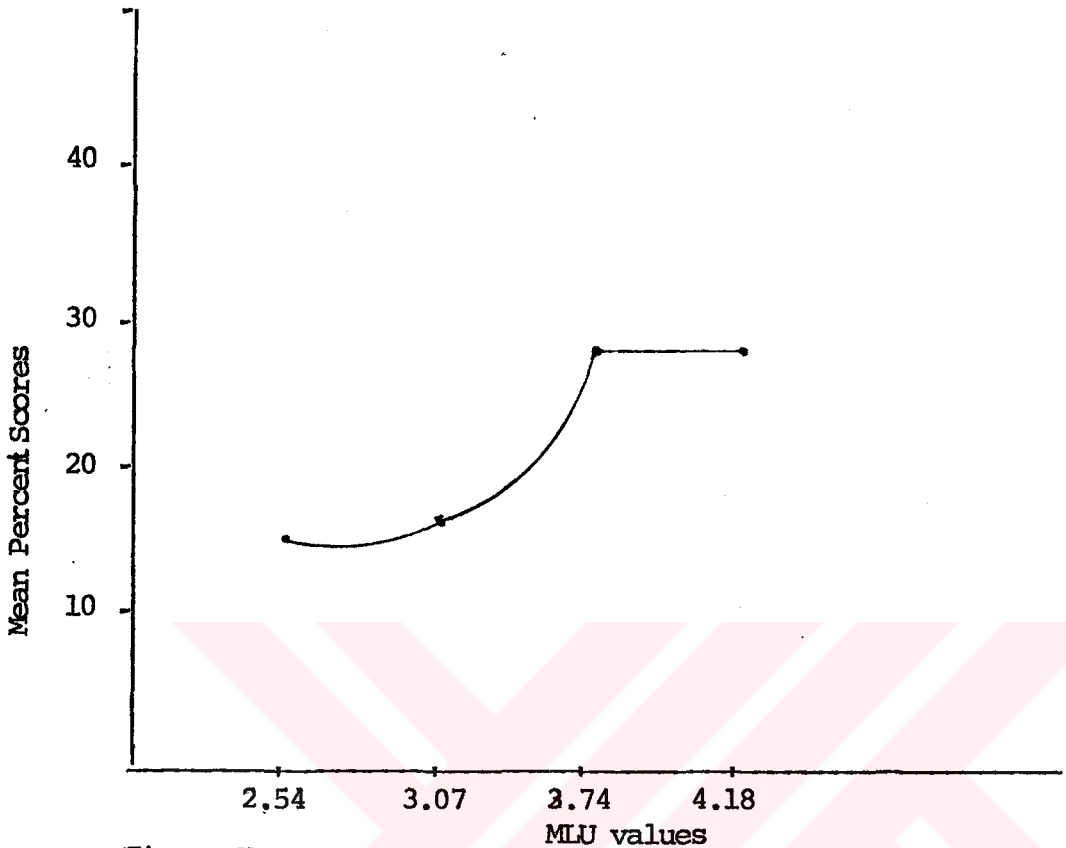
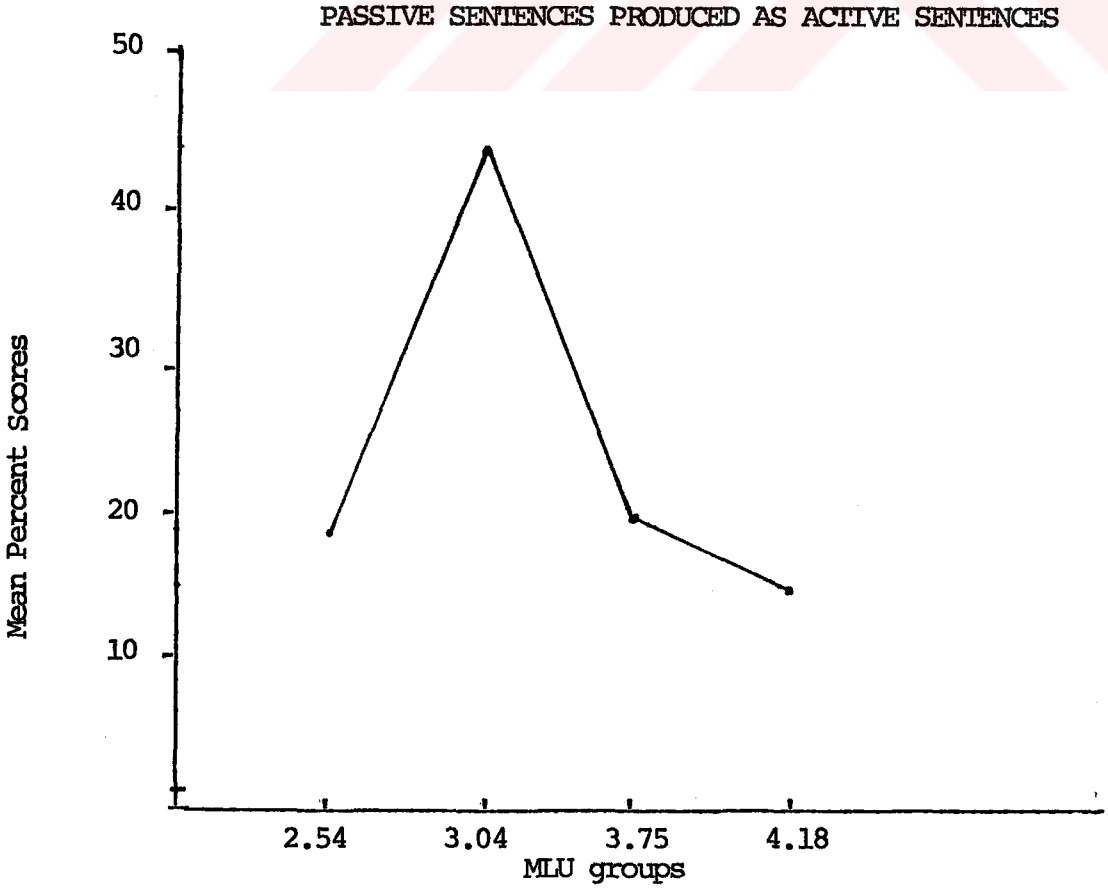


Figure X

PASSIVE SENTENCES PRODUCED AS ACTIVE SENTENCES



APPENDIX C

SENTENCES IN ACTIVE VOICE

For Comprehension Task:

1- a) Kedi köpeği kovalıyor.
cat dog acc. chase-ing

(The cat is chasing the dog.)

b) Köpek kediyi kovalıyor.
dog cat acc. chase-ing

(The dog is chasing the cat.)

2- a) Araba trene çarptı.
car train dat. bump-ed

(The car bumped the train.)

b) Tren arabaya çarptı.
train car dat. bump-ed

(The train bumped the car.)

3- a) Araba kamyonu çekiyor.
car truck acc. pull-ing

(The car is pulling the truck.)

b) Kamyon arabayı çekiyor.
truck car acc. pull-ing

(The truck is pulling the car.)

4- a) Kamyon köpeğe çarptı.

truck dog dat. bump-ed

(The truck bumped the dog.)

b) Köpek kamyona çarptı.

dog truck dat. bump-ed

(The dog bumped the truck.)

5- a) Kız çocuk erkek çocuğu kovalıyor.

girl boy acc. chase-ing

(The girl is chasing the boy.)

b) Erkek çocuk kız çocuğu kovalıyor.

boy girl acc chase-ing

(The boy is chasing the girl.)

For Production Task:

6- a) Kedi kız çocuğu kovalıyor.

cat girl acc. chase-ing

(The cat is chasing the girl.)

b) Kız çocuk kediyi kovalıyor.

girl cat acc. chase-ing

(The girl is chasing the cat.)

7- a) Erkek çocuk köpeği taşıyor.

boy dog acc. carry-ing

(The boy is carrying the dog .)

b) Köpek erkek çocuğu taşıyor.

dog boy acc. carry-ing

(The dog is carrying the boy.)

8- a) Kız çocuk erkek çocuğu öpüyor.

girl boy acc. kiss-ing

(The girl is kissing the boy.)

b) Erkek çocuk kız çocuğu öpüyor.

boy girl acc. kiss-ing

(The boy is kissing the girl.)

9- a) Kız çocuk erkek çocuğu dövüyor.

girl boy acc. hit-ing

(The girl is hitting the boy.)

b) Erkek çocuk kız çocuğu dövüyor.

boy girl acc. hit-ing

(The boy is hitting the girl.)

10- a) Erkek çocuk atı kovalıyor.

boy horse acc. chase-ing

(The boy is chasing the horse.)

b) At erkek çocuğu kovalıyor.

horse boy acc. chase-ing

(The horse is chasing the boy.)

SENTENCES IN PASSIVE VOICE

For Comprehension Task:

11-a)	At	araba	tarafından	çekiliyor.
	horse	car	by	being pull-ed

(The horse is being pulled by the car.)

b)	Araba	at	tarafından	çekiliyor.
	car	horse	by	being pull-ed

(The car is being pulled by the horse.)

12-a)	Bebek	annesi	tarafından	öpülüyor.
	baby	mother her poss.	by	kiss-ed

(The baby is being kissed by her mother.)

b)	Anne	bebek	tarafından	öpülüyor.
	mother	baby	by	being kiss-ed

(The mother is being kissed by the baby.)

13-a)	Kayık	gemi	tarafından	çekiliyor.
	boat	ship	by	being pull-ed

(The boat is being pulled by the ship)

b)	Gemi	kayık	tarafından	çekiliyor.
	ship	boat	by	being pull-ed

(The ship is being pulled by the boat.)

14-a) Lokomotif vagon tarafından çekiliyor.

locomotive wagon by being pull-ed

(The locomotive is being pulled by the wagon.)

b) Vagon lokomotif tarafından çekiliyor.

wagon locomotive by being pull-ed

(The wagon is being pulled by the locomotive.)

15-a) Erkek çocuk köpek tarafından kovalanıyor.

boy dog by being chase-d

(The boy is being chased by the dog.)

b) Köpek erkek çocuk tarafından kovalanıyor.

dog boy by being chase-d

(The dog is being chased by the boy.)

For Production Task:

16-a) Kız çocuk anne tarafından süsleniyor.

girl mother by being beautify-ed

(The girl is being beautified by the mother.)

b) Anne kız çocuk tarafından süsleniyor.

mother girl by being beautify-ed

(The mother is being beautified by the girl.)

17-a) Hırsız polis tarafından kovalanıyor.

thief policeman by being chase-d

(The thief is being chased by the policeman.)

b) Polis hırsız tarafından kovalanıyor.

policeman thief by being chase-d

(The policeman is being chased by the thief.)

18-a) Kedi inek tarafından kovalanıyor.

cat dog by being chase-d

(The cat is being chased by the cow.)

b) İnek kedi tarafından kovalanıyor.

cow cat by being chase-d

(The cow is being chased by the cat.)

19-a) Erkek çocuk koyun tarafından kovalanıyor.

boy sheep by being chas -ed

(The boy is being chased by the sheep)

b) Koyun erkek çocuk tarafından kovalanıyor.

sheep boy by being chase -ed

(The sheep is being chased by the boy.)

20-a) Koyun inek tarafından kovalanıyor.

sheep cow by being chase-d

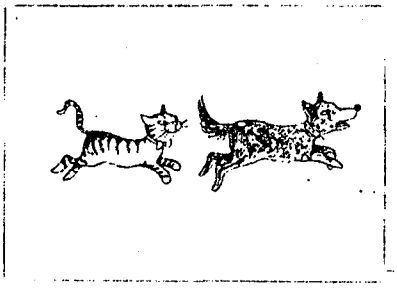
(The sheep is being chased by the cow.)

b) İnek koyun tarafından kovalanıyor.

cow sheep by being chase-d

(The cow is being chased by the cat.)

APPENDIX D



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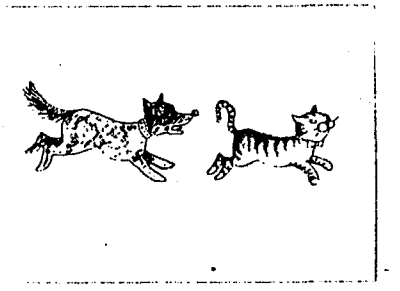

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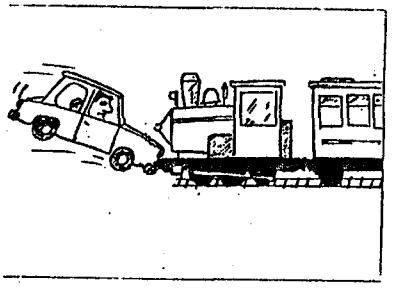

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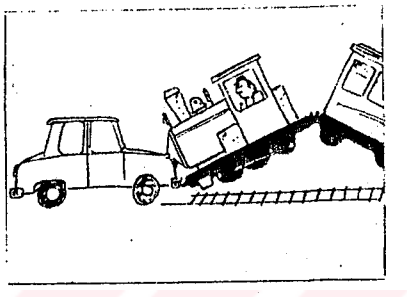

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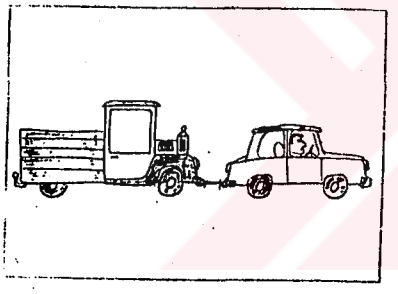

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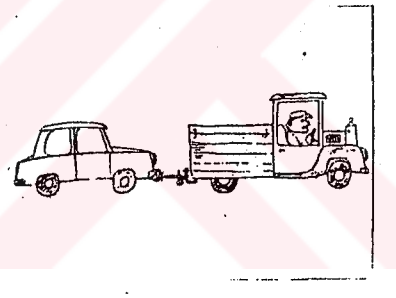

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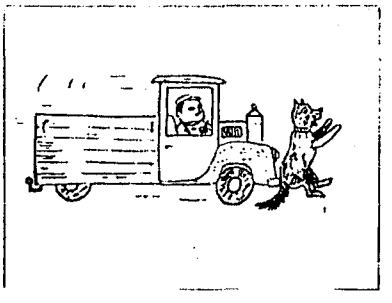

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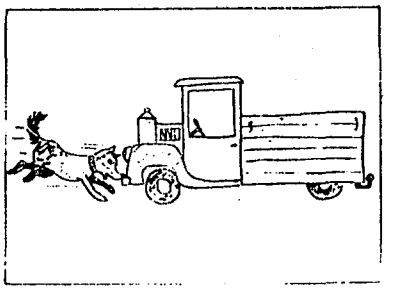

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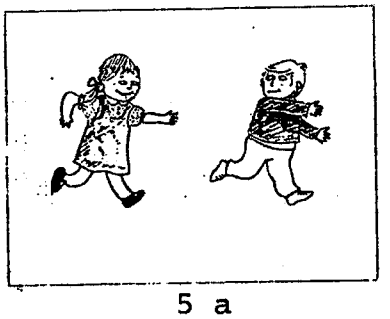

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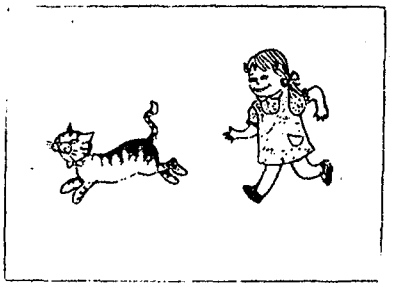

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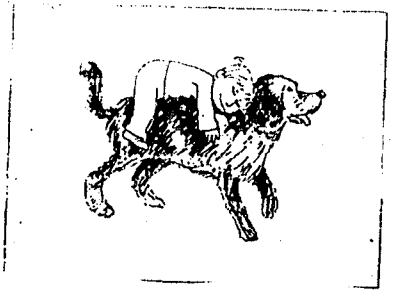

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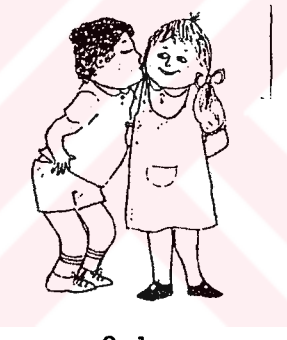

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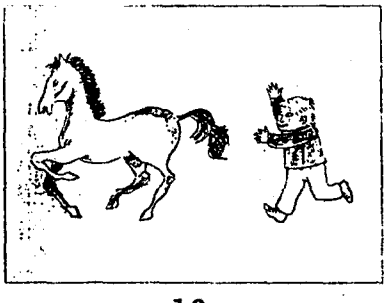

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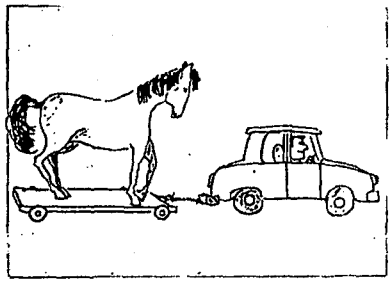

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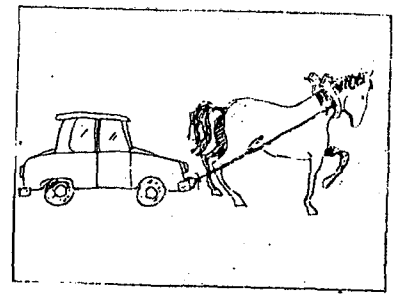

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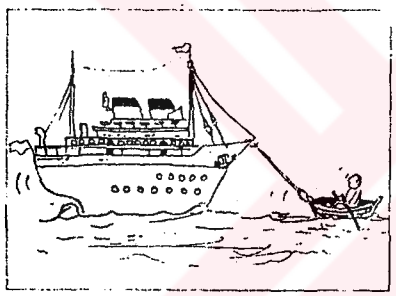

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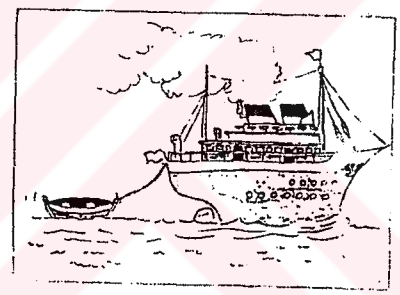

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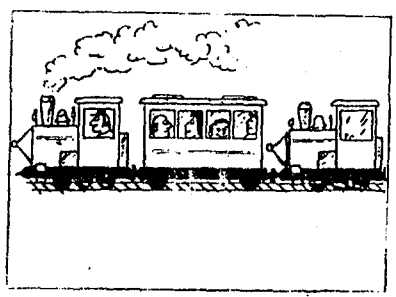

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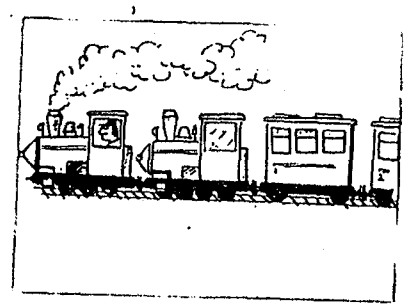

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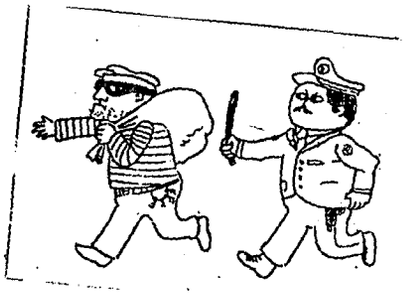
15 a

15 b

16 a

16 b



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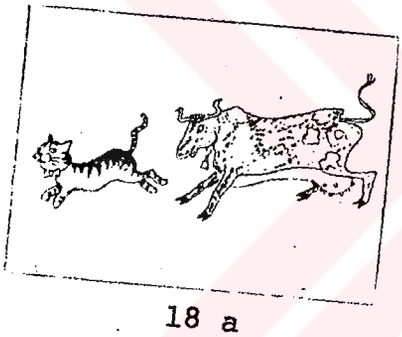

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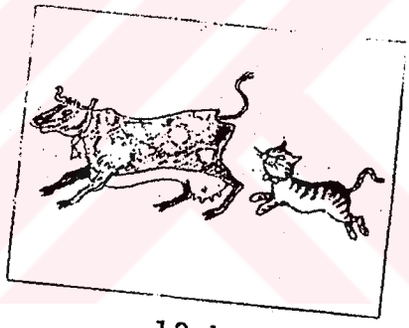

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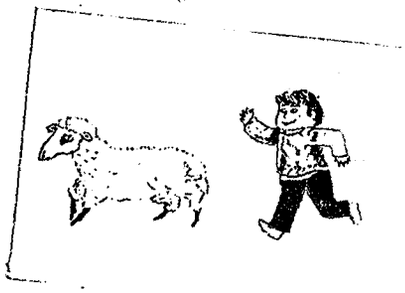

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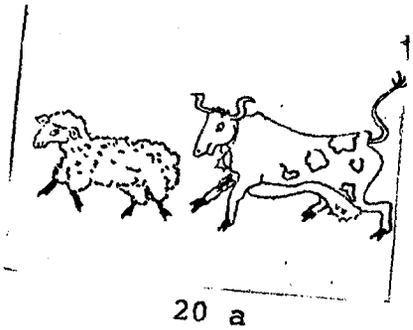

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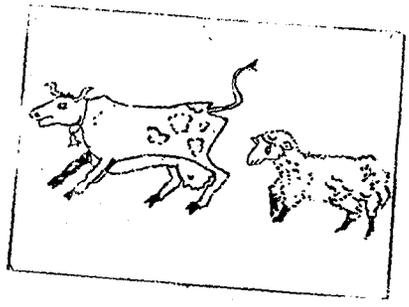

20 b

APPENDIX E

Rules for calculating mean length of utterance

1. Start with the second page of the transcription unless that page involves a recitation of some kind. In this latter case start with the first recitation-free stretch. Count the first 100 utterances satisfying the following rules.

2. Only fully transcribed utterances are used; none with blanks. Portions of utterances, entered in parentheses to indicate doubtful transcription, are used.

3. Include all exact utterance repetitions (marked with a plus sign in records). Stuttering is marked as repeated efforts at a single word; count the word once in the most complete form produced. In the few cases where a word is produced for emphasis or the like (*no, no, no*) count each occurrence.

4. Do not count such fillers as *mm* or *oh*, but do count *no*, *yeah*, and *hi*.

5. All compound words (two or more free morphemes), proper names, and ritualized reduplications count as single words. Examples: *birthday*, *rackety-boom*, *choo-choo*, *quack-quack*, *night-night*, *pocketbook*, *see saw*. Justification is that no evidence that the constituent morphemes function as such for these children.

6. Count as one morpheme all irregular pasts of the verb (*got*, *did*, *went*, *saw*). Justification is that there is no evidence that the child relates these to present forms.

7. Count as one morpheme all diminutives (*doggie*, *mommie*) because these children at least do not seem to use the suffix productively. Diminutives are the standard forms used by the child.

8. Count as separate morphemes all auxiliaries (*is*, *have*, *will*, *can*, *must*, *would*). Also all catenatives: *gonna*, *wanna*, *hafta*. These latter counted as single morphemes rather than as *going to* or *want to* because evidence is that they function so for the children. Count as separate morphemes all inflections, for example, possessive {s}, plural {s}, third person singular {s}, regular past {d}, progressive {iŋ}.

9. The range count follows the above rules but is always calculated for the total transcription rather than for 100 utterances.

Brown, 1973; 54

APPENDIX F

Table of T-Values

P (den büyük "t" değerlerinin oluş ihtimali).						
%50	%30	%20	%10	%5	%1	S.D.
1.000	1.963	3.078	6.314	12.706	63.657	1
1.816	1.386	1.886	2.920	4.303	9.925	2
0.765	1.250	1.638	2.353	3.182	5.841	3
0.741	1.190	1.533	2.132	2.776	4.604	4
0.727	1.156	1.476	2.015	2.571	4.032	5
0.718	1.134	1.440	1.943	2.447	3.707	6
0.711	1.119	1.415	1.895	2.365	3.499	7
0.706	1.108	1.397	1.860	2.306	3.355	8
0.703	1.100	1.383	1.834	2.262	3.250	9*
0.700	1.093	1.372	1.812	2.228	3.169	10
0.697	1.088	1.363	1.796	2.201	3.106	11
0.695	1.083	1.356	1.782	2.179	3.055	12
0.694	1.079	1.350	1.771	2.160	3.012	13
0.692	0.076	1.345	1.761	2.145	2.977	14
0.691	1.074	1.341	1.753	2.131	2.947	15
0.690	1.071	1.337	1.746	2.120	2.921	16
0.689	1.069	1.333	1.740	2.110	2.898	17
0.688	1.067	1.330	1.734	2.101	2.878	18
0.688	1.066	1.328	1.729	2.093	2.861	19
0.687	1.064	1.325	1.725	2.086	2.845	20
0.686	1.063	1.323	1.721	2.080	2.831	21
0.686	1.061	1.321	1.717	2.074	2.819	22
0.685	1.060	1.319	1.714	2.069	2.807	23
0.685	1.059	1.318	1.711	2.064	2.797	24
0.684	1.058	1.316	1.708	2.060	2.787	25
0.684	1.058	1.315	1.706	2.056	2.779	26
0.684	1.057	1.314	1.703	2.052	2.771	27
0.683	1.056	1.313	1.701	2.048	2.763	28
0.683	1.055	1.311	1.699	2.045	2.756	29
0.683	1.055	1.310	1.697	2.042	2.750	30
—	—	—	—	2.021	2.704	40
—	—	—	—	2.008	2.678	50
—	—	—	—	2.000	2.660	60
—	—	—	—	1.990	2.638	80
—	—	—	—	1.984	1.626	100
—	—	—	—	1.972	2.601	200
—	—	—	—	1.965	2.586	500
0.675	1.036	1.282	1.645	1.960	2.576	00
% 25	% 15	% 10	% 5	% 2.5	% 0.5	

.... den büyük cebirsel t-değerlerinin oluş ihtimali.

Düzgüneş ve ark., 1983, 206

* df:9

REFERENCES

Anderson, B. (1963) The Short-Term Retention of Active and Passive Sentences. Unpublished Doctoral Dissertation, The John Hopkins University.

Balpınar, Z. (1981) Turkish Passives: Morphosemantic and Syntactic Considerations, Unpublished Doctoral Dissertation, University of Florida.

Bever, T.G. (1970) "The Cognitive Basis for Linguistic Structures". In J.R. Hayes (ed.) Cognition and the Development of Language. New York: John Wiley and Sons.

Bloom, L. (1970) Language Development: Form and Function in Emerging Grammars, Cambridge, Massachusets: The M.I.T. Press.

_____ (1978) Readingsin Language Development, New York: John Wiley and Sons.

Bloom, L., and Lahey, M. (1978) Language Development and Language Disorders, New York: John Wiley and Sons.

Blount, B. (1969) Acguisition of Language by Luo Children, Unpublished Doctoral Dissertation, University of California, Berkeley.

Bowerman, M. (1970) Learning to Talk: A Cross-Linguistic Comparison of Early Syntactic Development with Special Reference to Finnish, Unpublished Doctoral Dissertation, Harvard University.

_____ (1973) Early Syntactic Development: A Cross-Linguistic Study with Special Reference to Finnish, Cambridge:Cambridge University Press.

Braine, M.D.S. (1963) "The Ontogenesis of English Phrase Structure: The First Phase", Language, 39, 1-13

_____ (1970) "The Acguisition of Language in Infant and Child", In Caroll Reed (ed.) The Learning of Language: Essays in Honor of David H.Russel; New York: Appleton-Century-Crofts.

Britton, J. (1982) Language and Learning New York: Penguin press.

Brown, R. (1983) A First Language: The Early Stages, Cambridge, Mass.: Harvard University Press.

Brown, R., and Fraser, C. (1963) "The Acguisition of Syntax" in C.N. Cofer and B. Musgrave (Eds.) Verbal Behaviour and Learning : Problems and Process. New York: McGraw-Hill,

Brown, R. and Bellugi, U. (1964) "Three Processes in the Child's Acguisition of Syntax ", Harvard Educational Review, 34, 133-151.

Brown, R., and Cazden, C., and Bellugi, U. (1968) The Child's Grammar from I to III. in 9. Hill (ed.) Minnesota Symposia on child Psychology, Vol. 2, Minneapolis: University of Minnesota Press.

Bruner, J.S. (1975) "The Ontogenesis of Speech Acts", Journal of Child Language, 2, 1-19.

Carroll, J.B. (1968) "Process and Content in Psycholinguistics", In Current Trends in Psychology, Pittsburg Press.

Carrow, M. (1968) "The Development of Auditory Comprehension of Language Structure in Children",Journal of Speech Hearing Dis. ., 33, 105-108.

Cazden, C. (1965) Environmental assistance to the Child's Acgusition of Grammar. Unpublished Doctoral Dissertation, Harvard University.

Chapman, R., and Miller, Y. (1978) "Word Order in Early Two and Three Word Sentences". In L. Bloom (ed.) Readings in Language Development", New York: John Wiley and Sons.

Chomsky, N. (1965) Aspects of the Theory of Syntax, Cambridge, Mass. The M.I.T. Press.

Clark, H. and Clark, E. (1977) Psychology and Language, New York: New Harcourt Brock Jovanovich Inc.,

Çapan, S. (1981) A Comparative Study on the Acguisition of English and Turkish with Special Reference to the Language Development of Two Turkish Children, Unpublished Doctoral Dissertation, Ankara Hacettepe University,

Dale, P. (1972) Language Development: Structure and Functions,Washington, Dryden Press. Inc.,

Düzgüneş, O., ve Ark., (1983) İstatistik Metodları-I, Ankara: A.Ü. Ziraat Fakültesi Yayınları.

Eckman, R., and Hastings, H. (1979) (eds.) Studies in First and Second Language Acguisition, Rowley, Mass.: Newbury House.

Ekmekçi, Ö.F. (1979) Acguisition of Turkish: A Longitudinal Study on the Early Language Development of a Turkish Child ,Unpublished Doctoral Dissertation, Austin: University of Texas.

Ergin, M. (1962) Türk Dil Bilgisi, İstanbul: İstanbul Üniversitesi Yayınları.

Ervin-Tripp, S. (1973) "Some Strategies for the First Two Years", In T. Moore (ed.) Cognitive Development and the Acguisition of Language, New York: Academic Press.

Fraser, C., Bellugi, U., and Brown, R. (1963) "Control of Grammar and Production". Journal of Verbal Behavior and Verbal Learning, 2, 121-135.

Gencan, T.N. (1975) (3rd Ed.) Dilbilgisi, İstanbul: Türk Dil Kurumu Yayınları.

Greenfield, P.H., and Smith, J.H. (1976) The Structure of Communication in Early Language Development, New York: Academic Press.

Harwood, F.W.(1959) "Quantitative Study of the Speech of Australian children", Language and Speech, 2, 236-270.

Huxley, R., and Ingram, E. (1971) Language Acguisition: Models and Methods, New York: Academic Press Inc.,

Kernan, K. (1969) The Acguisitbn of Language by Samoan Children, Unpublished Doctoral Dissertation. University of California, Berkeley.

Klein, R. (1974) "Word Order: Dutch Children and their Mothers", Publicaties Van Het Instituutvoor Algemen Toal wetesschap, 9, 1-43.

de Laguna, G. (1927) Speech: Its Function and Development, New Heaven: Yale University Press.

Leopold, W.F. (1949) Speech Development of a Bilingual Child: Evanston, Illinois: Northwestern University Press.

Lowell, K. and Dixon, E.M. (1965) "The Growth and Control of Grammars in Imitation, Comprehension and Production", Journal of Child Psychology and Psychiatry, 5, 1-9.

Lowell, K., and Dixon, E.M. (1967) "The Growth of the Control of Grammar in Imitation, Comprehension and Production". Journal of Child Psychology and Psychiatry, 8, 31-39.

McCarthy, (1954) "Language Development in Children". In L. Carmichael (ed.) A Manual of Child Psychology), 2nd Ed. New York: John Wiley and Sons.

Menyuk, P. (1963) "Syntactic Structures in the Language of Children", Child Development, 34, 407-422.

Miller, W. (1962) "Some Psychological Studies of Grammar", American Psychologist, 17, 748-762.

Miller, W. and Ervin, S. (1964) "The Development of Grammar in Child Language". In U. Bellugi and R. Brown (Eds.) The Acquisition of Language, Monographs of the Society for Research in Child Development, 92, 9-34.

Miller, W. and McKean, J. (1964) "A Chronometric Study of Some Relations between Sentences" Quarterly Journal of Experimental Psychology, 16, 296-305.

McNeill, D. (1965) Development of the Semantic System, Unpublished Manuscript, Cambridge, Mass:, Center for Cognitive Studies, Harvard University.

McNeill, D. (1966) "The Creation of Language by Children" In J.Lyons and R. Wales Psycholinguistics Papers, Edinburgh Edinburch University Press.

McNeill, D. (1970) The Acquisition of Language: The Study of Developmental Psycholinguistics; New York: Harper and Row. Publishers.

McNeill, D. (1975) Semiotic Extension, In R.L. Solso (ed) Information Processing and Cognition: The Layola Symposium, New York: Hillsdale, Erlbaum.

Owings, N., (1972) Internal Reliability and Item Analysis of the Miller-Yoder Test of Grammatical Comprehension, Master's thesis, University of Wisconsin.

Rodgan, M. (1976) Single-Word Usage, Cognitive Development and the Beginning of Combinatorial Speech: A Study of Ten English - Speaking Children, London: Cambridge University Press.

Saporta, S. (1961) Psycholinguistics: A Book of Readings, New York: Holt, Rinehart, Winston.

Schelisinger, I.M. (1966) "Effects of Grammatical Transformation" In Sentence Structure and The Reading Process, Technical Report no.24, U.S., Office of Noval Research, 1966.

Schelisinger, I.M. (1971) "Production of Utterances and Language Acquisition". In D. Slobin (ed.) The Ontogenesis of Grammar, New York: Academic Press.

Slobin, D. (1966) "Grammatical Transformations and Sentence Comprehension in Childhood and Adulthood", Journal of Verbal Learning and Verbal Behavior, 5, 219-227.

Slobin, D. (1968) "Recall of Full and Truncated Passive Sentences in Connected Discourse", Journal of Verbal Learning and Verbal Behavior, 7, 876-881.

Slobin, D., and Aksu, A. (1980) "Acquisition of Turkish", Berkeley Project Report, Berkeley: University of California, 1-22.

Turner, A., and Rommetveit, R. (1967a) "The Acquisition of Sentence Voice and Reversibility", Child Development, 38, 649-660

_____ (1967b) "Experimental Manipulation of the Production of Active and Passive Voice in Children". Language and Speech, 10, 169-180.

Wanner, E., and Gleitman, L. (1983) Language Acquisition: The State of the Art. (2nd Ed.) New York: Cambridge University Press.

de Villers, P.A., and de Villers, J.G. (1972) "Early Judgements of Semantic and Syntactic Acceptability by Chidren", Journal of Psychological Research, 1, 299-310.

_____ (in press) "Development of the Use of Word Order in Comprehension", Journal of Psychological Research.