

MEASUREMENT AND ANALYSIS OF LINGUISTIC  
DEVELOPMENT IN SIX THREE-YEAR-OLD CHILDREN

by

W. David Whitescarver

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A THESIS

Approved:

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Committee

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~~Dean of the Graduate School~~

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DEVELOPMENT IN SIX THREE-YEAR-OLD CHILDREN

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A THESIS

Presented to the Faculty of  
Sam Houston State College  
in Partial Fulfillment of the Requirements

for the Degree

MASTER OF ARTS

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by

W. David Whitescarver

Huntsville, Texas

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Special recognition should also be given the parents of the six children used for this study. Their willingness and co-operation during the research showed their sincere concern for their child's language development. Without their help the research would have been a much more difficult process.

W. DAVID WHITESCARVER

## ABSTRACT

Whitescarver, W. David, Measurement and Analysis of Linguistic Development in Six Three-Year-Old Children. Master of Arts (English), July, 1966, Sam Houston State College, Huntsville, Texas. 107 pp.

### Purpose

It was the purpose of this study to measure and analyze the linguistic development of six three-year-old children. Special consideration was given environmental influences, vocabulary, speech, and usage. Because of the growing interest in the language of pre-school age children, this study was timely and potentially useful.

### Methods

The methods used to obtain data for this study were (1) measuring each subject by means of standardized tests; (2) interviewing the parents of each child; (3) conversing informally with each child; (4) recording each child's speech on tape; and (5) reading selected secondary sources.

### Findings

From the evidence presented in this study the following conclusions appear to be in order:

1. Standardized tests are useful in the analysis and measurement of language development of young children.



2. No one standardized test gives conclusive data concerning language development.

3. A battery of standardized tests yields useful yet inconclusive data concerning language development.

4. There is an obvious relationship between intelligence quotients and vocabulary development.

5. There appears to be a relationship between social maturity and vocabulary development.

6. No evidence indicated that motor co-ordination and articulation are related.

7. The child's willingness to talk freely is directly related to vocabulary development.

8. Patterns of articulation development are evident in three-year-old children.

9. Patterns in morphological and syntactical usage are well established at the age of three years.

10. The six subjects formulate a few compound sentences but no complex sentences.

11. Family attitude toward education and reading is an important influence on language development.

12. The parents' language habits are related to the child's language development.

13. The child's age in relation to his brothers and sisters appears to have some influence on language development.

14. The opportunity to hear adults speaking frequently as a results of being the only child of the family is directly related to vocabulary development.

Approved:

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Supervising Professor

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## CHAPTER I

### INTRODUCTION

Recently a number of leading educators in the United States have urged that public school education be made available for four-year-old children. Such a suggestion is an indication of the growing interest in the learning capacity of children between the ages of three and six. One has only to observe a bright three-year-old to see the great learning enthusiasm which remains untouched by professional teachers. When the public schools are opened to the four-year-old, the need for a body of informative material concerning the learning ability and language development of young children will become more evident. Because of this need and because of the fascination that comes from dealing with young children, this thesis was written. The experience of daily listening to a three-year-old child experiment with the language made it evident that this area of language study would be both interesting and beneficial.

#### Statement of the Problem

The factors influencing language development in children are constantly changing as the cultural and social environment of the child changes. It is, therefore, advisable not only to analyze these factors but also to ascertain which factors in the child's environment are directly related to his language development. Since observations and comments

concerning the language development of three-year-olds would, because of the limited scope of the thesis, be confined to a small number of subjects, a group of six apparently normal, healthy children was chosen.

The first problem that presented itself was in determining just how each child had advanced in language development. Although it appeared that a homogeneous group had been selected and that the environment factors were essentially the same, the six individuals represented six separate and distinct problems of research. All subjects had not advanced as rapidly as might be expected. Establishment of reasons for variations in language development within the group must be deemed the most important aspect of the thesis.

### Methods of Investigation

The following methods of investigation were used in determining language development of each child: (1) a series of tests, including an intelligence test, vocabulary tests, a motor-co-ordination test, and a social maturity test, was given each child; (2) two comprehensive interviews were held with the parents of each child; (3) as many personal and informal conversations were held with each child as possible; (4) a two-hour tape of the child talking in various situations was made; and (5) a



number of selected secondary sources were read to aid in the evaluation of the completed research.

### Limitations of the Study

This study was limited to the selected group of six three-year-old children. Although the factors which influenced the language development of the children involved in this study suggest general areas of influence for all three-year-old children with similar backgrounds, no attempt was made to apply what was observed in this particular study to all three-year-old children. It is hoped that this study will provide the foundation for a much broader study involving perhaps hundreds of subjects.

### Definition of Terms

A number of specialized terms were used in this study. All ages have been listed in years and months in the following manner: 3-6, representing three years and six months. The Stanford-Binet Scale ages, such as III-6, have been converted into Arabic numerals. The Vineland Social Maturity Scale ages listed in tenths, as in 4.9 years, have been converted to the year and month closest to the corresponding Vineland age.

The following abbreviations have been used in listing the test results of the subjects:

C.A. (chronological age)  
M.A. (mental age)  
S.A. (social age)  
M.C.A. (motor co-ordination age)  
I.Q. (intelligence quotient)

## CHAPTER II

### EVALUATING TECHNIQUES

In order to gain a complete knowledge of each child involved in the research activities, a variety of techniques was used in evaluating the subjects. The use of standardized tests seemed to be the most effective way of analyzing each child. Selected for use, with the help of a psychological examiner who is experienced in testing young children<sup>1</sup> were the following tests: (1) Stanford-Binet Intelligence Test; (2) Peabody Vocabulary Test (Forms B and A); (3) Motor Co-ordination Schedule of the Gesell Intelligence Test; and (4) Vineland Social Maturity Scale. These standardized tests made it possible to compare the children with each other as well as evaluate them in relation to other children of the same age group.

#### Stanford-Binet Intelligence Test

The second revision of the original Binet-Simon Intelligence Scale used in this study is considered by many to be the standard clinical method of measuring intelligence. The second revision, considered necessary because the original Stanford-Binet Revision was inadequate in

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<sup>1</sup>Assistant Professor of Special Education Frances Elmer who has sixteen years of experience in testing young children, most of it at Arkansas Children's Colony, served as the psychological examiner.

testing either below the mental age of four years or above the average adult, is useful in testing children with the chronological age of approximately three years and six months. The test used for this study contains 129 individual test items as compared with the 90 of the first revision and the 54 of the original. Below the five year level, test items are now located at half-year intervals. It is relevant to this study to notice that heavy stress has been placed on non-verbal test items. As Lewis M. Terman and Maud A. Merrill state, "Language, essentially, is the shorthand of the higher thought processes, and the level at which this shorthand functions is one of the most important determinants of the level of the processes themselves."<sup>2</sup> It is probable, then, that the language development accelerates rapidly at the mental age of four. For children below this mental age, however, a valid intelligence score must be based heavily on non-verbal activities. Since the purpose of using the Stanford-Binet Test is to determine the general intelligence of each subject in relation to other children of the same age group, the test proved to be satisfactory.

The variety of activities on the Stanford-Binet

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<sup>2</sup>Lewis M. Terman and Maud A. Merrill, Measuring Intelligence, p. 5.

Test provided an interesting way of testing the children. Although the time consumed in giving the test ranged between 55 and 75 minutes, for the most part the children remained alert during the test period. Such test items as the three-hole board consisting of bright red blocks help to stimulate the interest of the children. Pictures of objects and various objects themselves such as toy cars, a ball, and a thimble were used during the course of the test.

Two types of vocabulary tests are used on the Stanford-Binet Test. To the children the picture vocabulary was one of the most interesting items on the test. The purpose of the picture vocabulary is to determine whether the child can apply the appropriate names to familiar objects. Pictures of such objects as scissors, a clock, an umbrella and various animals are used to test the 2-6, 3-0, 3-6 and 4-0 age levels. Since four of the subjects reached the 6-0 age level, another type of vocabulary test was employed. On this test an oral recitation of the word in the form of a question is to be followed by an oral response from the child. Such words as orange, envelope, straw and roar are included in this section of the Stanford-Binet Test.

In dealing with three-year-old children, any disturbance can affect the test results. Since the Stanford-

Binet Test does require a long period of time to administer, all six subjects were exhausted by the end of the testing period; the scores might have been somewhat higher had the test been given in two parts with a short rest period provided. One child, for example, was suffering from a cold and also became so interested in one of the toys used by the examiner that she missed a number of questions she would have probably answered otherwise. Since a fifteen point margin of error is considered normal in listing the scores, the test results provided the information needed for this study.

#### Peabody Picture Vocabulary Test

"The Peabody Picture Vocabulary Test is designed to provide an estimate of a subject's verbal intelligence through measuring his hearing vocabulary."<sup>3</sup> As a clinical tool this test is especially suited for non-readers, in this case three-year-old children. Among its advantages are the high interest created in the subject, the fact that no extensive preparation is needed to administer the test, the short testing period involved (about fifteen minutes), the objective and quick scoring, the acceptability of non-oral responses, and the alternate forms available to give

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<sup>3</sup>Lloyd M. Dunn, Peabody Picture Vocabulary Test, p. 5.

added opportunity for testing. The Peabody Test provided an opportunity for the investigator to become involved in the actual testing procedure used in the administration of this test.

The Peabody Test consists of the following elements: (1) a spiral-bound book containing 150 numbered plates preceded by three example plates; (2) a manual containing information about scoring, administering the test and so forth; and (3) separate Individual Test Records for Forms A and B. Each Individual Tests Record lists stimulus words and keys to correct responses.

The careful construction of the Peabody Test makes it suitable for this study. An initial pool of 3,885 words was selected from Webster's New Collegiate Dictionary. Of these, 2,055 were illustrated and tried out on 360 subjects ranging in ages from two through eighteen years. The items were placed in the age level where forty to sixty per cent of the appropriate age group passed them. The next step included the preparation of 200 pre-test plates, each illustrating four words. Eight plates were designed for each of the twenty-three age levels from two years, six months to eighteen years. Next the best 600 words were given to 750 subjects, and the results were calculated. From this data the best 300 words were selected. A final test battery of 150

plates was developed to provide the two Forms A and B. Both Forms were given to the subjects involved in this study. The plates were arranged in empirically-determined order of difficulty with a heavy concentration at pre-school levels, another factor making it a suitable test. The decoys were designed to be dissimilar in early plates. Plate Number One, for example, contains a human form, a means of locomotion, a piece of furniture, and a toilet utensil. In later plates the decoys are similar, as Plate Number Sixty-six contains four human forms using a hairbrush, a musical instrument, a hammer, and a bow respectively.

Several criteria were used in the final selection of words for the plates. They were as follows: (1) all four were found at the leveling and pre-test states to be of the same difficulty; (2) all four demonstrated good linear growth curves in terms of per cent passing at successive age levels; (3) words were used where no sex differences existed; (4) singular and collective nouns, some gerunds, a few adjectives and adverbs were used; (5) words considered biased either culturally, regionally, or racially were omitted; and finally (6) dated words, plurals, double words, and scientific terms were omitted.

The Peabody Test was standardized on 4,012 cases



in the following manner:

Age Level	Cases
2-6	92
3-0	92
3-6	119
4-0	110
4-6	122
5-0	133

The number of cases increased with the age level throughout the remainder of the standardization program. All subjects were given both Forms A and B during the period of April-June of 1958 by four examiners. Only white children in and around Nashville, Tennessee, were used in this process. In selecting the pre-schoolers, those involved in the standardization attempted to select children who would give a composite normal probability curve of intelligence quotients. The Huhlmann-Finch Intelligence Test available from the Nashville schools was used in determining the number of students selected from the four geographical areas of the city.

A great deal of time and thought went into the illustrations used in the test. Equal size, equal intensity, equal appeal and appropriateness to age level were all considered in the selection of pictures. Even with such care taken in this selection, a few plates such as Number Thirty shows one picture which definitely has more appeal to the subjects than the others. On this plate one picture shows two cars

bumping together while the other pictures show such uninteresting things as a watch, a glass of water and a pile of wood. The word called for on Form A is accident. Most of the children used in this study pointed to the cars even before the word was asked. The illustrations are black and white sketches which actually have little appeal for the pre-schooler. It must be said, however, that if colored pictures had been used, the colors themselves may have determined the selection of certain pictures over others.

Only two plates used in the testing of the six children involved seemed to be unsatisfactory. Plate Thirty which calls for the word time on Form B contains a pocket watch for the correct response. Although the face of the watch is similar to many present day clocks, it is doubtful that any of the six subjects tested has ever seen a pocket watch. Plate Forty-four asks for the word cash. This word is seldom heard and has taken on colloquial usage which makes it unsuitable for the test.

Two derived scores proved to be useful. The mental age and the intelligence quotient were used in comparing the six children under study. In all cases the standard deviation of fifteen points was considered. The standard scores were easily handled and provided a

broadier understanding of each child's vocabulary development in relation to other children of the same age. According to Dr. Dunn, the following table can be used in analyzing those who take the test:

INTELLIGENCE QUOTIENTS	PERCENTAGES	CLASSIFICATION
125 and above	5	very rapid learners
110-124	20	rapid learners
90-109	50	average learners
75-89	20	slow learners
below 75	5	very slow learners

All the children used in this study fell into either the average or rapid learner groups. The Peabody Test reveals the near-homogeneous grouping obtained for this study.

#### Gesell Motor Co-ordination Test

Dr. Arnold Gesell's work, spanning some forty years, began at the Yale Clinic in 1911; it is being continued today by others at the Gesell Institute. This work has provided the basis for evaluating the motor co-ordination of the six children involved in this study of language development. The Gesell Development Schedule provides a method for subjectively comparing each child's motor ability with that of the other children of the study. The Stanford-Binet Test, which contains some motor co-ordination items, was not considered broad enough to

give a clear picture of the child's ability in this area. From the Gesell Developmental Schedule a series of activities used to measure motor ability were used in testing the children. The following list of eighteen items was used and the results tabulated:

3-0

1. alternates feet going up the stairs
2. jumps from the bottom stair
3. rides a tricycle using the pedals
4. stands on one foot for a moment balanced
5. puts ten pellets into a bottle in thirty seconds

3-6

1. stands on one foot for two seconds
2. walks across a board using both feet
3. traces a diamond

4-0

1. walks down stairs, foot to step
2. skips on one foot
3. broad jumps either running or standing
4. throws a ball overhand
5. stands on one foot from four to eight seconds
6. walks across a board elevated six centimeters
7. puts ten pellets into bottle in twenty-five seconds

4-6

1. hops on one foot
2. articulation not infantile<sup>4</sup>
3. traces a cross<sup>4</sup>

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<sup>4</sup>Arnold Gesell, et al., Gesell Developmental Schedule.

Although a standardized score could not be ascertained by giving the children the motor co-ordination portion of the Gesell Test, a motor co-ordination age was derived in order to give consistency to the test scores. The activities listed by Gesell which are grouped in age levels through age 4-6 were given the value of three months for each of the eighteen items. By using this method, the investigator derived M.C.A. scores. For example, if child successfully performed fifteen of the eighteen items, his M.C.A. would be 3-9. The degree of difficulty each child had in performing the test items and the derived M.C.A. provided the basis for analyzing each subject's motor co-ordination.

#### Vineland Social Maturity Scale

Another test used in evaluating each child is designed to measure the capacity of the child to look after himself and to participate in activities which lead toward ultimate independence as an adult. It was hoped that a score representing the child's social age would reveal a relationship between social age and language development. The Vineland Test is so designed that the parents must be used in the evaluation of the child. The involvement of the parents during the entire research period was especially important to

ascertaining the language development of each child. The test also provides an economical overview of the child's social competence.

The Vineland Social Maturity Scale was developed at the Training School at Vineland, New Jersey over a period of twenty years, being first proposed in 1935.<sup>5</sup> It has been standardized through numerous case studies. The items of the test are arranged in order of increasing average difficulty. Maturation in self-help, self-direction, locomotion, occupation, communication, and social relations is the essential factor measured by the test. Since language is an integral part of the maturation process, one would expect that a score of a social age would lead to a better understanding of the child's language development. Each item in the test represents a general growth in social responsibility which is expressed in some detailed performance. The Scale helps one to evaluate the influence of environment and cultural status of the subject, certainly important to this study. Data for ten normal subjects of each sex at each year from birth to thirty years of age was obtained. This represents a total of

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<sup>5</sup>Edgar A. Doll, Vineland Social Maturity Scale (Condensed Manual of Directions) p. 1.

620 subjects, not considered enough for final standardization by those involved in constructing the Scale.

The Vineland Scale is, however, the most important work of its kind and served a useful purpose in the evaluation of the six children of this study.

Activities are listed on age levels beginning with the one year level and ending with the twenty-five plus level. The test is given through parental interviews. The responses of the parents must be carefully evaluated, for there is the natural tendency for the parents to be prejudiced in discussing their own children. The questioning begins by asking the parents whether the child habitually did the items listed under the appropriate age level. The activities that pertained to the six subjects of this study are listed as follows:

1. asks to go to the toilet
2. cuts with scissors
3. relates experiences
4. buttons coat or dress
5. "performs" for others
6. washes hands unaided
7. cares for self at toilet
8. dresses self except for tying
9. plays competitive exercise games
10. uses skates, sled, wagon<sup>6</sup>

In all cases it was necessary to establish whether the child had been given the opportunity to perform the tasks

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<sup>6</sup>Ibid., pp. 4-5.

listed. Most parents admitted that they do not allow the child to care for himself at the toilet or to dress himself completely.

### Interviews with Parents

One of the most valuable evaluating techniques used during the course of the research was the interview with the child's parents. For the most part the parents had not been concerned with the child's language development and could give only limited information in this area. The real value obtained from these interviews was in the information concerning the social and cultural environment of the child. Two interviews were held. The first one at the beginning of the research was designed to obtain information concerning the family. The following outline provided the guidelines necessary in carrying out such an interview:

- I. Home (play area, living conditions, etc.)
- II. Father (questions about his work, his education, his reading habits)
- III. Mother (questions similar to those asked the father)
- IV. Siblings (relationship with the subject)
- V. Subject (personality, interest, peculiarities in language usage)

The second and final interview dealt more closely



with the child's language usage. After several months of listening more closely to their children, the parents were better able to provide information of this nature. Both the interest created and the information obtained from these interviews were invaluable. The parents' co-operation and understanding were essential in solving this thesis problem.

#### Tape Recordings of Subjects

The most valuable and the most difficult research done involved recording the voices of the six children. All the originality and ingenuity both parents and investigator could muster had to be employed in this area of research. A number of problems were encountered that presented a challenge. First, the parents had to be taught how to use the recorder. It was impossible for the investigator to do the recording for two reasons: the children would not talk freely with him; and he could not be present when the child felt like talking freely. Even the parents had some difficulty completing the tapes. A second major problem involved the methods used to make the children talk in such a way that the desired data would be obtained. Both controlled and uncontrolled speaking situations were used. Among them were: (1) having the child look at alphabet cards and describe

the pictures on each card; (2) having the child read with one parent several nursery rhymes; (3) having the child talk freely about any subject of interest; (4) having the child repeat certain words from a list devised to test articulation of various sounds (See Appendix A); and finally (5) having the child talk to another child over the telephone. A third major problem involved the brothers and sisters of the subjects. It was extremely difficult for the parents to separate the children long enough to make the tapes.

Approximately two hours of listening time was recorded for each child, depending on the amount of difficulty encountered in getting the child to talk. Each tape was transcribed into International Phonetic Alphabet symbols by the investigator, requiring from four to six hours of listening and note-taking for each one. The notes provided the most pertinent information for the final analysis of the child's language development. After listening to and transcribing each tape, the investigator then organized and classified the various language characteristics observed. The controlled speaking situations made it possible to observe each child's speech in relation to that of the other children. The taping also provided information concerning the speech of at least one of the parents, for they too

were so actively involved in making the recordings.

The information obtained from the six evaluating techniques used was collected in separate manilla folders for each child. A great deal of effort was used in the proper organization and evaluation of each piece of research material obtained. The combination of standardized tests and subjective research provided a complete profile for each of the six subjects of the language study.

### CHAPTER III

#### LANGUAGE PROFILES OF THE SIX SUBJECTS

The purpose of this chapter is to describe the general environment and language characteristics of the six subjects used for this study and to report the results of several tests administered individually. Although an attempt was made to select a homogeneous group of three year old children, each child represented problems in research not encountered in dealing with the other children. The child's individual environment and language characteristics helped in the final analysis of the language development for the six-member group of children.

##### Kim A.

Kim A., a shy little girl, age 3-4 when the study began and 3-8 at the close of the study, proved to be the most difficult in terms of research procedure. Although a friendly relationship between the investigator and the child was developed, Kim A. remained extremely shy and taciturn throughout the entire data gathering process.

Parents. Kim's parents represent a typical middle class American family. Mr. A. is a college graduate who now works for the Forestry Service. He received his

Bachelor of Science Degree in Forestry at Oklahoma State University and since that time has worked as a forester in various parts of the country. Since Mr. A. must work with all types of men, he feels that he must speak on different levels, depending on the persons spoken to. In addition to usual conversations with fellow workers Mr. A. conducts safety meetings and teaches a class in forestry about two or three times a year. Other than this, his job does not demand any unusual use of the language.

Although Mr. A. expressed concern about effective use of the language, he admitted that he does not enjoy reading, with the exception of religious materials and selected parts of the newspaper. Only occasionally does he read the editorials. His own library consists of about fifty adult volumes, all unused except for the religious books. He also has available some current periodicals concerning forestry.

Kim's mother, Mrs. A., is an attractive housewife seemingly devoted to her husband and family. She has a high school education and worked briefly as a clerk in a loan office before her marriage.

Like Mr. A., Kim's mother primarily reads religious materials. Unlike Mr. A., she does enjoy reading but feels that she has little time because of

the four children she must care for. Mrs. A. has had no public speaking experience and admitted that she had difficulty speaking either before a group or to strangers. Mrs. A.'s shyness is also shared by Kim.

Mr. and Mrs. A. have several noticeable speech peculiarities. Through slow and thoughtful answers, Mr. A. admitted that he has some speech difficulties. He cited his inability to pronounce the words particularly and peculiarly as one of the most troublesome. Mrs. A. frequently confuses the words picture and pitcher. Like most people Kim's parents have their own peculiar expressions. Mr. A. frequently uses "good grief" and "I mean" during a conversation, while Mrs. A. punctuates her speech with "gosh" and "golly." Being the religiously dedicated people they are, it is doubtful that any stronger expressions are ever used, especially around Kim.

Home environment. Kim's home is a pleasant frame house located on the edge of Huntsville. Kim has plenty of room to play outdoors in a large yard; she shares an indoor playroom with her two older sisters and her younger brother. The children play together much of the time, and one of Kim's sisters, who is in kindergarten, occasionally tells her stories. Kim remains the quietest of the four children during their play

activities.

The children have a number of books which are considered family property rather than as belonging to individuals. Only one book of the approximately fifty books in the childrens' collection can be said to belong exclusively to Kim. According to both parents, no special effort has been made to instill in the children any love for books other than as normal playthings.

Family activities. One important aspect of Kim's home and family environment is the lack of variety in family experiences. At home television is the important source of family entertainment, although Kim has shown less interest in this activity than the other children. Outside the home, Mr. and Mrs. A. occasionally take the children to the local ball games or to visit friends. Kim has been to the movies only twice during her lifetime. Once or twice a year the family takes short vacation trips usually to Oklahoma to visit relatives. The most important social activity, however, is going to church. Other than these, there seems to be no variety in family experiences.

#### Language Characteristics

Kim is a lovable child with a quiet, timid personality. Sharing the timidity of her mother and the

deep thought and concentration exemplified by her father, Kim provided a challenge in research. Variety and ingenuity had to be used in obtaining the necessary data for analyzing Kim's language characteristics.

As observed by investigator and parents. Kim's unwillingness to talk freely to either parents or investigator was her major speech characteristic. Affirmative or negative grunts and one-word answers provided replies in most situations. It was noticed, however, in one taped conversation with her mother that Kim has the ability to express herself in complete and coherent sentences made on her own initiative. Kim pronounced each syllable as a separate and distinct part of the word. Occasionally this made her speech sound infantile. Although she made frequent mistakes in pronunciation and articulation, she attempted with great care and concern to say each word correctly. Kim's version of the nursery rhyme indicates she has difficulty articulating the consonants r and th.

Roll them up, roll them up  
[wɒl] [əm] [ʌp] [wɒl] [əm] [ʌp]

Throw them in the pan.  
[fɔ] [əm] [ɪn] [də] [pæn]

Although Kim was considered "the baby" by the entire family during the first three years of her life and for this reason given much attention, it appeared



to the investigator that Kim has not been allowed to express much individuality. She remains the quiet one of any group of children, as was observed by both the parents and the investigator. According to her parents, her extreme shyness has developed during the past year and, as observed, has developed to the point that she appears to be almost totally mute around strangers.

As measured by individual tests. In addition to the personal observation made of Kim's language characteristics, a series of tests was given to objectively measure her language development. The scores obtained from these tests were used in the final interpretation of Kim's language characteristics. The following table (Table I) shows the scores achieved on each test. In all cases the chronological age must be viewed in relation to the test scores listed. Although the Peabody scores were below the Stanford-Binet scores in all six subjects, there was wide discrepancy between Kim's Stanford-Binet score and both of the Peabody scores.

TABLE I  
TEST SCORES FOR KIM A.

Stanford-Binet Intelligence Scale

C.A. 3-5  
M.A. 4-2  
I.Q. 118

Peabody Form B

C.A. 3-5  
M.A. 2-1  
I.Q. 87

Peabody Form A

C.A. 3-8  
M.A. 3-4  
I.Q. 97

Vineland Social Maturity Scale

C.A. 3-5  
S.A. 4-6

Gesell Motor Co-ordination Developmental Schedule

C.A. 3-8  
\*M.C.A. 4-0

\*Kim performed sixteen of the eighteen items listed on the Gesell Schedule with some difficulty. It appears that her M.C.A. is compatible with her C.A.

Mike B.

Mike B., age 3-5 when the study began and 3-9 at the close of the study, provided an excellent opportunity to study the language development of an above average three-year-old boy. Mike developed an interest in the evaluation not shown by the other children.

Parents. Mike's parents are young, friendly and extremely co-operative. Both parents are at the present time college freshman. They appear to have the will and determination to complete their own education without neglecting the education of their children.

Mr. B. served four years in the United States Air Force before moving to Huntsville in September of 1965 to begin his college career. While in the Air Force Mr. B. served as a laboratory technician and is presently working in that same capacity at Huntsville Memorial Hospital. As a college student, he is pursuing a course of study in the sciences.

Mr. B.'s interest in language is somewhat limited. Before attending college, he found little time for reading. During an interview, he stated that although he does not dislike reading, he is not especially interested in it, and his work prevents any reading other than school assignments. Mr. B. has had no writing or public speaking experience. Although Mr. B. does not feel that he has any trouble with language

usage other than some problems in pronunciation and an overabundance of slang expressions, the following non-standard expressions were observed by the investigator: "He got them off the top of his head, I reckon"; "I never seen all those stories"; "He done got it." He also used the following non-standard pronunciations: things [ðeɪz] just [dʒɪst], getting [gɪtɪn], pictures [pɪtʃəz]. Some of these characteristics were also observed in Mike's speech.

During the first three years of Mike's life, Mrs. B. devoted most of her time to her son. Living near an air base without many friends gave her extra time to spend with Mike. At the present time, however, Mrs. B. spends her time serving as housewife, church member, mother and college student.

Mrs. B.'s language characteristics are similar to those of her husband. She classifies her own reading habits as poor, reading only school assignments. Although she enjoys reading, Mrs. B. feels that she does not have the time to read as much as she should. While in high school she did participate in school plays and writing contests. She admits that she has attempted to interest Mike in both reading and writing. While Mr. B. was in the Air Force, Mrs. B. spent many hours teaching Mike to read and write.

Home environment. Mike's home is a modest frame house located in a nice neighborhood on the southside of

Pages were not numbered correctly.

The text skips from page 30

to page 32.

Huntsville. Mike has a large play area and several neighborhood children to entertain him. Mike shares his home with one brother, age ten months, and one sister, age two years. According to Mr. B. the three children play co-operatively together. Although Mike is the oldest of the three children, he does not necessarily take the lead in all play activities. Most of the outdoor games are initiated by the older neighborhood children. When playing indoors, Mike has the ability to interest himself by reading his books. He shares with his brother and sister a collection of children's books numbering between forty and fifty volumes.

Family activities. Mr. and Mrs. B. have not provided Mike with a wide variety of family activities. They feel that first the Air Force and now college have limited their social and family entertainment. While her husband was in the Air Force, Mrs. B. attempted to compensate for the lack of friends and activities by taking an active role in teaching Mike how to read and write. In addition to much reading, watching television also provided family entertainment. Since entering college, however, the family has not had a television set. A few weekend trips to visit relatives are still taken, but other than these, the family remains at home.

It seems that time-consuming college work has replaced many family activities.

### Language Characteristics

Mike's complete co-operation with both the investigator and parents provided a wealth of data concerning his language characteristics. Boring him with the easy questions proved to be the only problem encountered while investigating Mike. Unlike the other five subjects, Mike showed no desire to have his parents near while he answered questions and took the examinations.

As observed by the investigator and parents. Mike is a very talkative child. His mother mentioned that he frequently talks to himself. While talking to himself and to others, Mike seems to be experimenting with the language. He is very much aware of his pronunciation and shows a desire to say the words correctly. As a part of his language experiments, Mike frequently sings nursery rhymes or puts tunes to his own original stories. Since this study began, Mike has become even more conscious of his speech. According to Mrs. B., he talks more like an older child than he did in the beginning of the research.

Perhaps the most interesting aspect of Mike's language characteristics is his ability to read and

write. Mike first showed an interest in learning to read at about the age of eighteen months. By the time he was two years old he could read from his own books. Mrs. B. must take the credit for Mike's early reading proficiency. Because she did not have many outside activities, Mrs. B. spent much time teaching Mike nursery rhymes. As she read the verses to him, she pointed to the words and Mike, being of superior intelligence, quickly learned that the sounds and the printed words were related. He became fascinated with reading and could soon read the rhymes himself. Mrs. B. taught Mike the sounds of the various letters beginning with the consonants, then with the long vowel sounds, and finally the short vowel sounds. She used a blackboard to print the words and rhymes which interested Mike. One useful teaching device was the television set. Having a great interest in television commercials, Mike with the aid of his mother soon associated the words on the television screen with the words on the containers of the containers of the actual products. One of the first words he learned from the television set was the word Tide. He recognized the same word on his mother's box of soap. After learning the sounds for the letters, Mike began to read other books. Although he does not always understand what the



words mean, he can read aloud practically any material placed before him.

Because of his great interest in words and his reading ability, Mike is rapidly expanding his vocabulary. He has no trouble expressing himself freely as he appears to have at his command a vocabulary remarkable for a child his age. When asked to talk by either his parents or the investigator, Mike would rattle off a string of sentences revealing his language proficiency. Such words as biology, algebra, history, and study he has acquired from his student-parents. Although it is obvious that he does not fully understand these words, he is aware of their importance and significance to his parents' school work. From his father's work as a laboratory technician, Mike has acquired the words cultures, microscope and the expression "being on call." He enjoys using these words as he enjoys experimenting with his speech. Although Mike has learned numerous words from watching television, one word that caught even his father by surprise in a taped conversation was underdog, the name of a television cartoon character.

As measured by individual tests. Mike's cooperation during the testing made it possible to obtain highly accurate scores. Unlike the other children of this study, Mike was eager to answer questions without

being prompted, threatened or bribed by the examiner. After spending approximately seventy-five minutes testing Mike, the examiner found that Mike wanted to continue. In way of preparation, Mike's mother had simply explained to him that he was to be given a series of tests. He seemed to understand what was to happen and that he was to co-operate fully with the examiner. The results of all tests, those given by the examiner and those given by the investigator, are listed in Table II.

TABLE II  
TEST SCORES FOR MIKE B.

Stanford-Binet Intelligence Scale

C.A. 3-5  
M.A. 4-6  
I.Q. 127

Peabody Form B

C.A. 3-5  
M.A. 5-0  
I.Q. 122

Peabody Form A

C.A. 3-8  
M.A. 4-10  
I.Q. 119

Vineland Social Maturity Scale

C.A. 3-5  
S.A. 5-1

Gesell Motor Co-ordination Developmental Schedule

C.A. 3-8  
\*M.C.A. 4-0

\*Mike performed sixteen of the eighteen items listed on the Gesell Schedule with some difficulty. It appears that his M.C.A. is compatible with his C.A.

Scotty D.

Scotty D., age 3-2 at the beginning of the study and 3-6 at the close, is indeed a lively little three-year-old boy. During the data gathering process, Scotty was willing to attempt any of the activities required, but on occasion he would either lose interest in what was being done or be distracted by something else. Both the examiner and the parents found it necessary to use firmness in their voices to keep Scotty interested in the activity. Scotty usually responded to this firmness and created no serious problems in research.

Parents. Mr. and Mrs. D. have a special relationship with their son; he is adopted. The parents, who have had Scotty since early infancy, are very interested in providing a comfortable home for their son. Although they do not seem to stress education as much as the other parents interviewed for this study, they are attempting to teach Scotty to be a polite young man.

Mr. D., who graduated from Salado High School, is now working as a PBX repairman for the telephone company. Other than attending telephone school and short-duration radio schools, Mr. D. has received no formal higher education. His present job does, however, make him extremely conscious of language usage because it requires that he deal directly with the public and that he talk

over the telephone much of the time. He considers good telephone speech essential in his occupation.

According to Mr. D. the lack of time restricts his reading. He does enjoy reading church materials and finds such reading an important part of his position as a Sunday school teacher. In addition to reading church materials, Mr. D. finds time to read the newspaper. He usually reads the front page and the sports section. Rarely does he bother to read the editorials. Magazine articles complete out Mr. D.'s reading diet. It appears that Mr. D.'s reading is as limited as his personal library. The family library consists of a few adult volumes, mostly religious books, a number of magazines pertaining to Mr. D.'s occupation, and a set of Collier's Encyclopedias. His daughter has some hardback books and frequently brings home books from the church or school library. Mr. D. considers his religious books the most important ones in his home.

Mrs. D. is a housewife and mother. Her only outside interest is her teaching assignment in Sunday school. She is in charge of the three year old children. All six subjects used in this study are under her guidance while in Sunday school. Like her husband, Mrs. D. has received no higher education. She graduated from Belton High School where she did not take part in any

of the extra-curricular activities such as school plays and speaking or writing contests.

Mrs. D. admits that she does not like reading, which she considers dull; she prefers more active pastimes. Mrs. D. does read the Bible and her Sunday school assignments, and she occasionally reads to the children.

Home environment. Scotty's home is a clean white frame house located on the southside of Huntsville. A large play area with swings and a slide are provided. Several neighborhood children frequently come to play with Scotty. Scotty's older sister would rather play with other children, but she does occasionally read to him. His sister has a great love for books and sometimes brings home as many as eight or nine books to read. Scotty, however, has only two books of his own. Scotty shares a room with his sister. It was noticed during the investigation of Scotty that his sister seemed somewhat displeased that she too was not included in the study. She made the comment that she wished someone would tape her voice.

Family activities. Much like the family of Kim A., Scotty's family does not enjoy a wide variety of activities. At home, watching television and simply being together provide the family entertainment. Mr.

D. enjoys playing with Scotty and on most days when he gets home from work around five o'clock in the afternoon, he spends some time entertaining his son. Mrs. D. occasionally reads to the children, but most of the time they are simply allowed to play by themselves. Outside the home, church-going is the main family activity. Other than a few weekend trips to visit relatives and going to local sporting events, the family activities remain centered either in the home or in the church.

#### Language Characteristics

Scotty's short attention span provided the major obstacle to obtaining data about his language characteristics. Once he became bored or tired, he would begin acting silly or getting into mischief. Both parents and the examiner found that short testing sessions were the most rewarding.

As observed by the investigator and parents. From the moment the investigator walked into the house until the moment he left, Scotty talked willingly. Although much of what he said was incoherent, the fact that he was willing to talk made the research an easy process.

Scotty himself is aware that he has some difficulties in speaking. He frequently attempted to correct

his own mistakes or would indicate that what he had just said was incorrect. The most obvious problem that Scotty has is in distorting much of what he says. His inability to articulate clearly is compounded by the fact that he seems to enjoy talking in a silly, purposely distorted voice. During much of the taping, Scotty refused to talk in his normal voice. Only when he was well rested and alert did he talk with clearness and coherence. His greatest difficulty was in repeating a sentence or a phrase. Only the bilabial sounds emerged as distinct while many of the words were slurred together or breathed-over. Often he would appear to be exerting great effort to produce the sounds correctly but simply did not have the ability to do so. As the following test indicates, Scotty had difficulty repeating what was said to him. In this case his mother repeated a line and waited for Scotty to reply.

Here sits the Lord Mayor  
[əm] (distorted) [sɑr] [mæn]

Here sit his two men  
(hesitation, no reply)

Here sits the cock  
[sɪtɪn] [dəkək]

Here sits the hen  
[ən] [hɪrʒəhɪn]

To most of the questions asked, Scotty gave phrasal or one-word answers. Only when he was allowed to talk



freely about any subject that he chose did he formulate many complete sentences. In one conversation in which his mother asked him a variety of questions, he succeeded after much effort in formulating a few complete sentences. He struggled through all conversations with answers similar to the following:

Scotty: No, I wouldn't.

Yeah.

Get some shots.

Take it in the mouth.

He just (distorted)

Choo-choo train.

I don't know.

I fly. I don't fly anymore.

Just, I suppose to be Batman  
and she Robin and you're Joker.

I go school.

Such answers make it obvious that Scotty has difficulty formulating complete sentences.

As measured by individual tests. In analyzing Table III which lists Scotty's test results, one should be aware that the boy's short attention span greatly affected the test results. Even the Peabody Vocabulary Test, which takes about fifteen minutes to give, was tiring to Scotty. Throughout the testing period, the

examiner found it necessary to use various methods to hold Scotty's interest. Only the Gesell Motor Co-ordination Test, which of course required physical activity, held Scotty's interest.

TABLE III  
TEST SCORES FOR SCOTTY D.

Stanford-Binet Intelligence Scale

C.A. 3-3  
M.A. 3-6  
I.Q. 104

Peabody Form B

C.A. 3-3  
M.A. 3-2  
I.Q. 95

Peabody Form A

C.A. 3-5  
M.A. 3-9  
I.Q. 109

Vineland Social Maturity Scale

C.A. 3-2  
S.A. 4-4

Gesell Motor Co-ordination Developmental Schedule

C.A. 3-5  
\*M.C.A. 4-0

\*Scotty performed sixteen of the eighteen items listed on the Gesell Schedule without much difficulty.

Sissy M.

Sissy M., age 3-8 when the study began and 4-0 at the close of the study, proved to be a difficult child to observe and test. Sissy's unwillingness to participate and her evident fear of failure made it necessary for the investigator, examiner, and parents to use much tact and understanding in dealing with her.

Parents. Sissy's parents, especially her mother, were sincerely interested in the study. Mrs. M. often aided the investigator in obtaining the desired information.

Mr. M. is presently manager of a popular restaurant in Huntsville and finds that his work keeps him away from his family much of the time. Although he is in daily contact with the public, Mr. M. feels that his job requires no unusual amount of writing or speaking. Most of the written work is done by extra help.

Although Mr. M. holds a Bachelor of Science Degree from Texas Technological College, he admittedly reads little other than the newspaper. Even in this activity he reads only the front page, the sports page and the comics. He asserts that he does not dislike reading but that he simply does not have time to read.

Unlike her quiet, soft-spoken husband, Mrs. M.

is a vivacious young woman who is usually bubbling over with enthusiasm. She has attended college for two years at Mary Hardin Baylor. Although she feels that she will never return to college, she did develop a love for learning that carries over into her daily life. Mrs. M. is active in community work which includes both welfare and church activities. Part time work at the restaurant also helps to keep her busy.

In the conversation with Mrs. M. it was noted that she appeared to have a sincere love for reading. Her outside activities do not prevent her reading approximately one book per month in addition to numerous magazine articles. She has, because of her reading, developed a desire to increase her vocabulary. At the time of the interview she had just finished a book on word power. Her conversation was, in fact somewhat cluttered with long and unusual words that she had learned from reading this book. Whether she used these new words correctly and effectively or not, Mrs. M. did show a love for the language not revealed by most of the parents.

Home environment. Mr. and Mrs. M. live in an attractive and newly remodeled home two blocks west of the college campus. Sissy has a large play area both outside and inside the house. She shares a bedroom with her older sister. The two girls and their younger

brother play together most of the day. Occasionally Sissy's older sister will pretend to read to her, and all three enjoy singing. They frequently watch Spanish lessons on television.

The family library consists of approximately 200 adult volumes and approximately thirty children's books. Mrs. M. occasionally buys a new book to add to the collection, but for the most part the adult books go unused.

Family activities. Mr. and Mrs. M. participate in several social activities with their children. One of the most enjoyable to the children is the occasional weekend trip to a farm where the children ride horses. During the summer, the children swim almost every day in a private pool. The family takes advantage of available local amusements. A number of friends frequently visit the home. When Mr. and Mrs. M. visit friends, they feel it both necessary and polite to leave their three children at home. More often than not, Sissy is left with a babysitter.

When the M.'s are at home, the most important family activity is watching television. The children are left to entertain themselves most of the time while Mrs. M. does the routine housework. Mrs. M. finds some time for reading and playing with the children. She enjoys watching the Spanish lesson on television with

her children. Mr. M. seems completely left out of the family activities at home. He finds it necessary to be away from home working so much of the time that he is usually absent when such activities are taking place.

### Language Characteristics

Although Sissy seemed to develop a friendly relationship with the investigator, her refusal to participate in some of the research activities made the collection of data on her language a painstaking process indeed. In addition to her own apparent fear of making a mistake, she was distracted by other children of the family during the taping process. Nevertheless, the final taping and testing together with observations of both parents and investigator provided much data on Sissy's language characteristics.

As observed by the investigator and parents. One of the most obvious expressions used by Sissy is "I don't know." To most activities and questions asked of her, Sissy at first refused to respond; then if the investigator was careful and patient, he could persuade her to answer. Although Sissy was the oldest used in the study, she showed a pronounced tendency to slur words together. Unlike Kim A., who attempted to pronounce each syllable, Sissy simply breathed over difficult words or syllables.

One of the most noticeable characteristics of her speaking was that she appeared to be out of breath when talking. At times during the taping, Sissy refused to pronounce words that were somewhat difficult. When asked to say the word idea, she hesitated as if she were going to say the word but refused to make the attempt. In only one conversation did Sissy apparently relax, raise her voice, and try to articulate carefully.

Although Mrs. M. stated that Sissy is a talkative, extroverted child, throughout the research she remained very quiet and very temperamental. It was noticed during a visit to Sissy's Sunday school class that she did not participate in the singing of songs or recitation of Bible verses. Sissy did in fact remain aloof throughout the entire class. On one occasion when the investigator went to Sissy's house to give her a test, the three-year-old came up to the investigator and put her arms around his neck but still refused to say very much.

Several factors have evidently influenced Sissy's language growth. She shows a normal amount of interest in her books and has learned a number of nursery rhymes. Her mother corrects her pronunciation occasionally, and she is, of course, influenced by her older sister who pretends to read to her. Sissy does not have much opportunity to hear adults talking to each other because her father is away from home most of the day. She does



spend a great deal of time with babysitters, usually a high school student or the Negro maid. One of the most important influences is television. Sissy and her brother and sister enjoy watching many programs, and like every child used in this study, Sissy is well acquainted with Batman. Children's programs and the commercials are the most interesting to her. Some words noted by her parents that may be peculiar to Sissy's environment are restaurant and private club from her father's work; highballs and speakers (electronic) from the adults who visit Mr. and Mrs. M.; and dolphin from the television program, Flipper.

As measured by individual tests. Table IV shows the test scores achieved by Sissy. In analyzing these scores, one must remember that more frequently than any of the other subjects Sissy refused to perform efficiently during the testing period. The examiner had to display a tremendous amount of patience to get Sissy to complete the Stanford-Binet Test. During that test, Sissy became so concerned with a small red ball used for the test that she almost refused to complete the examination. While taking the Peabody Vocabulary Test, Sissy repeatedly stated that she did not know, even before looking at the pictures. The scores, therefore, represent not only her language growth but also her lack of willingness to co-operate with the investigator and the examiner.

TABLE IV  
TEST SCORES FOR SISSY M.

Stanford-Binet Intelligence Scale

C.A. 3-8  
M.A. 3-10  
I.Q. 102

Peabody Form B

C.A. 3-8  
M.A. 2-9  
I.Q. 84

Peabody Form A

C.A. 3-11  
M.A. 3-3  
I.Q. 87

Vineland Social Maturity Scale

C.A. 3-9  
S.A. 4-4

Gesell Motor Co-ordination Developmental Schedule

C.A. 3-11  
\*M.C.A. 3-6

\*Although the oldest child in the study, Sissy performed only fourteen of the eighteen items listed on the Gesell Schedule.

Lance S.

Lance S. was age 3-1 when the study began and 3-5 at its close. Although Lance appeared to be shy when he first met the investigator, before completion of the research he was willing and co-operative in all the tasks required of him. Most of the time he enjoyed the testing, and as a result an abundance of data was collected on his language development.

Parents. Mr. and Mrs. S., who proved to be co-operative and willing to supply information concerning their son, did not let any false sense of modesty prevent a detailed description of their son's language ability. Both parents seemed to understand the inherent problems of this study and responded appropriately.

Mr. S. has been a full-time student at Sam Houston State College during all of Lance's three years. During this period, Mr. S. has completed work on a degree in Business Administration and is presently working toward his Master's Degree. In addition to his activities as a college student, Mr. S. has worked at the Ellis Prison at night. Until he quit his job at the prison, about one year ago, Mr. S. found little time to spend with Lance. Since quitting the job, however, he has spent the majority of his leisure time taking care of Lance while Mrs. S.

works selling Tupperware.

Being an above average college student, Mr. S. indicates a great love for reading. In addition to his school assignments, he reads a variety of magazine articles, some which are related to his field of study and others related to his favorite pastime of sports. Although Mr. S. has had no public speaking experience, he feels that he is capable and intellectually prepared for such activities. No lack of self-confidence was noted in Mr. S. Although Mr. S. believes that he has no difficulties in language usage, the following slips in usage and pronunciation were noted by the investigator:

them things substituted for those things

things was pronounced as [ðeŋz]

iron was pronounced as [drn]

again was pronounced as [əɡɪn]

During Lance's life, Mrs. S. has served as a professional babysitter and a Tupperware saleswoman. She feels that her duties as a babysitter have taught her to communicate with small children and have brought Lance into contact with many children his own age. She has been selling Tupperware for approximately one year, a job which takes her away from Lance much of the time. In addition to her outside occupations, she has completed thirty-seven college hours at Texas Women's University.

After her husband finishes work on his Master's Degree, Mrs. S. intends to return to college.

Mrs. S. feels that her job as a Tupperware saleswoman restricts much of her reading. She does read her Sunday school assignments, and occasionally she helps her husband with his school work. During her school experience in both high school and college, she participated in speech classes and school plays. Her selling job requires that she speak publicly before a group of people almost every day. Mrs. S. is aware of two language difficulties: saying he don't and confusing tenses. Her German ancestry is reflected in a few words and expressions that are occasionally used around Lance.

Home environment. Lance lives in a small house next to the Boy Scout Lodge. Although the living area within the house is limited and Lance has no room of his own, he does have next to his house a complete city park with swings, slides, and plenty of play area. He is allowed to play in the park and around his house unattended. When the investigator made a visit to Lance's home with his own three-year-old daughter, Lance immediately took the little girl to the slide and proceeded to slide down it head first. Lance is an active, athletic little boy who certainly takes advantage of his own handy city park.

The family library consists of numerous volumes for all members of the household. Mr. S. estimates that his library consists of about fifty hardbacks, twenty paperbacks, a set of Collier's Encyclopedias complete with a child's set of books, and approximately two hundred issues of periodicals ranging from McCall's and Goodhousekeeping to the Wall Street Journal. Lance's own books number about fifty. Most are the usual children's books with the addition of some religious ones. Lance does enjoy looking at his child's set of encyclopedias.

Family activities. Mr. and Mrs. S. feel that outside family activities have been limited because of their work as student and saleswoman. In addition to churchgoing, the family makes frequent trips to a farm in Trinity to visit Mrs. S.'s family and to Lake Jackson to visit Mr. S.'s family. When Lance was two years old, the family took a short vacation trip to Six Flags where Lance learned the names of many of the amusement rides. They have attempted to take Lance to the movies, but have found from experience that he is too noisy to carry to such places. Lance does enjoy frequent trips to the ball games with his father. Mrs. S. noted that Lance enjoys such activities and always seems to pick up an abundance of new words and new expressions. At home the

family does not participate in family activities. Mr. S. noted that he is usually busy studying and for this reason finds it necessary to limit Lance's speaking opportunities. Lance has learned to pick up a book and pretend to be reading to himself. At one time during his life, he refused to let anyone read to him. At present, however, he seems to enjoy hearing stories read by other people.

#### Language Characteristics

Lance co-operated with both the examiner and the investigator in supplying data for an analysis of his language characteristics. Mr. S. managed to record Lance's voice in a variety of speaking situations, all proving to be of value in the final analysis of his language.

As observed by the investigator and parents. Lance was not as talkative with the investigator as some of the other subjects, but as the investigation continued, he seemed to take a more active interest in it himself. According to his father, Lance will talk abundantly after once getting to know someone. Around strangers, however, he remains quiet.

A number of factors have influenced Lance's language development. Perhaps the most important of these is television. Lance is very interested in

watching such programs as Johnny Carson, Dean Martin, and Batman. He is also especially interested in the commercials and the cartoons. One of the highlights of his television viewing is the sports programs. From television such words and expressions as Nabisco, substituted for cookies, and "finger-licking good" were heard by either parents or investigator. Lance seems to have an extraordinary talent for relating the words heard and seen on television to other places and events. When hearing the advertisement for Kentucky Fried Chicken, Lance asked his mother to go to Globe, a department store in Houston, to get some. It seems that a fried chicken establishment is located next to Globe, and Lance remembered this when hearing the commercial.

From his parents Lance has learned such unusual words as pastry pal which is a piece of Tupperware sold by his mother. He also knows the names of many of the other Tupperware products. From his father Lance has picked up a number of school terms. The most obvious one is study. Mr. S. feels that his constant reminder to be quiet because "Daddy must study" is the reason for Lance's use of the word. From his visits to relatives Lance learns numerous words but is especially adept at learning the names of new people met during these visits.

A number of speech characteristics were evident



during the taping sessions. Lance, more than any of the other subjects, enjoys punctuating his speech with sound effects. Seldom did he see the picture of an animal that he did not reproduce its sound. One amusing note was taken when Lance on two different occasions referred to a drum as a ding-ding. During the taping, Lance often repeated the answer to a question several times. For example, he stated in answer to a question, "He riding a cow, cow cow, horse. No that's a cow; 'im not a horsey." Lance also used more short-sentence, phrasal, or one-word answers than some of the other subjects. Lance said, for example, "He got shovel" for "He's got a shovel." He also said, "He dirty" for "He's dirty." Lance did have the ability, not seen in the other subjects, to pronounce the medial v sound in such words as beaver and Steven.

As measured by individual tests. Lance's complete co-operation during the testing sessions makes his test scores as listed in Table V especially valid. With both the examiner and the investigator, Lance seemed to perform at maximum efficiency. It is interesting to note, however, that although Lance seems to learn new words quickly and easily, according to his parents, there is a wide discrepancy between his score on the Stanford-Binet Test and the Peabody Vocabulary Test.

Unlike some of the subjects, Lance seemed interested in the Peabody Test and appeared to be doing his best.

Table V presents Lance's test scores as they relate to his language development.

TABLE V  
TEST SCORES FOR LANCE S.

Stanford-Binet Intelligence Scale

C.A. 3-1  
M.A. 4-0  
I.Q. 123

Peabody Form B

C.A. 3-1  
M.A. 3-2  
I.Q. 104

Peabody Form A

C.A. 3-4  
M.A. 3-10  
I.Q. 107

Vineland Social Maturity Scale

C.A. 3-1  
S.A. 5-0

Gesell Motor Co-ordination Developmental Schedule

C.A. 3-4  
\*M.C.A. 3-9

\*Lance performed fifteen of the eighteen items listed on the Gesell Schedule. Although he had some difficulty, he performed satisfactorily in relation to his C.A.

Deanna W.

Deanna W. was 3-6 when the study began and 3-10 at its close. Her being the daughter of the investigator made possible a thorough analysis of Deanna's language development. In addition to serving as one of the six subjects used in the study, Deanna, because she became interested in the research, helped the investigator obtain information from the other children. She talked over the telephone to the other children and aided her father during the administration of the Gesell Motor Co-ordination Test. Her participation encouraged the other children to perform the various items of the test.

Parents. Mr. and Mrs. W. are both in their early twenties and, of course, are very interested in the language development of their only child, Deanna. Both parents felt that this study gave them the opportunity to view objectively their role in Deanna's language growth.

Mr. W. has been either a teacher or a college student during Deanna's entire life. After having obtained a degree in English at Sam Houston State College, he taught in the Spring Branch Public Schools for two years before returning to college to complete work on a Master's Degree. As an English teacher Mr. W. is directly involved in his child's language growth.

Reading and writing have become an integral part of Mr. W.'s life. His occupation is partially responsible for his strong feelings about the great importance of reading, but perhaps more than that, his own neglect of many language activities during his high school career has made him even more aware of their importance. Mr. W. is constantly reading, especially books directly related to his studies in English and history. In the daily newspaper he usually reads the front page and the sports page thoroughly and occasionally the editorial page. He always scans the remainder of the paper and reads any items that attract his attention. Magazines, including Look, Life, and Saturday Evening Post are also read by Mr. W. He considers instilling in Deanna a deep love and respect for books and reading his most important task in regard to her education.

Although Mr. W. is an English teacher and supposedly well-trained in the field of language usage, he considers his faulty enunciation a major characteristic of his speech. When he was in elementary school, Mr. W. learned that he had difficulty producing the wh sounds in such words as which and while. The need to clear up such speech faults has become something of an obsession since he decided to go into the English teaching field. Although he feels that he is fighting a losing battle

with his own East Texas accent, the fact remains that Mr. is genuinely concerned with correct speech.

Deanna's mother, who is a graduate of Elkhart High School, has not attended college herself. Mrs. W. has been involved in much of her husband's studies, having married him when he was in his sophomore year at college. She has worked as a switchboard operator and an attendance office clerk since her marriage. Most of her time, however, has been devoted to caring for Deanna. Her outside activities include teaching and working with nine-year-old children in two church groups.

Mrs. W.'s reading habits can be described as fair. Most of her reading is confined to church material, although she occasionally reads novels that interest her. Mrs. W. does not read the newspaper daily, but does read numerous magazine articles, especially those in Reader's Digest and various women's magazines. Because of her husband, she maintains a high regard for the importance of reading and hopes to instill in Deanna a love for books that she shares with her husband.

Mrs. W. has two noticeable speech characteristics. She frequently uses a double negative, especially "can't hardly." She also confuses the use of pronouns in such expressions as "between she and I." Because of her own family background, Mrs. W. feels that she is lax in

pronunciation. She has, however, made a special effort to improve her speech.

Home environment. Mr. and Mrs. W. and Deanna now live in the unusual location of a boy's dormitory. The one-room apartment shared by the three members of the family has certainly brought about a closeness not experienced by most families. The most important aspect of this environment, however, is the fact that about forty-eight college men live in the same building. Both parents feel that nine months of living in such quarters have brought about an unusual and perhaps beneficial influence on Deanna's language growth. Before moving into the boy's dormitory, Mr. and Mrs. W. lived in several small apartments in Houston. Only for about six months of her life has Deanna enjoyed living in a house with a large play area.

Throughout her first three years, Deanna has not had many children her own age as companions. In Houston she had only a limited number of friends, and now in the boy's dormitory there are, of course, no playmates. Because of this void, Mr. and Mrs. W. have found it necessary to spend more time playing with and entertaining their daughter.

Deanna's home contains a library that is constantly growing as Mr. W. continues in his studies

as a teacher. Deanna herself has quite a number of children's books. It was estimated by Mr. W. that the family has about two hundred and fifty adult volumes and that Deanna has about fifty to seventy-five books of her own. As finances permit, new books are added.

Family activities. Mr. and Mrs. W. have found it necessary because of financial reasons to take Deanna to almost all family outings. Since infancy, Deanna has accompanied her parents to the movies, to school plays, to practically all sporting events, and on all family trips out of town. During the summer the family usually makes several trips to Galveston and to Palestine to visit grandparents. Although Deanna does not always enjoy such activities, she does prefer them to staying with a babysitter. Mr. and Mrs. W. enjoy going places, and Deanna always goes along. One of the highlights of the week for Deanna is Sunday school and church. It is at Sunday school that Deanna has the opportunity to play with children her own age.

At home the family watches television or reads. Many nights Deanna drags out all her books so she can study with her daddy. Mrs. W. reads to Deanna, usually from religious books, almost every night. When she does not read, Mr. W. tells Deanna a bedtime story. Probably to prolong the session, Deanna frequently



tells a story of her own. Her stories are usually repetitions of the story just told her. Because she has had no friends to play with, Deanna has developed the ability to entertain herself. She and her "little girl" are usually found playing together. Talking to herself and to her imaginary companion is one of Deanna's favorite pastimes. While living in the boy's dormitory, Deanna has often managed to persuade some of the boys to play with her or read to her.

#### Language Characteristics

The data collected on Deanna's language characteristics is abundant indeed. It was necessary for the investigator simply to sit down and listen; Deanna, being a talkative child, would perform. The major difficulty in dealing with Deanna was in getting her to stop talking long enough to complete the prescribed tests. The examiner found this especially true when giving Deanna the Peabody Test Form B.

As observed by the investigator and parents. More than any other child involved in the study, Deanna was talkative. Not only was she excessively verbal with her father, the investigator, but with the examiner and the other children. Deanna realized that her father was interested in hearing the children talk; therefore, she

accommodated him. As the study progressed, Deanna became more and more conscious of her own speaking habits. While her father was listening to the tapes of the other subjects, Deanna listened and then commented that she could say those words, too. Deanna loves to sing and make up her own stories, but unlike some of the other subjects, she cannot carry a tune.

Deanna has adopted a number of expressions which she uses repeatedly to punctuate her normal speech. Such passing expressions, some obtained from her parents, some from other sources, and some from the boys in the dormitory are "'member me," "I don't know what to do," "That makes me so sad," and "Would you believe?" Some words that are obviously related to Deanna's particular dormitory environment are beer and cigarettes. She also answers the question often asked, "What are you going to be when you grow up?" by stating that she is going to be a teacher or that she is going to work on her Master's. Even the word thesis has found its way into her vocabulary. Although she certainly does not know its meaning, she does know that the word means work for her father.

Deanna has, as her parents had hoped she would, developed a special love for books. She is very careful with the books that she has and keeps many of them in one of her father's old briefcases. She has never been

guilty of mutilating them and is very upset when a visiting child manages to tear one. During the winter months, Deanna spends much time reading from her books. Most of the time she wants one of her parents to read to her, but will, if necessary, read them herself.

As measured by individual tests. During testing periods, Deanna co-operated fully with one exception. She wanted to talk rather than answer questions. The examiner's skill in handling Deanna was amazing to observe. Without making Deanna feel that it was wrong to talk, the examiner managed to turn Deanna's excessive verbalizing into test answers. From the beginning of the testing period, Deanna felt at ease with the examiner. Near the end of the Stanford-Binet Test Deanna discovered her father hidden behind a bookcase with his tape-recorder. This discovery did not seem to bother her, however, as she continued to answer the questions without paying the least bit of attention to her father who was now seated in open view. The following test scores are the results of the tests given by both the examiner and Deanna's father, the investigator. While it might appear that Deanna, more than the other subjects, would feel at ease with her father, it must be pointed out that she scored the highest on the test given by the examiner. The test scores in Table VI are indicative of Deanna's progress in the

language field to the extent that it is possible to use such standardized tests as a measuring device for language growth.

## TABLE VI

## TEST SCORES FOR DEANNA W.

Stanford-Binet Intelligence Scale

C.A.	3-6
M.A.	4-7
I.Q.	124

Peabody Form B

C.A.	3-6
M.A.	3-6
I.Q.	100

Peabody Form A

C.A.	3-9
M.A.	5-9
I.Q.	117

Vineland Social Maturity Scale

C.A.	3-6
S.A.	4-11

Gesell Motor Co-ordination Developmental Schedule

C.A.	3-9
*M.C.A.	4-6 +

\*Deanna appears to be functioning far beyond her chronological age in motor co-ordination. She completed all items listed on the Gesell Schedule without any difficulty.

## CHAPTER IV

### ANALYSIS OF VOCABULARY, SPEECH AND USAGE DATA OF THE SIX SUBJECTS

The purpose of this chapter is to present an analysis of the language data collected. The three areas of important are vocabulary, speech, and usage. All conclusions which pertain to the language development are limited to the six subjects involved.

#### Vocabulary

Two methods of analysis were used in considering vocabulary. First, a detailed analysis of all test data provided a way of ascertaining each child's vocabulary development in relation to the other subjects of the study. Second, a thorough examination of the environmental factors relating to vocabulary development was made. Conclusions have been drawn concerning the relative development of each subject.

Stanford-Binet Test. From this test a variety of pertinent information relating to vocabulary development was obtained. Although the primary purposes in giving the Stanford-Binet Test was to ascertain the general intelligence of each subject, the various vocabulary test items employed in the Test provided material for a comparison of the vocabularies of the subjects.

Table VII illustrates the ten most relevant vocabulary items on the Stanford-Binet Scale. The table was used for comparing each child's response to vocabulary test items. The symbol (F) on the table indicates that the subject did not answer enough items to receive credit toward his total intelligence score.

A number of items in Table VII are of special interest. Although Mike B. did not answer as many vocabulary items as two other subjects who had lower intelligence quotients computed from the test, he was the only one to answer enough vocabulary items at the 6-0 age level to receive credit. It appears that Mike was perhaps bored with the picture vocabulary questions. Mike, the only child of the six who can read, has shown to both his parents and the investigator that he is more interested in words than in pictures. His performance on the Stanford-Binet Test seems to support this conclusion.

Perhaps the most revealing vocabulary items listed in Table VII are the comprehension tests for ages 3-6, 4-0, and 4-6. The three subjects with the highest intelligence quotients, Mike B., Deanna W., and Lance S., scored highest on comprehension. These questions, unlike those of the picture vocabulary, all for the child to listen to a spoken sentence, comprehend what is being said, and then respond properly. It appears from the results that the comprehension questions are the most valid for evaluating the six subjects of this study.

TABLE VII

STANFORD-BINET VOCABULARY TESTS IN NUMBER  
OF ITEMS ANSWERED CORRECTLY

Test Item and Age Level	Kim A.	Mike B.	Scotty D.	Sissy M.	Lance S.	Deanna W.
2-0 Picture Voc.	14	16	14	15	16	16
2-6 Naming object Picture Voc.	6 16	6 10	5 14	6 15	5 16	6 16
3-0 Picture Voc.	14	10	14	15	16	16
3-6 Response to picts. Comprehension	3 1	3 1	3 0 (F)	3 1	3 1	3 2
4-0 Picture Voc. Comprehension	14 1 (F)	10 (F) 1 (F)	14 0 (F)	15 0 (F)	16 1 (F)	16 2
4-6 Comprehension	1	2	0 (F)	0 (F)	2	2
5-0 Definitions	0 (F)	3	0 (F)	1 (F)	3	3
6-0 Vocabulary	0 (F)	6	Did not attempt	Did not attempt	1 (F)	5 (F)
TOTALS	70	68	64	71	80	87



A final consideration was given the vocabulary items listed for ages 5-0 and 6-0. The definition questions at level 5-0 require that the child listen to a word and then define it with his own oral response. It is necessary for the child to comprehend and respond with the proper words. Again it is significant that Mike B., Deanna W., and Lance S. performed this vocabulary item without difficulty.

Four of the children attempted the vocabulary listed for the 6-0 age level. Only Mike B. responded with enough correct answers to receive credit for the item. Deanna W., who ranked second in general intelligence, also ranked second on this vocabulary item. Lance S. ranked third as he did in general intelligence.

Results of the Stanford-Binet Test seem to indicate that although picture vocabulary items may be an efficient method of testing a young child's vocabulary, unless they provide interesting challenges, the child may not respond at maximum capacity. The results also indicate that comprehension and oral responses appear to be the most valid vocabulary items.

Peabody Vocabulary Test. The purpose of giving the Peabody Vocabulary Test was to test each child's vocabulary development by using a separate test designed to examine vocabulary only. The mental age and intelligence quotient scores derived from this test were computed by using the

table listed in the manual which accompanies the test.

By using the vocabulary intelligence quotient derived from the Peabody Vocabulary Test, it was possible to compare each child's general intelligence (derived from the Stanford-Binet Test) with his vocabulary intelligence. Table VIII ranks each child according to the score made on the Peabody Vocabulary Test. The relationship between general intelligence and vocabulary intelligence is shown by listing what appeared to both examiner and investigator to be the most valid score received from the two forms of the Peabody Vocabulary Test given each child.

In all cases except one, Kim A., the relationship between general intelligence and vocabulary intelligence is consistent. Both the examiner and the investigator believe that Kim's vocabulary test score was influenced by her extreme timidity and passive involvement in the test administration. Other factors, those directly related to her environment, also may have influenced her vocabulary score. Although the discrepancy between her general intelligence and vocabulary intelligence appears unusual, it did (on the basis of other data collected) appear that Kim's vocabulary has not developed as rapidly as her general intelligence.

A careful analysis of results of the Peabody Vocabulary Test indicates that words ending in -ing were

TABLE VIII

COMPARISON OF  
GENERAL INTELLIGENCE WITH VOCABULARY

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	<u>Stanford-Binet I.Q.</u>	<u>Peabody Vocabulary I.Q.</u>
Mike B.	127	125
Deanna W.	124	117
Lance S.	123	107
Scotty D.	104	105
*Kim A.	118	97
Sissy M.	102	87

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\*Kim A. is the only exception in the otherwise consistent table.

frequently missed. It was noticed by the investigator that each time one of the -ing words was asked, the subject hesitated and studied the possible answers much longer than for the other words regardless of their apparent difficulty. A brief chart reveals the relative success of each child in answering the -ing words. The subjects are ranked according to the number of words answered correctly. This ranking is almost identical to that for the entire test. Mike B. and Deanna W. exchanged positions and Lance S. and Scotty D. answered the same number of words correctly.

<u>Subject</u>	<u>Words Answered</u>	<u>Words Attempted</u>
Deanna W.	19	22
Mike B.	16	23
Lance S.	14	22
Scotty D.	14	20
Kim A.	11	18
Sissy M.	9	19

It appears from this chart that the child's ability to deal with -ing words corresponds with his overall vocabulary power.

Several words which should have been answered correctly by most subjects, judging from location on the test, were frequently missed. An analysis of these words to determine why they were missed provides insight into both the merits of the test itself and the vocabulary development of the six subjects. The chart which follows lists these words and shows the frequency with which they were missed.

After a close analysis of these words, several conclusions concerning the vocabulary development can be drawn.

<u>Word</u>	<u>Test Number</u>	<u>Form</u>	<u>Times Missed</u>	<u>Times Attempted</u>
badge	35	A	5	6
goggles	36	A	5	6
coach	39	A	5	6
saddle	40	B	5	6
whale	43	B	4	5
cash	44	B	3	4

Two of the words, goggles and cash, do not appear to be good words for the test. The word goggles is illustrated by a pair of old-fashioned goggles with two separate eye plates. Most commonly seen today is the face mask or goggles, as it is sometimes called, consisting of a one-piece glass plate. According to the parents, the word cash is seldom used around the children. The word money is the usual term.

Lack of opportunity to hear or see the words badge, coach, and saddle accounts for the number of times they were missed. Badge, which is illustrated by a sheriff's badge shaped like a star, was on four occasions called a star by the subject. A policeman's badge would perhaps make a more accurate illustration. Only one child, Lance S., answered the word saddle correctly. It is doubtful that the other children have had the opportunity to come in contact with this word. It was noticed by the investigator on one visit to Lance's house that he was

playing with a toy saddle. The word coach is rarely used or even heard by the parents of the subjects. Deanna W., who answered the word correctly, probably learned the word from her Cinderella story book. Mr. and Mrs. W. could not recall any other possible source for this word.

Vineland Social Maturity Scale. According to Jum C. Nunnally, as stated in his essay "Individual Differences in Word Usage," one important reason children learn words is to solve problems.<sup>1</sup> It seems, then, that a relationship between a child's social age (ability to solve problems) and his vocabulary development would be evident. Table IX illustrates the relationship indicated in this study. In this instance the social age achieved on the Vineland Maturity Scale is used for ranking the six subjects. Also included is the mental age recorded on the Stanford-Binet Test, the chronological age of each child when the Vineland Test was given, and finally the Peabody Test mental age which most closely corresponds with the social age.

Although the evidence is certainly not conclusive, there is some indication that a relationship between social age and vocabulary age does exist.

Environmental factors. During the research, a number

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<sup>1</sup>Jum C. Nunnally, 'Individual Differences in Word Usage,' Directions in Psycholinguistics, Sheldon Rosenberg, editor, p. 206.

A COMPARISON OF  
SOCIAL AGE WITH VOCABULARY

	<u>C.A.</u>	<u>Vineland S.A.</u>	<u>Peabody M.A.</u>
Mike B.	3-5	5-1	5-0
Lance S.	3-1	5-0	3-10
Deanna W.	3-7	4-11	5-9
Kim A.	3-5	4-6	3-4
Scotty D.	3-3	4-4	3-9
Sissy M.	3-8	4-4	3-3

of environmental factors seemed to be directly related to vocabulary development. Although a limited number of children were involved in this study, several conclusions can be drawn concerning the relation of family attitudes toward reading and participation in learning activities to vocabulary development.

It was noticed that the two children who scored the highest on both the Stanford-Binet Test and the Peabody Vocabulary Test have families dedicated to some type of formal instruction for the children. Mrs. B., for example, has spent long hours reading nursery rhymes and teaching the alphabet to Mike. Mike's quick comprehension and great interest in his mother's efforts resulted in his ability to read at an early age. Mrs. B. is the only mother who has spent long periods of time literally teaching her child how to use the language. Deanna W. has also received more formal instruction than the other children. Her parents, who constantly stress the importance of reading, have aroused in Deanna a curiosity for learning. In both cases, the family attitude has been one of complete devotion to reading.

At the other end of the vocabulary scale are Kim A. and Sissy M. Kim's parents admitted during an interview that they do not read much themselves and do not engage in any type of formal instruction in language for their children. Mr. A. stated that he does not like reading and has



made no effort to instill in Kim either a love for reading or for the books themselves. Although Sissy M.'s mother seems concerned with books, she has devoted little time to reading to the children; Sissy does not even have a collection of books of her own. Family attitude and participation in learning activities with the children appear to be major factors in determining the vocabulary development of the subjects.

It is interesting to note that of the three children who had high scores on the vocabulary tests, two of them are each the only child in their respective families. The third child who had a high score is the oldest and obviously, from observations made by the investigator, the dominant child of the three children in his family. Lance S. and Deanna W., each being the only child of the family, have heard their parents talking frequently and have themselves participated in family discussions more often than the other subjects.

On the other hand, the two lowest vocabulary scores were made by children from families consisting of at least three children, and in both cases neither subject is the oldest or dominant child of the family. Kim A. and Sissy M., who spend most of their time playing with their brothers and sisters, most frequently hear the language of their playmates rather than the language of their parents. From the observation made, it appears that the child who

frequently hears his parents using adult language scores higher in vocabulary.

It appears from this study that television is one of the most important environmental factors influencing the development of vocabulary. During the research, numerous words which were obviously learned from the television were heard. Such words as commercial, program, cartoons, monster and dolphin are a sampling of words definitely learned from watching television. The largest category of words learned is proper names, including the names of television actors and advertised products. Most subjects called the picture of a collie dog, which was shown on an alphabet card used during the research, Lassie. Familiar to the children was a variety of names ranging from Gumby to Johnny Carson. It was noticed that Deanna W. can read from the television screen a few words that she sees frequently.

All the children show high interest in certain television programs. Mike B. has not had much opportunity to watch television since September, but prior to that time he was an avid fan. Lance and Deanna, having few children to play with, seemed especially interested in the television programs. Deanna, who lives in a one-room college apartment, is exposed to television programs day and night. Although she does spend most of the day playing, she frequently watches such programs as Love of Life and General Hospital in addition to the usual children's programs. It

appears that more than any one factor outside the family, television has influenced the vocabulary development of the six subjects of this study.

### Speech

Two methods were used in collecting data for an analysis of each subject's speech: (1) tape recordings of each subject's voice and (2) informal conversations with each subject. As each tape was carefully analyzed, the investigator took notes on the articulation, voice quality, and probable parental influences which characterized the subject's speech. Many words and sentences were transcribed into the International Phonetic Alphabet so that proper organization and classification of speech characteristics could be made.

Articulation. The study of each subject's articulation involved four major areas of importance; (1) substitutions; (2) omissions; (3) insertions; and (4) vowel distortions. The analysis of the articulatory characteristics of the six subjects was the most interesting part of the entire research.

According to Poole, certain speech sounds can be listed in a developmental sequence.<sup>2</sup> This sequence indicates

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<sup>2</sup>Irene Poole, "Genetic Development of Articulation of Consonant Sounds," Elementary English Review, XI (June, 1934), p. 160.

that the subjects are progressing at a "normal" rate. Although several subjects produced some of the sounds listed in the sequence at ages beyond the 3-6 level, all appear to be progressing at about the same rate. The following chart is to be considered a flexible guideline because of the varying individual rates of progress among children.<sup>3</sup>

Age 3-6	[p]	[b]	[m]	[w]	[h]				
Age 4-6	[d]	[t]	[n]	[k]	[ŋ]	[j]			
Age 5-6	[f]								
Age 6-6	[v]	[ð]	(then)	[z]	[s]	[l]			
Age 7-6	[r]	[ð]	(thin)	[z]	[s]	[ʌ]	[dʒ]	[tʃ]	

All six subjects correctly produced the five sounds listed at the 3-6 age level. At the other levels, however, various substitutions were made for [g], [ŋ], [j], [f], [v], [ð], [z], [s], [r], [ʌ], [dʒ], and [tʃ]. The [s], [z], and [f] were not as troublesome as Poole's sequence would indicate.

Table X illustrates the most obvious consonant substitutions heard among the six subjects. If the child articulated the sound on several occasions correctly, the word clear was placed in the appropriate position. The word omitted indicates that the child simply avoided the sound and made no actual substitution. If on some occasions the child produced the sound correctly and on others he made

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<sup>3</sup>In order to be consistent throughout the thesis, International Phonetic Alphabet symbols were used to represent Poole's articulation sequence.

TABLE X

## A COMPARISON OF CONSONANT SUBSTITUTIONS

	[ð] initial	[ð]		[v]	[r]	[ŋ]	[ʃ]	[ɪ]
		medial	terminal					
Kim A.	[d]	[t]	[s][f][k]	[b]	[ɪ][w]	omitted	omitted	clear [j]
Mike B.	[d][f][p]	[d][w][f]	[f]	[b]	[ɪ][w]	clear [n]	clear	clear [w]
Scotty D.	[d][t][z]	[f][t][d]	[f][k]	clear [b]	[w]	omitted	clear	clear
Sissy M.	[f] [d]	[s][f][d]	[f]	clear [b]	clear [w]	omitted	[tʃ]	clear
Lance S.	[f] [s] [t] [d]	[p][d][t]	omitted [f]	[b]	[w]	omitted	[s]	clear
Deanna W.	[d][f]	[f][s][t]	[p][f]	[b]	[w]	[n]	clear [tʃ]	clear

a substitution, both the substituted sound and the word clear are listed in the table.

Although many similar substitutions were made by the six subjects, the unusual substitutions are the most interesting. One child, Deanna W., substituted [p] for the terminal [ð] sound. She pronounced the word both as [bop]. Deanna selected the relatively easy bilabial [p] while the other children selected the more difficult labiodental [f] sound. Only one child, Mike B., substituted [w] for the medial [ð] sound. Mike pronounced mother as [mʌwə] and father as [fʌwə]. Although the subjects had little difficulty with the [l] sound, Kim A. on one occasion substituted [j] in the word little pronounced [jɪ<sup>ə</sup>l].

No evidence was found to indicate that either intelligence or motor co-ordination had any relationship to the child's ability to produce difficult sounds. It is perhaps significant to note that the subject with fewest substitutions is also the oldest in chronological age. The youngest child had the highest number of substitutions for the six sounds chosen for close analysis.

Sound omissions were prevalent in the speech of all six subjects. These sound omissions were categorized into four groups: (1) sounds occurring in consonant blends; (2) sounds occurring in lengthy words; (3) final consonants; and (4) medial consonants.

Because of the apparent difficulty in pronouncing

consonant blends, the subject often simply omitted one of the sounds. The following list indicates some of the more frequent omissions of this nature:

<u>blue</u>	pronounced	[bu]
<u>breaker</u>	pronounced	[bekæ]
<u>clock</u>	pronounced	[kak]
<u>glasses</u>	pronounced	[gæsi:]
<u>squirrel</u>	pronounced	[gʒɪ]
<u>play</u>	pronounced	[pe]
<u>dwarf</u>	pronounced	[darf]

In all cases except one, the child simply omitted the second consonant of the blend. Lance S., however, substituted the [g] for [skw] in pronouncing the word squirrel.

In attempting to pronounce lengthy words, the subjects used a variety of omissions. Mike B., who can read, has less trouble with the long words. The other children had great difficulty in pronouncing such words as police-man, television and vegetable. The most common pronunciations of these words were [plismən], [tɛlviʒɪn], and [bɛtʃbəlz]. Other omissions were xylophone [zɔɪfɒn], telephone [tɛɪfɒn], elephant [æɪfənt], and grocery [gʒwɒsi].

Most of the children had little difficulty pronouncing the final consonants in words. Kim A. and Mike B., however, did have some trouble. Kim omitted the final [d] in bird pronouncing it [bɜː], and she omitted the final



[g] in big pronouncing it [bi]. Mike B. had difficulty producing the final [r] in sister and better pronouncing them [sistə] and [bedə].

A few of the subjects omitted medial consonants in relatively short words. The word beetle, for example, was pronounced [biə] while window was on several occasions pronounced [wino]. Hunting [hʌni] and nimble [ninəl] also illustrate the tendency to omit medial consonants.

Although not as prevalent in their speech as omissions, insertions were also noted on several occasions. One of the most common insertions noticed was the indeterminate vowel [ə]. The word clown was pronounced [kəldʌn]; iron was pronounced [aɪwən] and fireman as [faɪwəmən]. The intrusive [r] was especially prevalent in the word wash, often pronounced [wʌrʃ]. Other insertions included the following: money [mʌndi]; policeman [pləɪsmən]; umbrella [ʌmbəweld]; and elephant [hələfənt].

Vowels were frequently distorted by the subjects, although the children did not have as much difficulty with the vowels as with the consonants. Table XI indicates those distortions which appear to be most common.

It is evident from the research that none of the six subjects at this time has any severe articulation problems. All subjects were capable of making sounds that are listed for older children.



TABLE XI

## VOWEL DISTORTIONS

Vowel Attempted	Distortion	Word	Pronunciation
[ɛ]	[æ]	elbow	[æbo]
[ɛ]	[ɪ]	chair bell gets	[tʃɪr] [bɪl] [ɡɪts]
[ɛ]	[ɑ]	elephant	[ɑlfənt]
[ə]	[ɑ]	mother	[madə]
[ə]	[ɪ]	fireman	[faɪrmin]
[i]	[e]	things	[ðenz]
[i]	[ɪ]	read	[rɪd]
[aɪ]	[ɑ]	iron	[ɑrn]
[æ]	[u]	carrots	[kurəts]
[æ]	[e]	hammer	[hemə]

Voice quality. It was impossible to compare the children accurately on the basis of articulation alone. The fact remained, however, that some of the children were more difficult to understand than others. Voice quality of the subjects appeared to be the reason.

Three subjects, Scotty D., Kim A., and Sissy M., were the most difficult to understand. Scotty's somewhat loud voice and his distorted sounds make his speech unintelligible at times. At the other extreme Kim has a quiet, almost whisper-like voice. Like Sissy M., who has a tendency to breathe over both difficult and easy sounds, the lack of volume and intensity in Kim's voice makes her speech difficult to understand.

The other three subjects have no unusual speech peculiarities. Lance S. has some difficulty in articulation, but his clear voice quality makes his speech easy to understand. Mike B. also speaks clearly without any unusual distracting qualities in his voice. Deanna W., being the daughter of the investigator, was of course the easiest to understand simply because she was heard more frequently than the others.

A final consideration was given to a comparison of the speech of the parents and the subjects. In listening to the recordings of each child, the investigator also had the opportunity to listen to at least one of the parents of each child speak. Some revealing similarities were heard.

The following chart indicates the pronunciation of the parents in comparison to the child's:

<u>Word</u>	<u>Parent's Pronunciation</u>	<u>Child's Pronunciation</u>
get	[gɪt]	[gɪt]
get	[gɛt]	[gɪt]
getting	[gɪtɪn]	[gɪtɪn]
on	[ɑn]	[ɑn]
on	[ɒn]	[ɒn]
ideas	[aɪdɪz]	[aɪdɪz]
wash	[wɔɹɪʃ]	[wɔɹɪʃ]
both	[bɒf]	[bɒf]
ostrich	[ɒstɪdɪʒ]	[ɒstɪdɪʒ]
things	[θɛŋz]	[tɛŋz]
rabbit	[wæbɪt]	[wæbɪt]

Although the child might pronounce many of the sounds incorrectly regardless of the parent's pronunciation, the indication is that the child's articulation growth will be somewhat hampered because of the parent's non-standard pronunciations.

#### Usage

Collecting data concerning the grammatical usage of the six subjects was perhaps the most difficult portion of the research. It is necessary to listen for long periods of time to the child speaking freely. Nevertheless,

because of the talkativeness of the investigator's own child and some of the other subjects, some interesting information concerning morphological, syntactical, and word usage was gathered.

Morphological usage. According to Margaret Bryant, morphology is simply the study of inflection.<sup>4</sup> For this study plural formations and inflectional endings of verbs were of primary importance. The six subjects struggled with plurals and verb forms in a variety of ways.

Most plurals were formed by adding s as might be expected. The tendency to add an s to any word in order to make it plural resulted in such plural formations as theys, thems, peoples, and fishes. Although the words fishes and peoples are correctly used in some incidences, the children used them instead of people and fish. Deanna W. frequently added s to the plural pronoun forms.

Verb forms were especially troublesome to all six subjects. The frequent tendency to add ed to any verb to make the past tense was evident in several subjects. This formation of past tense by analogy was illustrated in such sentences used by the children as: "It got throwed away;" "He falled down;" and "I heared you." Perhaps more difficult than forming the past tense was using the s

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<sup>4</sup>Margaret Bryant, Modern English and Its Heritage, p. 338.

inflection which occurs in many third person singular verbs. Although the children were aware that the s is frequently used, they had difficulty deciding when to use it. As a result such expressions as "They do's" and "They likes" were heard by the investigator. Forms of the irregular verb to be were also especially troublesome for the children. Most of the subjects simply avoided am in the expression "I am." They frequently stated "I nice" or "I a good boy." One child used are instead of am, thus saying quite often, "I are going with you" or "I are too your girl friend."

After listening to the children, the investigator saw evidence to support Jespersen's belief that children at first tend to treat all verbs on the analogy of love, loved, kiss, kissed, thus catched, buyed but that they gradually learn the irregular forms.<sup>5</sup> The six subjects were in the period of transition and beginning to use some irregular forms. It appeared that the ones with higher intelligence scores were also using both the analogous form with ed and the irregular forms more frequently. In many cases, however, the subject still used one form of the verb for all tenses. The verb broke, for example, was used as in "It broke," "It is broke," "Don't broke it," and "It might be broke."

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<sup>5</sup>Otto Jespersen, Language; Its Nature, Development and Origin, p. 130.

Word usage. The subjects' individuality and ingenuity were evident in their various use of words. The more talkative the child, the more variety was evident. Effective analysis of word usage depended upon the subject's willingness to experiment with the language.

The use of pronouns was the most significant aspect of word usage. Although the children could distinguish between plural and singular pronouns, they could not consistently use them correctly. The following sentences illustrate some of their problems:

They people would blow that Indian up.

You picture is here. (for your picture)

Them do's like it.

The children had especial difficulty in using the right case of the pronoun as the following sentences indicate:

Yes him did

They're going home to eat by theirselves.

Him is a good puppy.

I know he.

It won't hurt he much.

One of the best illustrations of pronoun confusion was a telephone conversation between Kim A. and Deanna W. Toward the end of the conversation, Mrs. A. asked Kim to tell Deanna that "mommie wants to speak to her daddy." After three attempts to get Kim to repeat the instruction using the correct pronouns, Mrs. A. had to take the telephone

away from Kim and ask the question herself. Both Kim and Deanna were unable to translate her into your.

Jespersen states, "Most children learn to say 'no' before they can say 'yes'--simply because negation is a stronger expression of feeling than affirmation."<sup>6</sup> Because of the strong feeling that the children associate with the negative words, they tend to use double and triple negatives to express strong emotion. Deanna W. and Mike B., who enjoy telling exciting stories of their own, frequently use an abundance of negative words to express strong feeling. When Mike stated that "he don't have no feet" and "I don't have nothing to eat," it was certainly clear to the investigator what he meant. It is obvious that Mike is aware that the negative words emphasize strong feeling; therefore, he reasons that the more negative words he uses, the more emphatic his sentence will be. Deanna W. frequently admonishes her dolls by saying "Don't you do that no more." Whenever Deanna wants to put real emphasis into a negative statement, she simply adds another negative word or two. On several occasions Deanna has used such triple negatives as "I can not hardly do that no more."

One interesting characteristic of the children was their use of the affirmative. As much as any one aspect of their word usage, the affirmative reply shows the

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<sup>6</sup>Ibid., p. 136.



originality and environmental influences of each child. The following list indicates the most common affirmative reply by each child:

Kim A.	um umm (without lip movement)
Mike B.	yes sir (pronounced [jəʊsə] )
Scotty D.	yeah
Sissy M.	um umm, yes
Lance S.	O.K.
Deanna W.	yes (pronounced [ɪɛs] )

Although the parents desired yes sir, only Mike consistently used that affirmative reply. Perhaps more than any one factor, the parents' own usage influenced the subject's usage.

Most subjects used some technique to gain attention to what they were saying. Two subjects, Scotty D. and Deanna W., frequently used hey to attract attention. Mike B. repeated the first part of the sentence several times, usually increasing the volume each time until he had gained the attention he desired. Other individual words included the onomatopoetic words of both Mike B. and Lance S. which included smash, wack, wapp, and whop. Togo and Bogo were two of many original words used by Mike. Usually such creations were used as names of people or objects. Other word creations included "Hatch him with a hatchet," an excellent example of back formation. A neighbor was called a fixer because he fixes everything for the children. The steering wheel was referred to as a driver-thing and a piece of highway equipment as a roller-thing. Mike B., Lance S., and Deanna W. never let the lack of an appropriate word



limit their speech. If the word was not known, they simply invented a new word.

Syntactical usage. A final consideration was given each subject's ability to deal with the relationships between words. It was found that all subjects used the common sentence pattern of subject-verb-complement most of the time. In all the conversations, only the interrogative sentences provided a frequent inversion of the normal sentence order. Deanna W. even attempted to force the interrogative sentence into the subject-verb-complement pattern when she asked, "Who it is?" (Who is it?) and "Where you are?" (Where are you?).

During the tape-recording, no complex sentences were formulated by the subjects. Short simple sentences were the most frequently used by the children. The following sentences illustrate the type used by the subjects:

My TV don't work.

I tear the pages off.

She put it on.

He's riding a cow.

A few compound sentences were heard, most of which were used by either Mike B. or Deanna W. It should be pointed out that their talkativeness provided a better opportunity for hearing such sentences as the following:

I like Jana and she's nice.

I know Daddy, but I love you.

Here came the wicked witch, and she smashed  
King Cole

The wicked witch was wicked and the King  
was too.

Although all the children were formulating sentences, they still quite frequently used phrases and one-word replies. It appeared that those who enjoy talking and experimenting with the language form the greatest number of complete and lengthy sentences.

The study of the vocabulary, speech, and usage of each subject was perhaps the most important portion of this thesis. All six subjects provided some interesting data in this area of language study.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Summary

It was the purpose of this study to measure and analyze the language development of six three-year-old children. This task was attempted through selecting six children who appeared to have similar environments. This work isolated the factors that have probably influenced the language development of each subject. Emphasis was placed on the vocabulary, speech, and usage of the subjects.

The methods used to obtain data in this study were measuring each subject by means of standardized tests, interviewing the parents of each child, conversing informally with each child, recording each child's speech on tape, and reading selected secondary sources.

After an objective analysis of the standardized test results and presentation of the environmental factors that seemingly affected the language development of each child, specific examples of the language development of each subject were presented in the areas of vocabulary, speech, and usage.

#### Conclusions

The evidence presented in this study indicate that the following conclusions appear to be in order:

1. Standardized tests are useful in the analysis and measurement of language development of young children.
2. No one standardized test gives conclusive data concerning language development.
3. A battery of standardized tests yields useful yet inconclusive data concerning language development.
4. There is an obvious relationship between intelligence quotients and vocabulary development.
5. There appears to be a relationship between social maturity and vocabulary development.
6. No evidence indicated that motor co-ordination and articulation are related.
7. The child's willingness to talk freely is directly related to vocabulary development.
8. Patterns of articulation development are evident in three-year-old children.
9. Patterns in morphological and syntactical usage are well established at the age of three years.
10. The six subjects formulate a few compound sentences but no complex sentences.
11. Family attitude toward education and reading is an important influence on language development.
12. The parent's language habits are related to the child's language development.

13. The child's age in relation to his brothers and sisters appears to have some influence on language development.

14. The opportunity to hear adults speaking frequently as a results of being the only child of the family is directly related to vocabulary development.

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## APPENDIX A

# ARTICULATION WORD LIST

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The words of this list were used for testing the articulation of the six subjects under study.

building blocks	get the ball	very funny
blinking eyes	get me a drink	very nice
blind as a bat	give me some soup	even daddy
blue bird	grandmother	Steven
thank you	Henry the Hound	lover boy
that big boy	I'm having fun	why not do it
this is the one	He's Harvey Hassle	which way
think mommie	sinner man	while he is here
bird's nest	I know better	look out the window
little girl	suit of clothes	you're too young
jumping squirrel	cluttered clothes	yes mommie
curly hair	bell clapper	sizzle
yes sir	clinging vine	zebras are silly
fire truck	just a minute	zip, zot
everything	Jack and Jill	singing
something	Johnny Jumping Jack	running
elephant	Judy the Monkey	laughing
fire engine	late to work	How now
ice cream	Millie Mouse	brown cow
little boy	Lowie Lumpkin	law breaker
big bear	Peter Piper	towel
beetle bum	plenty to eat	clown
big brute	pumpkin pie	my sister
bird brain	please poppa	I know it
little brother	quick rabbit	iron the clothes
catch a cat	quiet as a mouse	wash the dishes
cotton candy	run rabbit	ideas are fun
cry baby	red wagon	both boys
puppy dog	rough road	both girls
Donald Duck	Santa Claus	wash cloth
Seven Dwarfs	Susan Spotless	dish cloth
five little Indians	Sister Sue	sea shore
fairy tale	take my table	sell things
farmer McDonald	try again	shells at the
fifteen kitty cats	too many people	beach



Vita was removed during scanning