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Title: A COMPARISON OF VERBAL RESPONSES OF ANGLO-  
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Dr. R. B. Denis Bañon

The study compares the differences in verbal responses between 39 Anglo-resident and 32 Anglo-migrant children in the first grade in selected school districts in Oregon.

The children were tested for I. Q. using the Goodenough Draw-A-Man test. They were grouped for comparison purposes by age, sex, and by migrancy or residency.

The children were shown 12 pictures from the Davis-Eels Games, and asked to "tell about the picture." The responses were tape recorded, transcribed, and compiled for interpretation.

Males and females, residents and migrants, and older and younger children were compared for differences in: 1) vocabulary (according to Dolch Hard and Easy Word Lists); 2) types of sentences (structure); and 3) for the number and length of sentences (as determined by morpheme count). The study also compared the relationship between general ability as measured by the Goodenough Draw-A-Man

test and verbal responses for both groups.

Using the analysis of variance technique, significant differences were recorded for the Dolch Easy and Total Dolch Words Lists favoring males over females and residents over migrants.

There were five sentence structure patterns out of a possible 53 which showed significant differences. On these five sentence structures, there were significant differences favoring males over females, residents over migrants, and older children over younger children.

There were significant differences favoring males over females and residents over migrants, and older children over younger children with reference to the length of sentences used and the number of sentences used to describe various pictures.

The most significant result of the study, aside from verifying that there are differences between migrants and residents in verbal responses, is the consistent difference favoring boys over girls. This appears to be the result of the materials used to elicit the verbal responses. The study indicates that perhaps what is presented, and how it is presented, may be more important than any other consideration in terms of stimulating verbal responses.

A Comparison of Verbal Responses of Anglo-  
Migrant and Anglo-Resident Children

by

Ronald Gene Petrie

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Dean of Graduate School

Date thesis is presented April 22, 1970

Typed by Gwendolyn Hansen for Ronald Gene Petrie

Dedicated to all of the people  
who helped me along the way,  
but particularly to:

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Dr. Donald R. Saunders  
Mr. and Mrs. J. W. Richardson  
Dr. R. B. Denis Baron  
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# A COMPARISON OF VERBAL RESPONSES OF ANGLO-MIGRANT AND ANGLO-RESIDENT CHILDREN

## CHAPTER I

### INTRODUCTION

#### Statement of the Problem

A survey of the available literature indicates that there is a dearth of authentic objective research in the area of migrant education. This is especially true in the area of the specific learning problems of migrant children. There have been several descriptive studies which state some of the problems and make specific recommendations for improvement in the general programs of migrant education. One study which is particularly relevant to this thesis is the study which was done in 1960 by the Oregon State Department of Education (Petrie, 1960). This study surveyed 81 school districts in 14 counties which had an enrollment of 1,937 migrant children and is the only comprehensive study on migrant children in the State of Oregon to date. The study identified the number of migrant children, the schools that they were attending, their educational deficiencies, and made recommendations for permanent programs for the education of migrant children.

The report (Petrie, 1960) identified the learning problem of the

the Spanish-speaking (Chicano) migrant as being primarily one of deficiency in the language arts, although the study did not spell out in what way and to what degree. The study showed that the Anglo-migrant child had more problems in arithmetic, health, and in social adjustment than did his Spanish-speaking counterpart.

An analysis of the general migrant population shows that there are Spanish-speaking migrants (Chicano), Negro migrants, Anglo migrants, and Indian migrants. The Negro migrants are primarily a problem on the East Coast Migrant Stream, and the Indians are confined primarily to scattered areas throughout the country that border on Indian reservations (i. e., The Seminoles from Florida; the Dakota Sioux Indians and the Arizona Navajos).

The Spanish-speaking (or Chicano) migrant is largely confined to the West Coast Migrant Stream and the Central States Migrant Stream while the Anglo migrant operates as a "free wheeler" in all of the streams.

In Oregon in 1960, there were 1,937 migrant children in the public schools. Of this number, 668 were Spanish speaking and 1,269 (or 66%) were Anglos.

### The Problem of the Anglo-Migrant

Teachers in schools having large numbers of migrant children seem to recognize that the educational problems of Spanish-speaking

children may be directly related to language deficiencies, if all other things are equal. Teachers feel that Anglo-migrant students are recognized as having social adjustment problems, are suspected of having generally lower mental ability than resident students, and have problems in language arts, arithmetic, and health (Petrie, 1960). The 1960 report indicated conclusively that the Anglo-migrant child was decidedly worse off in terms of all educational and social deficiencies than was his Spanish-speaking counterpart (Petrie, 1960), and that he was definitely inferior academically in comparison to the regular resident Anglo student. However, the report made no attempt to identify which areas in the language arts were deficient although reading was generally mentioned.

#### Purpose of the Study

If the Anglo-migrant child is to have a properly designed instructional program to fit his specific educational needs, it is necessary to identify his educational needs and academic deficiencies objectively.

The purpose of this study is to explore, under controlled conditions, one possible aspect of deficiency of Anglo-migrant children; that is, a comparison of their verbal responses with those of regular resident students with the verbal response when identical sets of stimulative devices are employed. This study compares the types of

differences and the levels of differences between these two groups of students.

If it can be established that there are significant differences between Anglo-migrant and Anglo-resident children in their verbal responses, then recommendations for the development of additional research related to comprehensive programs of language development and linguistic analysis can be made. If there is not a significant difference in the verbal responses of Anglo-migrant and Anglo-resident children, then the study will have delimited to some extent one of the possible reasons for their educational deficiencies.

#### Significance of the Problem

Anglo migrants comprise 66% of the migrant population in the state of Oregon (Petrie, 1960). Additional information indicates that, "out of 34.3 million Americans classified as poverty by the Office of Economic Opportunity, 23.7 million (or 69%) are white. Rural families classified as poverty have a ratio of four white to one non-white" (Bird and McCoy, 1967). There is a higher percentage of Negro than "white" poor, but in actual numbers the white poor are by far the largest group. All white poor are not migrants obviously, but it seems reasonable to assume that if language problems do exist for poor white migrants the same might apply to the general poor white population.



### The Problem

The purpose of the study is to investigate the possibility that Anglo-migrant children differ significantly in verbal response characteristics from Anglo children from the regular resident population. The study will attempt to answer two major questions:

1. Do Anglo-migrant children and Anglo-resident children differ in regard to verbal responses?
  - A. Vocabulary Level (according to Dolch Easy and Hard word lists)
  - B. Types of Sentence (structure)
  - C. Number and Length of Sentences (morpheme count)
2. Does the relationship between general ability and verbal response differ between Anglo-resident and Anglo-migrant children?

The study is concerned with determining if there are any differences between Anglo-migrant and Anglo-resident children in verbal responses; and, if there are, in what areas do they fall and what is their extent? The study does not attempt to test teaching techniques, methods, or materials to be used to overcome any deficiencies noted. Conclusions and recommendations are stated in Chapter V.

### Definitions

An Anglo-migrant child is one whose parents are Caucasians and who move at least once a year in pursuit of seasonal agricultural labor.

For the purposes of this investigation verbal response means length of sentences, level of vocabulary, and complexity and order of sentence structure.

- A.. Length of sentences means the number of words used in verbal responses to David-Eels pictures presented in stimuli.
- B. Level of vocabulary means the level of words on the Dolch Easy and Dolch Hard word lists.
- C. Complexity of sentence structure means the complexity and order of sentences used in verbal responses to the David-Eels pictures. This variable was evaluated using linguistic analysis.

"Chicano" means persons who speak Spanish and who may be from Mexican, Indian, or Spanish descent.

Special linguistic definitions are explained in depth in Chapter III.

### Pilot Study

In 1966 a Pilot Study was run by the investigator using 15 neighborhood children as well as first grade students in the

Monmouth-Independence Elementary School District. The sample for the Pilot Study included eight migrant children. The Pilot Study was designed to test the various approaches to implementing the study, testing the equipment, the procedure for setting up the machinery, the testing situation, and methods of obtaining classroom rapport. In addition, informal comparisons of the Goodenough "Draw a Man Test" and Stanford-Binet Individual Intelligence Test were made.

The Pilot Study established the general procedure for setting up the physical aspects of the testing situation. The Pilot Study also provided the opportunity for trying out the pictures from the David-Eells Games Primary Battery to ascertain whether or not they would stimulate sufficient verbal responses to make the study.

### Rationale Underlying the Study

There is a great deal of money and effort current being devoted to the area of migrant problems. The state of Oregon under Title I of the Elementary and Secondary Education Act is currently spending over a million dollars a year on migrant education and related problems. Nationally, the ESEA Act is spending approximately 25 million dollars on migrant education with the Office of Economic Opportunity spending approximately 15 million dollars on adult education as it relates to migrants. In addition, there are countless funds and private organizations performing work in the fields such as; The

Migrant Ministry, Council of Churches, B'nai B'rith, and others.

Most of the money is being spent for hiring of remedial reading teachers, for hiring teacher aides, and for supplies and equipment. Very little, if any, basic research is being done to determine fundamental learning problems of the people being served. There is the tendency to lump all "poor" into the same class, when in fact, they appear to have some very fundamental differences and problems. This study is an effort to try to identify some fundamental problems and differences.

#### Rationale Underlying the Design of the Study

It is important to realize that this is a general study using linguistic techniques for analysis of language differences. It should be very clear, however, that this is not a linguistic study per se. One of the specific purposes of the study is to draw attention to the fact of the differences and to identify the concept of "cultural pluralism" as it relates to our society, and to relate the problems of education, verbal ability, and cultural differences.

Many people readily acknowledge the educational deficiencies and problems of Blacks or Chicanos in our society (see Chapter II). But few recognize the specific difficulties of the poor white. As previously mentioned, approximately 23.7 million poor people in the United States are white. Consequently, this study draws attention to

at least one facet of their particular problems and might shed a great deal of light on the subject and consequently spark additional research. It's obvious that there needs to be a great deal more research than the limited amount that this study can do concerning the problem. Hopefully, this study will identify and specify some differences and give direction for other investigators in the field.

The present investigator of this study has had a personal interest in the particular problem since 1956 and has worked extensively in many fields directly related to the problem. The idea for the specific approach to the problem was gleaned from the research of Dorothea McCarthy (1951) and others as reported in the "Manual of Child Psychology" 1951 edition.

Most of the approaches to analysis of material reported by McCarthy were not evaluated using linguistic techniques. It seemed imperative to use linguistic techniques to evaluate the data in view of more recent trends. A review of the literature indicated that the work done by Ruth Strickland (1962) seemed best to fit the design of this particular study. Dr. Strickland solved some of the basic problems in identifying linguistic terms by assembling a group of linguistic specialists who came to common agreement concerning the language of linguistics as well as the rules and procedures for the analysis of data.

### Limitations of the Study

One of the difficulties experienced in designing the study was the determination of the evaluative criteria for analysis of the material. The field of linguistics is presently involved in a developmental stage which makes it difficult to get acceptance and concurrence on all terms and approaches for evaluation. In other words, there are several schools of linguistic thought and one has to be somewhat arbitrary in selecting a system which best fits the needs of the particular study. Inasmuch as the United States Office of Education has accepted Strickland's (1960) approach and because it has been accepted by others doing linguistic studies, it seemed reasonable to adopt it for this study.

Another limitation of a study of this type, is the actual reaction of the children to the testing situation. It is impossible to tell if there were some children who, in fact, were nervous and who might have been hampered by the testing situation. Every attempt was made, however, to put the tape recorder in an unobtrusive position and to make the children feel relaxed and comfortable. Generally speaking, the children tended to be uninhibited and appeared to cooperate freely during the test.

Another limitation is the amount and type of verbal responses which were stimulated by the Davis-Eels pictures. Some other response stimulator could have been used that may or may not have

elicited more or different responses. It is probable, however, that another set of pictures or some other types of probing might have produced somewhat different results. It is assumed that the Davis-Eels pictures had equal relevance to both migrant and resident groups as response stimulators. The Davis-Eels pictures were selected in part because they are reported to be culture free (Weider and Noller, 1950).

It is interesting to note that some pictures generally received more responses than did other pictures. These responses were cross-checked against general mental ability and age to see if there were any significant differences. The results of this check are provided in chapters IV and V.

The greatest limitation to any study is the great number of variables which cannot be controlled which may effect the outcomes. There probably were some children who did not feel well on the day of the test and who on any other given day may have responded more or less, depending on how they felt. Such factors may be assumed to operate with equal frequency on both resident and migrant groups.

Another limitation to the study is the number of participants. Although there are enough children to provide the data so that statistical interpretations and projections can be made, it would be preferable to have a large number of subjects. One of the important considerations, however, is that the "N" in most of the comparisons is not the number of children but rather is the number of responses made

to the given stimuli. Consequently, observations, or "N", are in reality quite large and are suitable for statistical analysis and projection.

A limitation of the pictures used for verbal response stimulators is that some of the pictures were relatively "old fashioned." One picture in particular (No. 2, See Appendix D) shows a boy with a hat, (beanie) which was popular 25 to 30 years ago. Some children called it a hat, some called it a crown, some didn't know what to call it. At first the investigator felt that this might be a limiting factor but later came to the conclusion that it tended to be a stimulator of verbal responses and probably would not have an adverse effect upon the total scoring of the test.

One of the problems of the study was equipment failure. While in Eastern Oregon taping interviews with students in the Pioneer School District, the equipment failed to record properly and the author did not realize this until after he had returned to Corvallis. In addition to equipment malfunction, there was a bad batch of tapes which so distorted the recordings that it was impossible to transcribe them. Consequently, instead of having 35 pairs for comparison purposes as originally intended, there were actually 32 Anglo-migrant children and 39 regular residents in the final sample. Likewise, in the original proposal, it was planned to have an equal number of males and females. Inasmuch as the statistical interpretation can take into account these



differences in numbers, the investigator, upon advice from the Statistics Department, decided to proceed with the total group rather than cut the group down to 32 matched pairs.

## CHAPTER II

### REVIEW OF THE LITERATURE AND RELATED RESEARCH

The study compares the verbal responses of white migrant children with those of white resident children in the first grade, for the purposes of determining whether there are any differences in the verbal responses of the two groups. If it can be established that there are differences then those differences can be taken into account when establishing new educational programs. With new information it's possible that different instructional techniques could be developed which could provide the type of assistance that children need to overcome verbal deficiencies. It seems imperative therefore that one look to the literature and research to lay the groundwork for the basic rationale of the study.

#### Early Studies of Language

There have been studies of language using grammatical approaches and word-counting techniques starting in the late 1800's. An excellent review of the available information up until 1946 was done by Dorothea McCarthy. McCarthy (1951), quoting Horn states that, "Verbal symbols have a predominant function in thinking" (p. 477). She further states:

Language, although perhaps not essential for all thinking is so frequently involved in thought and especially in making abstractions, in making fine distinctions, and shades of meaning; as well as in communicating to others the results of one's thought processes that a certain basic level of attainment in linguistic skills is practically an essential prerequisite of a child's formal education (p. 477).

McCarthy's review of the literature leads her to believe that a basic mastery of spoken language is acquired very rapidly during the pre-school years, usually between the ages of one and five, and that any child whose language development is seriously delayed for any reason has almost an insurmountable handicap in social and academic relationships.

The early studies of language development started with rather casual observation of isolated cases. Linguistic development lends itself readily to the method of direct observation without the use of instrumentation. Consequently, language studies played a large part in the child-study movement in the 1890's. Many of the early studies placed considerable emphasis on language development while others had an emphasis on the observed area of the child's maturational development. Most of the early bibliographical studies were chiefly concerned with the acquisition of vocabulary starting with the first word up to the fourth or fifth year when the extent of the vocabulary became so great that the data tended to become difficult to handle. Although there was a wealth of observational material, which proved stimulating to research workers, it was of little scientific merit, and

was unsystematic as far as method was concerned (McCarthy, 1951).

In 1930, McCarthy published a study based on the recordings of 50 consecutive verbal responses from each of 140 children ranging in age from eighteen to fifty-four months. A representative sampling of the population was secured by using paternal occupation as a criterion for selection. The data were subjected to four major types of analysis. They were: 1) The length of response; 2) The complexity of sentence structure; 3) The function of the response; and 4) The proportions of the various parts of speech. Each of these analyses were carried on in relation to age, sex, parental occupation, mental age, and the age of the associates (McCarthy, 1951).

This early work by McCarthy was duplicated by a number of other investigators and served as a partial model for the design of this study. This investigator borrowed the concept of analyzing the length of the responses and the complexity of sentence structure compared to age, sex, parental occupation, and intelligence from McCarthy's work.

Two sections of McCarthy's work provide some information which might shed some light on this study. One of the sections is a review of development and individual differences. In this section, McCarthy (1951) reviewed various differences, including sex differences and commented:

One of the most consistent findings to emerge from the mass of data accumulated to date on language development, seems to be a slight difference in favor of girls in nearly all of the aspects of language that have been studied. Whenever groups of boys and girls are well-matched in intelligence and socio-economic background, and when the situation in which responses are recorded does not tend to favor the interest of one sex or the other, (underline by this investigator) there appear to be slight differences in favor of girls (p. 551).

A 1937 study by E. A. Davis states that, "Greater spontaneity of speech is unquestionably characteristic of boys" (McCarthy, 1951, p. 552). McCarthy feels that Davis' study was "loaded" for boys and that it was a wonder that girls responded at all, inasmuch as Davis had the boys playing with boy-types of toys to stimulate their verbal responses. Davis' contention is that girls responded just as much to the toys as boys, but that boys are more talkative. McCarthy does not feel that in view of these circumstances, (use of materials favoring boys interest), anyone should take seriously as valid comparisons, the data on sex differences from Davis' investigation.

McCarthy's research shows that sentence length is the most objective and the most reliable single quantitative measure for comparison of the sexes. Almost all other measures which show developmental trends with age, also reveal a slightly more rapid linguistic maturity in girls.

McCarthy quoting E. A. Davis in summarizing another finding from a different study, also revealed sex differences in favor of girls. She states:

In nearly every phase of language studied, girls were found to retain up to the 9 1/2 year level, the superiority which has been previously demonstrated for the preschool period. This is true of articulation, word usage, and length, complexity, and grammatical correctness of sentences. Girls use more personal pronouns and conjunctions than boys and less slang (1951, p. 553).

McCarthy (1951) quoting studies by E. A. Davis and F. M.

Young finds, "The sex differences are more marked among children of lower socio-economic levels than among those from superior homes" (p. 553).

In her section on "The Effect of Various Environmental Factors," McCarthy (1951) states, "There is considerable evidence in the literature to indicate that there exists a marked relationship between socio-economic status of the family and the child's linguistic development" (p. 557). McCarthy then further cites studies done in 1900, 1921, 1931, and 1937 concerning socio-economic differences and states,

In all these studies occupational group differences are consistent and strikingly in favor of the upper socio-economic levels in all types of analysis. The children from the upper social levels not only use longer sentences, but also use more mature sentence forms at earlier ages" (p. 558)

### The Relationship Between Socio-Economic Class and Language Development

The theoretical writings of Bernstein (1962) and the book by Vygotsky (1962) represent approaches which are useful in the study of

language acquisition in the social context. In his writing, Bernstein (1962) emphasized status as a major social determinant of speech patterns within social groups. Vygotsky (1962) proposed that the conditions which influenced the development of speech (overt language) are also related to the development of verbal mediation (covert language). Vygotsky also suggests that a socially determined wording condition of central importance in the acquisition of language is the availability for engaging the child in dialogue.

John and Goldstein (1964) state, "That children develop and test their tentative notions (hypotheses) about the meanings of words and the structure of sentences chiefly through verbal interaction with more verbally mature speakers" (p. 266).

John and Goldstein (1964) further believe that new verbal responses by young children can be facilitated by a relative invariance in the environment. They state that one of the major characteristics of the home which is a natural setting for language acquisition, is its intrinsic variability. They also feel that lower-class homes can be described as lacking in scheduling or predictability for children and as more crowded and more transient in their inhabitant than middle-class homes.

John and Goldstein (1964) mention other studies which point out systematic variations in verbal indices of children grouped according to father's occupation and/or education. They also state that children

from high income, high status families have been found to speak in longer sentences, more articulately, and with more varied vocabulary than do their lower-class peers. They believe that the crucial difference between middle-class and lower-class individuals is not in the quality of language, but in its use. They point out that language diversity may be the direct result of educational and occupational experiences of the speaker, and that middle-class occupations generally require and permit verbal interaction with a variety of people. The middle-class individual is described as continually adjusting his speech in terms of rate, intonation, vocabulary, and grammatical complexity in an attempt to provide optimal communication. The verbal interaction required in lower-class occupations is of a more routine, highly conventionalized nature. The middle-class individual, then, develops a more flexible use of language than is found in persons of lower-class backgrounds.

John and Goldstein (1964) state:

The middle-class child learns by feedback; by being heard, corrected and modified--by gaining 'operant control' over his social environment by using words that he hears. The child learns by interacting with an adult teacher who plays an active role in simplifying the various components of word-referent relationships (p. 269).

These investigators believe that lower-class children, because of insufficient corrective feedback have great difficulty in acquiring words which appear in a number of different contexts.



John and Goldstein (1964) further state that children who receive insufficient stimulation in early childhood develop deficiencies not only in overt verbal skills, but also in verbal mediation behavior. Verbal mediation is described as verbal behavior which facilitates further learning which controls behavior and which permits the development of conceptual thinking (Jensen, 1963).

John and Goldstein (1964) indicate that a child from a lower-socio-economic background may experience a deficient amount of verbal interaction and that he learns most of his language by means of receptive exposure--by hearing rather than by his own active speech. Words acquired with little corrective feedback in a stable wording environment will be of minimum use as mediators at a later stage of development. In contrast the child whose language acquisition is characterized by active participation with a more verbally mature individual not only develops greater verbal proficiency--as a result of being listened to and corrected--but also is more likely to rely on and use words effectively as mediators.

One of the studies which relates indirectly to this study is the work done by Bernstein (1961) in England. Bernstein's studies have led him to believe that lower-class and middle-class people can be differentiated according to the type of language code that they manifest. He has designated a code of lower-class groups as restricted or public language; the code of the middle-class as formal or elaborated.

One of the basic differences between the two codes is the manner in which meaning is clarified by the speaker. Within the formal system, the speaker assumes responsibility for establishing the proper label--referent relationship. The organization of a particular phrase is restricted to the needs of a particular communication situation. The syntactical patterns of the middle-class speaker are more complex with subordinant clauses, more complex verbs, and finer gradations of nouns and verbs expressed by "uncommon" verbs, adverbs, and adjectives used as modifiers.

The lower-class speakers, however, display a tendency to rely upon the listener to infer the explicit meanings of the utterance. Implicit within their syntactical patterns is the assumption that the speaker and listener have a highly similar reference system that allows the basic language pattern to differentiate referent from non-referent. The lower-class tends to use patterns of speech such as, "you know" which require an affirmation on the part of the listener that he has understood the intent of the speaker.

Bernstein's theory is that as the child learns his speech so he will learn his social structure, and that the major role of speech is to sensitize the child progressively to the future demands that will be made upon him. If a child only learns the lower-class level of speech, this limits his social mobility and may be robbing the country (in this case, England) of the development of some of its resources which

heretofore have not been developed. Bernstein (1961) suggests two ways by which change may be introduced:

By modification of the social structure or by operating directly on the speech itself. The first is not within the province of the educational institutions and is essentially a political matter. The second under suitable conditions and methods could be undertaken by the schools. Especially the nursery and primary schools working in intimate co-operation with the parents (p. 309).

The Institute for Developmental Studies in New York conducted a four-year study of the language patterns of culturally deprived children between the first and fifth grades. The study was carried on by Martin Deutsch (1965) and was entitled, Verbal Survey. The study was designed to ferret out the linguistic and cognitive skills that differentiate the lower socio-economic class child from the middle-class child.

The lower socio-economic child appears to be deficient in all language skills that pertain to abstract categorical uses of language. The Deutsch study further shows that language deficiencies are present on all levels of linguistic analysis but are most obvious on higher levels of communication. Deutsch compared the results of 52 of 100 test variables covering I.Q. scores through auditorial discrimination tasks. Of the 42 significant correlations at the first-grade level, only six were related to race alone and only six of 43 significant correlations in the fifth grade level related to race. Generally, the child's socio-economic status was more debilitating than was his race. The

results of the Deutsch study concentrated on the "Cumulative Deficit Phenomenon," that occurs between the first and the fifth grades of school. The "Cumulative Deficit Phenomenon" can be defined as that which takes place over a period of time. In other words, a small deficit in verbal or language development at the first grade level becomes much greater and has more influence as the child goes on in school in terms of affecting his performance. If a child has difficulty with speech in the first grade and if this is not corrected, the gap becomes more and more pronounced the further along he goes in school. In Deutsch's study on all comparisons related to language usage, the lower-class children were inferior to middle-class children. They were especially inferior on tasks requiring intricate language patterns. They scored lower on all sub-tests on the Lorge-Thorndike battery and on the WISC vocabulary sub-test.

On verbal identification scores, those tests requiring the child to employ a noun or a verb to describe a picture, the lower-class children were inferior to middle-class children. Similar results were obtained on rhyming and fluency scores, auditory discrimination scores, and on concept sorting tasks.

In another study by John (1963) three groups of Negro children from lower, middle, and upper social classes were examined concerning patterns of linguistic and cognitive behavior. The three major levels of language behavior studied were labeling, relating, and

categorizing. The result of the study was that there were consistent class differences in language skills between groups of children from the same sub-culture but of different socio-economic class.

In another study, by Carson and Rabin (1966) three groups (30 in each group) of northern whites, northern Negro, and southern Negro children were matched for age, sex, grade placement, and level of verbal comprehension. They were compared on two vocabulary tests requiring verbal communication. The vocabulary tests were the WISC (Wechsler, 1949) and the words from the Full-Range Picture Vocabulary Tests. In accordance with the original prediction, the white children were superior to the Negro children, and the northern Negro children were superior to the southern Negro children on these two measures. In their conclusions, the investigators state:

Finally, it should be pointed out that verbal comprehension and verbal communication seem to be two different functions. Although the groups were equated on comprehension, they showed marked differences with respect to communication. The former task requires recognition within a certain context which is quite different from verbal communication and definition of a word in isolation and not in context. It would appear that differences between Negroes and whites on conventional intelligence tests and especially vocabulary sub-tests may be primarily due to failure to verbal communication rather than comprehension (p. 356).

### Other Factors Which Affect Language Development

In addition to general socio-economic class differences which appear to affect language development there seem to be a few others which might have some long-range effect and also might have some implications for this study. A study by Deutsch and Brown (1964) identifies the absenteeism of fathers in lower-class Negro homes as having an effect on the development of language. Quoting directly from the study:

One of the most striking differences between the Negro and white groups is the consistently higher frequency of broken homes and resulting family disorganization in the Negro group. . . . Since in the vast majority of cases, the home is broken by the absence of the father, this is used as a rough indicator of family cohesiveness. The absence or presence of the father has been shown in other studies to relate to need achievement and aspiration level especially of boys. . . . Significant differences are obtained on the race and presence of father variable with white children scoring higher than Negro, and children coming from homes where fathers are present, having significantly higher scores than children from fatherless homes (p. 29).

There is consistent trend in the Deutsch and Brown study showing that for males and females the I. Q. 's of children with fathers in the homes are always higher than those who have no father in the home.

Another variable which might relate to intelligence test performance is the amount and timing of schooling that a child has had.

The study by Deutsch and Brown (1964) found those children who had pre-school experience scored significantly higher on the I. Q.

tests than those who did not have a pre-school experience. The results are significant at the .01 level for pre-school experience and intelligence. Another interesting result of this study is that there were significant race differences in test performances (at the .05 level in the fifth grade), while there were none at the first grade. Presence or lack of pre-school experience at grade five, more highly differentiates intelligence test scores than it does at grade one. Nevertheless, at grade one, it is still differentiating ( $P = .10$ ) though not within the conventional limits of statistical significance.

Another factor which might seem to affect language development and verbal development in children is large families. In a study by Deutsch (1965) on the role of social class and language development and cognition, he states:

Family interaction data which we have gathered in both lower-class and socially deprived and middle-class groups indicate that as compared with middle-class homes, there is a paucity of organized family activities in a large number of lower-class homes. As a result, there is less conversation, for example at meals, as meals are less likely to be regularly scheduled family affairs (p. 80).

#### Special Study Review

The April, 1969 publication of the Reading Teacher, carries a study by Mary W. Wakefield, and M. J. Silvaroli (1969) which has significant implications in that the design was similar to the design of the present study. The authors believe that the oral language patterns

of lower socio-economic Negro, Spanish surname, and Anglo children, were sufficiently different from middle-class American children to cause difficulty in the learning process. The authors state that inattention of the lower socio-economic class children was due to inability to anticipate speech patterns. Consequently a study was conducted to determine whether there was a significant difference in speech patterns as measured by the Indiana Conference Scheme of 1959 linguistic techniques. The study attempted to gain insight into whether a difference existed and if it did, whether it was influenced more by ethnic or economic backgrounds of the children in the sub-groups.

A random sample of twenty beginning first-grade pupils who qualified as low socio-economic on Warner's Index of Status Characteristics, was chosen for each of the sub-groups. The Anglo sample was drawn from Flora-Thew school in Tempe, Arizona. The Negro and Spanish surname samples were drawn from schools in the Phoenix, Arizona area. The oral language of the subjects was recorded with a tape recorder. The children were brought into a room, shown pictures, and were asked by the investigators to, "tell stories about the pictures." The recorded language samples were transcribed and analyzed for the kinds of frequency of basic sentence patterns and for the kinds of frequencies of mazes.

An analysis of the results using analysis of variance for total sentence patterns revealed no mean score differences for any of the



groups. The analysis of variance was used to check for significant differences for specific sentence patterns. This comparison also revealed that there were no significant differences for any of the ethnic groups with the exception of one sentence pattern, which was entitled, "Requests or Commands." Spanish surname children used that pattern more frequently than Anglo or Negro children.

The final summary states that the economic background seems to have more of an influence on language than ethnic background. The final statement of these investigators is, "The results of this study suggest that rather than concentrate on unique materials for these ethnic groups, the schools should focus on their general adjustment to the school environment" (p. 663).

### Summary

In many of the early studies of language the investigators used "count" systems and related language development to maturational development. In recent years, the development of linguistic techniques has given language researchers better tools to evaluate language patterns and development.

Language and speech development are apparently directly related to mental development. Most of the studies show that if speech and language are hindered in early stages of development of a child's life, then intellectual development also is hindered. More recent studies of

language by Bernstein (1961) and Deutsch (1965) have drawn a relationship between socio-economic class and language development. Their studies indicate that lower socio-economic classes also have lower language development.

There appear to be other factors which affect language development, in addition to socio-economic level. These factors are: large families, the lack of pre-school training, or the timing of schooling, and the absence of a father in the home. There is some information reported by McCarthy (1951) regarding a study by Davis which shows that males tend to be more verbal than females. This claim is disputed by McCarthy, however. The controversy is rhetorical as far as this study is concerned. The very fact that Davis was able to stimulate more verbal responses by boys opens up some interesting possibilities for stimulating more verbalness for disadvantaged children.

A recent study by Wakefield and Silvaroli (1969), indicated no differences in oral language between Anglo, Spanish surname, and Negro children from lower-class groups. The design of the study is similar to the present one. The Wakefield, Silvaroli study would seem to reinforce some of the other studies which indicate that socio-economic level is more important than ethnic group in regard to development of language.

## CHAPTER III

### DESIGN OF THE STUDY

#### Selection of Cooperating School Districts

The author reviewed the 1959 report "Pilot Program for the Education of Migrant Children in Oregon" (Petrie, 1960) to identify those school districts which had had migrant populations in 1960. A preliminary list was made from this report. Then the author contacted the Migrant Section of the Oregon State Department of Education for verification of the districts that had anglo-migrant children.

A letter and self-addressed return envelope and form were developed and sent to 36 school districts. These districts were asked to complete the questionnaire and return, indicating their willingness to participate in the study and verify the dates when the sampling could be conducted.

Twenty-eight districts responded to the letter and questionnaire. Telephone calls were made to the other districts to see what had happened regarding answering the questionnaires and whether or not the district would be willing to participate. In most cases, the school administrators gave their approval and made arrangements over the telephone concerning the sampling. In several instances, telephone calls were made when the investigator was in the particular area to

check other schools for possible migrant children and in the case of Harper and Pioneer schools, last minute changes were made right at the time of the interviewing.

In the final analysis, seven districts with 14 schools participated in the study (see Appendix A).

### General Procedure for Establishing Rapport

In each building where there were anglo-migrant and anglo-resident children in the first grade, the investigator would report to the school building principal to explain the nature of the study and needed cooperation. The principal in turn usually would accompany the investigator to the first grade classrooms and very briefly explain the situation to the classroom teachers. Each classroom teacher gave the investigator about 15 minutes with the total group of children in the particular room, during which time, the teacher introduced the investigator to the group, explained that the investigator was there to play some games with them, and to work with some individual children in the room. After this general explanation, the investigator would talk to the group about what a nice group they were, asking them where they all lived, telling them where he lived and what he did for a living, telling them about his family and so on. After the initial "warm up" period, the investigator would tell the group that they were going to be playing some exciting games and doing some very interesting

things. The first thing that they were asked to do (after blank sheets of paper had been handed out) was to "Draw a picture of man, " the best picture of a man that they could. The children were then asked to put their name on the paper, and their age.

As the children were drawing the pictures of a man, the investigator moved about the room checking on the individuals to see that they understood the directions properly. As the children finished the drawing, these were picked up individually.

After all of the Goodenough "Draw a Man" tests had been collected, the investigator left the room and went to the station that was set up for administering the other part of the interview. If there were four migrant children in the classroom that had just previously been visited, four regular resident children who were most nearly similar in regard to other variables were also selected. For example, if there were two migrant boys and two migrant girls, two resident boys and two resident girls of approximately the same age as the migrants were selected. Before the actual testing took place, verification would be made of the ages of the children, their parents' names, parents occupations, and so on by checking with the school's official records. In order to verify this information, each one of the students was asked when the interview session started how old he was, what his daddy did for a living, where he lived, and whether or not this was his first year in school. By using this method, atypical types of students

were eliminated from the survey. Children from professional homes, such as doctors, lawyers, and teachers, were not included in the sample of the regular resident population. The rationale for excluding them was that those students should have better verbal ability because of the home background than the resident population at large. Likewise, migrant children who indicated that their fathers had been gainfully employed for over a year in agriculture in any one particular area, were also excluded from the study, the rationale being that they were not migrant students (by definition) for the purposes of the study.

### The Testing Situation

In most schools, the investigator had a room such as the health room, an unoccupied office, a curriculum room, a supply room, or an unused gymnasium for setting up the interview session. Usually, the set-up consisted of a small table and two chairs with a tape recorder sitting on the floor to the right of the interviewer and out of the sight of the student being interviewed. The microphone for the tape recorder was set on the table in an obscure position, usually alongside books or other materials placed on the table. Most of the students did not even notice the microphone nor did they seem to be concerned about it or the tape recorder. A few students who did ask, "What is that?" were told that they would be told about it after they were all

through. Most of them accepted this and the appearance of the microphone seemed to have very little effect whatsoever on the student's ability to respond. Most of the children were very cooperative and unassuming.

After rapport had been established, students were shown the stack of twelve picture cards, and given general instructions as follows: "I am going to show you some pictures. I want you to look at the pictures and tell me everything that you can about them. Are you ready?" If the student answered in the affirmative, then picture number one would be shown. At this time the student would proceed to tell what was happening. When he quit talking he was asked, "Is there anything else that you want to tell me about the picture?" This phrase was then repeated until the student indicated that he did not want to talk any more about that particular picture. The same procedure was used for pictures number two through number 12.

The next student would respond to the pictures 12 through number one in order of sequence. Consequently, every other student had the pictures presented in reverse order. The rationale for this procedure is that if patterns did develop for particular pictures when they were analyzed, it would more likely be because of a genuine difference rather than because of a particular order of presentation on the part of the examiner.

At the end of the twelve cards, the students were thanked for

their help and participation, and the examiner walked them back to the classroom.

### Procedure for Collection of Data

Collection of data was accomplished by means of individual testing in tape recorded sessions. The sample consists of 71 Anglo-migrant and Anglo-resident children in the first grade. The factors of sex and age were matched as closely as possible for both groups at the time of the interviews. The background of the parents of both groups was screened to eliminate atypical types.

Both groups were given Goodenough Draw-A-Man tests and identified as to whether they were young or old by dividing them into two groups. The two groups were; November 16, 1966 to May 15, 1967 and May 16, 1967 to November 15, 1967. The birth date of each child was checked to see which group he would be placed in for statistical comparison. A Goodenough test and the verbal response stimulator pictures were given to all subjects within the first three months of the start of school in the Fall of 1967.

The subjects were shown 12 pictures from the Primary A, Section II level of the Davis-Eels Games and were asked to "tell about the picture." "Tell all you know about the picture." This section of the interview was called the "free response." In addition to the free response, there were as many additional open-ended questions



applied to each picture as was necessary to elicit as complete an account as possible from each student.

### Selection of Instruments and Devices

Test of General Mental Ability. The Goodenough Draw-A-Man Test was selected from an assortment of general ability tests because it appeared to be the least dependent on language and verbal ability (Britton, 1954). Further, it is designed for use with children from the pre-school-primary age bracket. Cultural differences likely to occur in the drawings of the children, such as clothing differences portrayed, do not affect the scoring of the test (Weidenaw and Noller, 1950). The test is easy to administer and does not appear to be a "test" to the children taking it.

The Goodenough Draw-a-man test has a high correlation with the Stanford Binet. Williams (1935) reports a mental age correlation of  $+ .801 \pm .024$ . Williams reports two other correlations, one for I.Q. which shows the correlation to be  $+ .741 \pm .016$ , and another one showing a correlation between mental age on the Stanford Binet and Goodenough Draw-a-man  $+ .717 \pm .048$ . In his summary he states, "The test is comparable in validity, reliability and objectivity to other mental ability tests for young children" (p. 656).

Verbal Response Stimulator. It was necessary to select some pictures which would elicit verbal responses from the children and

which were relatively culture free. Twelve pictures were selected arbitrarily from the Davis-Eels Games--Form A, Level I. The pictures were selected for presentation to the children to elicit responses which could be tape recorded. The Davis-Eels pictures were selected because:

1. The cartoon-like caricatures should have approximately the same degree of acceptance with both groups of children.
2. The test is reported to eliminate . . . socioeconomic differences and inequities (Buros, 1959, p. 327).
3. The 12 pictures selected appeared to give ample opportunity for verbal responses which could be evaluated in terms of the desired variables.

In his review of the Davis-Eels Games, in the Fifth Mental Measurement Yearbook, J. P. Guilford stated, "In the selection of items considerable attention was given to ensure that they were equally within the sphere of experience of all groups" (Buros, 1959, p. 327).

Dolch Easy and Hard Word Tests. After reviewing various word lists the Dolch Easy and Hard Word lists were selected because they seemed to best fit the design of the study. The Dolch list is manageable as far as length and provided a means to arrive at identification of vocabulary problems and limitations which would have an effect on the ability to perform in reading and other related Language Arts subjects in school.

### Recording the Responses

A tape recorder was placed in a position where it would not be obvious to the child. It was used to record verbal responses elicited through the verbal response stimulator pictures. The tape recorded responses were transcribed and subsequently were analyzed for the length of sentence, level of vocabulary, and sentence complexity.

### Transcribing the Data

It took approximately two and one-half months to tape record all of the students in the various school districts throughout the state. This was done in the months of September, October, and November, 1967. After recording all of the responses on tape, they were transcribed for analysis. The services of a typist were secured. She was trained to transcribe the tapes, verbatim. She used a phonetic approach for the transcribing.

The tapes were spot-checked with the transcriptions to insure their accuracy. It took approximately six months to transcribe the original tapes and to do the preliminary work to prepare the material for the actual linguistic analysis.

### Analysis of Transcripts

The transcripts were compared with the Dolch Easy and Hard Word Lists to determine vocabulary levels. They were also checked to

determine the number of words used in the sentences, and to determine the complexity of the sentences. The sentences were analyzed for length and complexity using linguistic techniques developed by Strickland (1962).

### Treatment of the Data

For each of the groups tested, the means and medians for the Goodenough scores and verbal responses were compared. Means and medians of the scores on the tests of verbal responses are compared for the two groups and tested for significance by the analysis of variance technique. Some information was crossed-checked for significance using the "t" and "t'" tests where this procedure seemed to best meet the requirements of the design of the study.

### Evaluative Criteria for Analysis of Verbal Transcriptions of the Speech Patterns

The problem of analysis of speech patterns and the subsequent development of evaluative criteria for the transcripts of verbal responses of anglo-migrant and anglo-resident children was a difficult one. Some of the early studies analyzed by McCarthy (1951) used a straight grammatical approach for analysis of language, whereas the more recent approaches, such as Strickland's (1962) have stressed the linguistic approach to the analysis.

At the suggestion of various members of the committee, and after reviewing, in depth (with Robert Kiekel, Director of the Language Laboratory, O. S. U. ), the possible approaches to the analysis of the verbal speech patterns gathered for the study, it appeared that the linguistic approach would be the most suitable for the analysis of the data.

Further analysis of available studies and research disclosed one study in particular that met the requirements for analysis of the material. The study and accompanying research is: The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children, by Ruth G. Strickland, published by The School of Education, University of Indiana, 1962. The study and accompanying research were funded by a U. S. Office of Education Research Grant. Five linguistic specialists (sponsored by the U. S. Office of Education) conferred at Indiana University in the summer of 1959 and helped develop, refine, and approve the linguistic approach to language analysis used in the study.

Strickland's (1962) study is concerned with comparing the relationship of language to reading textbooks; whereas this study is concerned with comparing the verbal responses of anglo migrant and anglo resident children. The mechanics of linguistic analysis needed for both studies is the same, but the objectives of each study

are obviously quite different.

The original Strickland study has two levels of analysis. Upon close investigation, it was determined that Level I analysis was all that was necessary or desirable for this particular study. Level II consists of a further breakdown of the structure of Level I. Inasmuch as these further refinements were not needed for general interpretation, they were excluded.

### Linguistic Definitions (Strickland, 1962)

In order to facilitate the understanding of linguistic analysis, the following definitions are provided.

- A. Morphology - The study of the composition of words.
  - 1. Morphemes - The smallest meaningful part of an utterance.
  - 2. Phonemes - Minimal sound units which occur in the language and make differences in meaning.
- B. Syntax - The study of the composition of constructions larger than words . . . phrases, clauses, sentences.
  - 1. Tagmeme - The way in which morphemes are grouped together in sequence and their meaningful relationships.
  - 2. Slot - A grammatical position or function (i. e. subject) which is filled by a list of mutually substitutable items.
  - 3. Class - The list of items which occur in a given slot (i. e. nouns).
  - 4. Movables - Are adverbials that appear any place in a sentence and tell when, where, how, or why.
- C. Maze - Any part of a phonological unit which is not syntactically or meaningfully pertinent.
  - 1. Noises - Unintelligible sounds such as "ah," "er," and the like.

2. Holders - Used to hold attention. Such as "well, " "you see, " "now uh, " and "and. "
3. Repeats - Repetition of words such as "you-you, " "I think-I think. "

The Key to the Syntactic Analysis (Strickland, 1962)

The following is the key to the symbols used in the diagram of Level I.

Level I. Concerned with: (a) the scansion of sentences into mixed slots and movables; (b) the separation of the utterances and non-structural elements from the structural elements of the sentence; and (c) the tabulation of the fixed slots, the movables, and the sentence connectors.

- 1 The subject (the subject slot) of the sentence which may be a word, phrase, a clause, or a combination of phrases and clauses, e. g. ,

Mr. Brown is my friend.

1

- 2 The verb slot of the sentence which may be a verb or a compound predicate, e. g. ,

Mr. Brown will give his students piano lessons next

2

Monday. He went and bought the paper.

2

- 2b A verb slot which denotes passive verbs, verbs of the to be class, or copulative verbs, e. g. ,

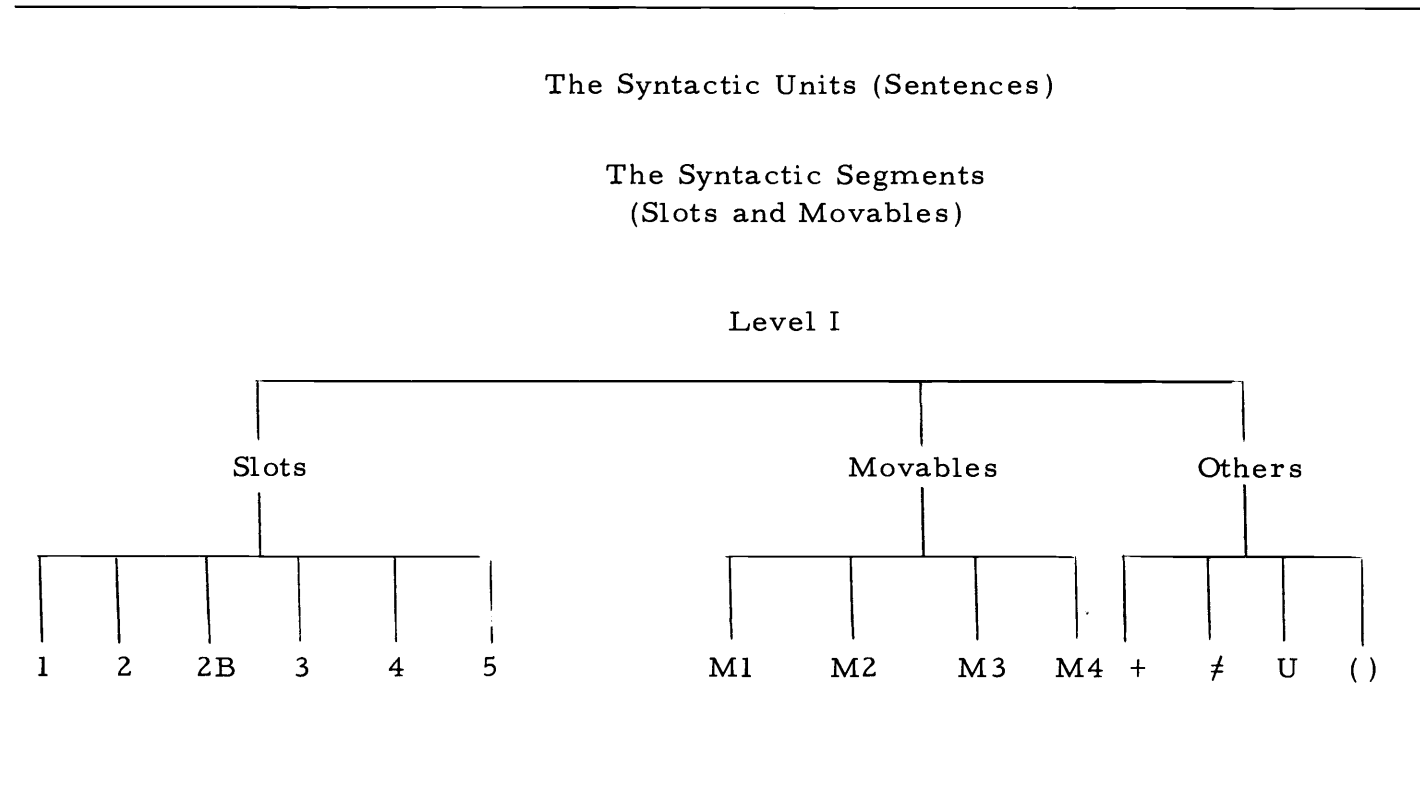
He is very happy with his family now.

2b

There was a car on the road.

2b

Table 1. The Scheme and the Relationship of Class, Movables, and Mazes in Level I.  
(Strickland, 1962)





- 3 The inner complement (an indirect object) or a sentence, e. g. ,  
 Mr. Brown gives his students piano lessons on Saturday.  
 3
- 4 The outer complement (a direct object) of a sentence, e. g. ,  
 Mr. Brown gives his students piano lessons on Saturday.  
 4
- 5 The predicate nominative of the class of the verb to be, e. g. ,  
 Mr. Brown is very happy with his family now.  
 5
- M Those syntactic segments which "move" have been grouped into five subclasses.
- M1 The "there" group (an expression of place) of a sentence, e. g. ,  
 Mr. Brown gives his students piano lessons at home.  
 M1
- M2 The "how/so" group (an expression of manner), e. g. ,  
 He ran quickly down the street.  
 M2  
 Mr. Brown gives his student piano lessons at home regularly.  
 M2
- Some types do not lend themselves to movability, e. g. ,  
 We just arrived.  
 M2
- M3 The "then" group (an expression of time) of a sentence, e. g. ,  
 Mr. Brown gives his students piano lessons at home regularly on Saturdays.  
 M3
- M4 The "because/if" group (an expression of purpose or cause) e. g. ,  
 Mr. Brown gives his students piano lessons at home because he is comfortable there.  
 M4
- M5 A preposition plus the slot 3 (indirect object), e. g. ,

Mr. Brown gives piano lessons to his students on  
M5  
on Saturday.

- + A connector which joins structural sentences or sentence segments together, such as and, but, etc., e. g.,

Last week a group of Persian students came to the United States and many of them visited Washington.

+

- ≠ A connector, such as until, because, for, so, or, and if, which joins a causative subordination to the rest of a sentence, e. g.,

His father hates dogs so he told them to give it away.

≠

- U A short utterance may be a word or a word-group which holds meaning and usually is accompanied with falling, fading, intonation, e. g.,

Did you see your friend yesterday? Yes

U

- () Nonstructural elements which denote a maze, hesitation, false start, primer, or onomatopoeia are placed between parentheses, e. g., (See definition of maze)

(Our uh) our dog (well he) got away.

### Explanation of Interpretations

The study calls for a comparison of: the length of sentences, the complexity of sentences, and the vocabulary level.

A. The length of sentences. The length of a sentence was determined by linguistic analysis. After a sentence was transcribed, a count of the number of morphemes in the sentence was made.

Example: Well there's this boy and he has a nickel.

The sentence has 10 morphemes. All of the sentences in the study would be counted the same way and an average arrived at for each child for each picture.

A statistical analysis, using analysis of variance technique, was applied to a comparison of anglo-resident and anglo-migrant children including the relationship of sex, intelligence (as measured by the Goodenough Draw-A-Man Test) and age, to sentence length.

B. The complexity of sentences. The adoption of a linguistic approach to analysis of language indicates that complexity can best be measured in terms of the amount of modifiers, adverbials, adjectives, etc., within a sentence.

The linguistic approach adopted provides for a comparison of the movables (adverbials) and various phrases (noun, verb, etc.) combinations used in language. These have been identified, tabulated and compared statistically to determine the relationship to the independent variables.

C. Vocabulary Level. After considerable analysis of various word lists it was decided that the Dolch Easy and Dolch Hard Word Lists were suited to the design of this study.

The purpose of comparing vocabulary levels was to determine if migrants and residents showed any differences which might affect their ability to perform satisfactorily in various school situations such as reading.

The Dolch List is generally used as an indicator of sight words needed to perform at a beginning level of reading. Although the Dolch List is designed to be used to develop sight vocabulary, it seems reasonable to assume that if a student does not have the words in his spoken vocabulary (as he uses it in regular conversation), he probably will need special help (or at least awareness of need on the part of the teacher), to learn these words in order to be successful in reading and writing activities.

The Dolch list was manageable and provided the type of information which was desired for purposes of the analysis of verbal responses.

#### Development of the Statistical Design

The data were transcribed from the tapes and scored. The means, medians, and totals were recorded and the types and lengths of sentences were categorized and averaged. The data were then transferred to punched cards and thence to magnetic disc storage in the Computer Center.

The data were analyzed with the aid of a previously written computer program and received the computer print-out sheets which indicated the tests of significance of the various factor combinations of the independent variables on each of the observed variables. The first run of the data produced much valuable information concerning migrants versus residents in total groups; males versus females in

total groups; and older versus younger in total groups. There were also a number of three factor interactions such as a combined analysis of sex, younger versus older, and migrant versus residents which appeared to be significant but which were virtually impossible to interpret.

Oregon State University Department of Statistics had previously developed a computer program for general least squares analysis of variance for unequal groups. This program was used for both the initial run and the second run of the data.

The problem of three-factor interactions led the investigator and members of the statistics department to the conclusion that it would be better to separate male from female, migrant from resident, and younger from older and run the data again. This was done and information received supported the original run. However the separation of male from female, younger from older, and resident from migrant made some of the groups too small to produce significant results which were valid or reliable. Consequently, the data from the second run were eliminated from the study.

## CHAPTER IV

### RESULTS OF THE STUDY

As previously indicated in Chapter III, the Analysis of Variance Technique was used to determine if there were any significant differences between anglo-migrant and anglo-resident children. The statistical model was designed to separate the various factors to be analyzed between groups and to compare each one on an individual basis. The statistical design does not lend itself to within group comparisons. Consequently, within group comparisons are not included in the tables that accompany the data.

For the purposes of interpretation it seems best to organize the results of the study around the main questions to be answered by the study:

1. Whether or not there are any differences between anglo-migrants and anglo-resident children in regard to verbal responses.
  - a. Vocabulary level (according to Dolch Hard and Easy Word Lists)
  - b. Types of Sentences (structure)
  - c. Number and length of sentences (as determined by morpheme count)
2. Does the relationship between general ability and verbal

responses differ between anglo-migrant and anglo-resident children?

Only the results of the study which showed significant differences are included in this study. There are a total of thirty-seven significant differences. The significant differences are reported first, as they were compared, without I. Q. being considered as a factor. The results of comparing vocabulary level (Dolch Hard and Dolch Easy words) without I. Q. are reported in Table 2.

The significant results related to the types of sentences without I. Q. being considered are reported in Tables 3, 4, 5, 6, 7, 8, and 9.

The significant results related to the length of sentences without the factor of I. Q. being considered are reported in Tables 10, 11, 12, 13, 14, 15, 16, 17, and 18.

The significant results related to Dolch Hard and Easy words when I. Q. was considered are reported in Tables 19 and 20.

The significant results related to the types of sentences used when I. Q. was considered are reported in Tables 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 34.

The significant results comparing I. Q. which are directly related to verbal responses are reported in Tables 35 and 36.

The significant differences of I. Q. scores for males and females are reported in Tables 37 and 38.

The tables refer to specific sentence structures (15, 41, 52) and specific pictures (2, 3, 4) that produced significant results. The

sentence structures and picture numbers relate to the numbers that these particular sentence structures and pictures had when the data was being sorted and specific counts were being made. For example, prior to analysis of the sentence structure, a tentative key was set up allowing for sixty-six different sentence patterns. The fifteenth pattern happened to be one of the ones that received enough responses so as to make the results significant. A complete listing of the sentence patterns and pictures appear are in Appendix C and D respectively.

The significant "F" ratio is underlined in each table for clarification purposes.

#### Differences in Regard to Vocabulary Level

The total Dolch words used in both lists (Hard and Easy) showed that the anglo-resident children used more Dolch words than the anglo-migrant children did. The "F" ratio is significant at the .05 level.

Table 2. Comparison of Residents and Migrants with Reference to Dolch Words

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.7925		
Reg	8	1.6445	2.3481	87.544
Between Groups	1	9.6234	9.6234	<u>4.098</u>
Err	63	1.4793	2.3481	



The "F" ratio when males and females were compared was 3.995. This approaches significance since an "F" of 4.0012 is significant at the .05 level.

#### Differences in Type of Sentence (Structure)

Residents use the structure in sentence number 15 significantly more than migrants do. The sentence is scored 1-2-M5 (subject-verb-indirect object). A typical sentence is "This boy is talking to these two boys." The "F" ratio is significant at the .01 level.

Table 3. Comparison of Residents and Migrants with Reference to Sentence Structure 15

Source	DF	Sum of Squares	Mean Square	F
Total	71	5.5000		
Reg	8	2.8748	3.5935	8.624
Between Groups	1	3.397	3.397	<u>8.152</u>
Err	63	2.6251	4.1669	

Males use sentence structure number 41 more than females do. The sentence structure for sentence number 41 is scored as 1-2B-5 (subject-passive "to be" verb-predicate nominative "to be" verb). Typical sentence structure is "The boy is getting damp." The "F" ratio is significant at the .05 level.

Table 4. Comparison of Males and Females with Reference to Sentence Structure 41

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.8610		
Reg	8	1.0234	1.2792	9.622
Between Groups	1	5.8911	5.8911	<u>4.431</u>
Err	63	8.3758	1.3294	

Residents also use the sentence number 41 more often than migrants. The "F" ratio is significant at the .05 level.

Table 5. Comparison of Residents and Migrants with Reference to Sentence Structure 41

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.8610		
Reg	8	1.0234	1.27927	9.622
Between Groups	1	7.2232	7.2232	<u>5.433</u>
Err	63	8.3758	1.3294	

Residents use sentence structure number 52 more frequently than migrants. Sentence structure number 52 is typified by the following sentence, "They're on the sidewalk." The sentence is scored as a 1-2B-M1 (subject-passive verbs-"there" group). The "F" ratio is significant at the .01 level.

Table 6. Comparison of Residents and Migrants with Reference to Sentence Structure 52

Source	DF	Sum of Squares	Mean Square	F
Total	71	4.2100		
Reg	8	1.7902	2.2378	5.826
Between Groups	1	3.831	3.831	<u>9.976</u>
Err	63	2.4197	3.8408	

Males use sentence structure number 63 more frequently than females. Typical sentence structure for sentence number 63 is, "Yes, " an utterance with meaning scored as (u). The "F" ratio is significant at the .05 level.

Table 7. Comparison of Males and Females with Reference to Sentence Structure 63

Source	DF	Sum of Squares	Mean Square	F
Total	71	2.2447		
Reg	8	1.1434	1.4293	8.177
Between Groups	1	7.7489	7.7489	<u>4.433</u>
Err	63	1.1012	1.7479	

Older children use sentence structure 63 more than younger children do. The "F" ratio is significant at the .05 level.

Table 8. Comparison of Older and Younger Children with Reference to Sentence Structure 63

Source	DF	Sum of Squares	Mean Square	F
Total	71	2.2447		
Reg	8	1.1434	1.4293	8.177
Between Groups	1	9.2287	9.2287	<u>5.280</u>
Err	63	1.1012	1.7479	

Residents use sentence structure number 65 more than migrants do. Typical sentence structure for sentence number 65 is "And there's a pen there." Scored as 2B-1-M1 (passive verb-subject-"there" group). The "F" ratio is significant at the .05 level.

Table 9. Comparison of Residents and Migrants with Reference to Sentence Structure 65

Source	DF	Sum of Squares	Mean Square	F
Total	71	7.6600		
Reg	8	2.4494	3.0617	3.702
Between Groups	1	4.1652	4.1652	<u>5.036</u>
Err	63	5.2105	8.2707	

Differences in Number of Sentences and Mean  
Sentence Length Without General Ability

The number of sentences for picture number 2 showed males to use more sentences than females. Picture number 2 shows a boy and

a girl holding hands standing on a curb waving. The "F" ratio is significant at the .05 level.

Table 10. Comparison of Males and Females with Reference to Number of Sentences for Picture 2

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.483		
Reg	8	1.0606	1.3258	19.777
Between Groups	1	4.068	4.068	<u>6.069</u>
Err	63	4.2234	6.7038	

The number of sentences for picture number 3 showed males to use more sentences than females. Picture number 3 shows a woman spanking a boy. In the background there is a broken window and a baseball bat on the ground. The "F" ratio is significant at the .01 level.

Table 11. Comparison of Males and Females with Reference to Number of Sentences for Picture 3

Source	DF	Sum of Squares	Mean Square	F
Total	71	7.0900		
Reg	8	5.5525	6.9406	28.440
Between Groups	1	2.0986	2.0986	<u>8.599</u>
Err	63	1.5375	2.4404	

Residents also used more sentences than migrants for picture number 3. The "F" ratio is significant at the .05 level.

Table 12. Comparison of Residents and Migrants with Reference to Number of Sentences for Picture 3

Source	DF	Sum of Squares	Mean Square	F
Total	71	7.0900		
Reg	8	5.3525	6.9406	28.440
Between Groups	1	9.8586	9.8586	<u>4.040</u>
Err	63	1.5375	2.4404	

Males use more sentences than females when responding to picture number 4. Picture number 4 shows a woman on her hands and knees on the floor with a bone in her hand. In bed are two children with a dog. The "F" ratio is significant at the .005 level.

Table 13. Comparison of Males and Females with Reference to Number of Sentences for Picture 4

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.0380		
Reg	8	8.3273	1.0409	31.949
Between Groups	1	3.5258	3.5258	<u>10.822</u>
Err	63	2.0526	3.2580	

Residents use more sentences than migrants in responding to picture number 6. Picture number 6 shows a man sitting down on the

porch steps with a boy over his knee. The man is spanking the boy.

The "F" ratio is significant at the .05 level.

Table 14. Comparison of Residents and Migrants with Reference to Number of Sentences for Picture 6

Source	DF	Sum of Squares	Mean Square	F
Total	71	9.4300		
Reg	8	6.5336	8.1671	17.765
Between Groups	1	2.0344	2.0344	<u>4.425</u>
Err	63	2.8963	4.5973	

The mean sentence length for older children is longer than for younger children in responding to picture number 3. Picture number 3 shows a woman holding a boy over her knee and spanking him. In the background is a broken window and a baseball bat laying on the ground. The "F" ratio is significant at the .05 level.

Table 15. Comparison of Older and Younger Children's Mean Sentence Length for Picture Number 3

Source	DF	Sum of Squares	Mean Square	F
Total	71	9.9361		
Reg	8	6.5404	8.1755	15.168
Between Groups	1	2.5751	2.5751	<u>4.778</u>
Err	63	3.3957	5.3900	

The mean sentence length for males is longer than for females responding to picture number 6. Picture number 6 shows a man sitting on a step with a boy over his knee who he is spanking. The "F" ratio is significant at the .05 level.

Table 16. Comparison of Males and Females Mean Sentence Length for Picture 6

Source	DF	Sum of Squares	Mean Square	F
Total	71	8.0094		
Reg	8	5.2027	6.5034	14.598
Between Groups	1	2.2069	2.2069	<u>4.954</u>
Err	63	2.8066	4.4550	

The males had a mean sentence length longer than females for picture number 7. Picture number 7 shows 4 boys sitting and standing around with a baseball bat, gloves, and ball on the ground. In the background is a woman yelling. In the foreground, a boy is hiding behind a bush. The "F" ratio is significant at the .05 level.

Table 17. Comparison of Males and Females Mean Sentence Length for Picture 7

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.1814		
Reg	8	8.0386	1.0048	16.766
Between Groups	1	2.5974	2.5974	<u>4.334</u>
Err	63	7.7757	5.9933	



The mean sentence length for residents is longer than for migrants for picture number 11. Picture number 11 shows three boys standing outside of a store. They are reaching in their pockets for something. In the background is a sign that says, "Sale" with some kites, balls, airplane, and a gun in the window of the store. The "F" ratio is significant at the .05 level.

Table 18. Comparison of Residents and Migrants Mean Sentence Length for Picture Number 11

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.4585		
Reg	8	1.0213	1.2767	18.399
Between Groups	1	2.8999	2.8999	<u>4.179</u>
Err	63	4.3717	6.9393	

Verbal Responses Compared to General  
Ability - Vocabulary Level

Males use more Dolch Easy words than females. The difference is significant at the .05 level.

Table 19. Comparison of Males, Females, and General Ability with Reference to Dolch Easy Words

Source	DF	Sum of Squares	Mean Square	F
Total	71	9.7527		
Reg	9	9.0079	1.0008	83.324
Between Groups	1	5.0272	5.0272	<u>4.185</u>
Err	62	7.4474	1.2011	

Males used more Dolch Total (Hard-Easy) words than females.

The "F" ratio was significant at the .05 level.

Table 20. Comparison of Males, Females, and General Ability with Reference to Total Dolch Words

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.7925		
Reg	9	1.6470	1.8300	78.018
Between Groups	1	1.1041	1.1041	<u>4.707</u>
Err	62	1.4543	2.3457	

Verbal Responses Compared With General  
Ability - Types of Sentences

Residents used the sentence structure in sentence number 15 significantly more than migrants. Sentence number 15 is scored 1-2-M5 (subject-verb-indirect object). A typical sentence for sentence number 15 is "This boy is talking to these two boys." The "F" ratio is significant at the .05 level.

Table 21. Comparison of Residents, Migrants, and General Ability with Reference to Sentence Structure 15

Source	DF	Sum of Squares	Mean Square	F
Total	71	5.5000		
Reg	9	3.0420	3.3800	8.526
Between Groups	1	1.8232	1.8232	<u>4.599</u>
Err	62	2.4579	3.9644	

Males use sentence structure number 41 more than females. Sentence number 41 is scored 1-2B-5 (subject-passive "to be" verb-predicate nominative "to be" verb). A sample of sentence number 41 is: "The boy is getting damp." The "F" ratio is significant at the .05 level.

Table 22. Comparison of Males, Females, and General Ability with Reference to Sentence Structure 41

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.8610		
Reg	9	1.0239	1.1377	8.427
Between Groups	1	5.8653	5.8653	<u>4.344</u>
Err	62	8.3706	1.3501	

Residents use sentence structure 41 more than migrants. The "F" ratio is significant at the .05 level.

Table 23. Comparison of Residents, Migrants, and General Ability with Reference to Sentence Structure 41

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.8610		
Reg	9	1.0239	1.1377	8.427
Between Groups	1	6.1712	6.1712	<u>4.571</u>
Err	62	8.3706	8.3706	

Residents used sentence structure number 52 more frequently than migrants. Number 52 is typified by the following sentence: "They're on the sidewalk," and is scored as a 1-2B-M1 (subject-passive:verb-"there" group). The "F" ratio is significant at the .01 level.

Table 24. Comparison of Residents, Migrants, and General Ability with Reference to Sentence Structure 52

Source	DF	Sum of Squares	Mean Square	F
Total	71	4.2100		
Reg	9	1.8006	2.0007	5.149
Between Groups	1	3.0983	3.0983	<u>7.973</u>
Err	62	2.4093	3.8859	

Sentence number 63 is used more by older children than by younger children. Typical sentence structure for number 63 is "Yes" - an utterance with meaning (scored as [u]). The "F" ratio is significant at the .05 level.

Table 25. Comparison of Younger and Older Children and General Ability with Reference to Sentence Structure 63

Source	DF	Sum of Squares	Mean Square	F
Total	71	2.2447		
Reg	9	1.1711	1.3013	7.516
Between Groups	1	8.5461	8.5461	<u>4.936</u>
Err	62	1.0735	1.7314	

Verbal Responses Compared With General Ability -  
Number of Sentences Per Picture

Males use more sentences than females in response to picture number 2. Picture number 2 shows a boy and a girl standing on a curb waving to something outside of the picture. The difference is significant at the .05 level.

Table 26. Comparison of Males, Females, and General Ability with Reference to the Number of Sentences for Picture 2

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.4830		
Reg	9	1.0645	1.1828	17.526
Between Groups	1	3.4044	3.4044	<u>5.044</u>
Err	62	4.1843	6.7489	

Males use more sentences in responding to picture number 3 than do females. Picture number 3 shows a woman holding a boy over her knee and spanking him. There is a baseball bat on the ground

and a broken window in the background. The "F" ratio is significant at the .01 level.

Table 27. Comparison of Males, Females, and General Ability with Reference to the Number of Sentences for Picture 3

Source	DF	Sum of Squares	Mean Square	F
Total	71	7.0900		
Reg	9	5.5527	6.1696	24.883
Between Groups	1	2.0371	2.0371	<u>8.216</u>
Err	62	1.5372	2.4794	

Males use more sentences than females in responding to picture number 4. Picture number 4 shows a woman on her hands and knees on the floor with a bone in her hand whistling. In the bed are two children and a dog. The "F" ratio is significant at the .01 level.

Table 28. Comparison of Males, Females, and General Ability with Reference to the Number of Sentences for Picture 4

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.0380		
Reg	9	8.4161	9.3512	29.522
Between Groups	1	2.7010	2.7010	<u>8.527</u>
Err	62	1.9638	3.1675	

Residents use more sentences in responding to picture number 6 than do migrants. Picture number 6 shows a man sitting on a step

with a boy over his knee who he is spanking. The "F" ratio is significant at the .05 level.

Table 29. Comparison of Residents, Migrants, and General Ability with Reference to the Number of Sentences for Picture 6

Source	DF	Sum of Squares	Mean Square	F
Total	71	9.4300		
Reg	9	6.5340	7.2600	15.543
Between Groups	1	1.8904	1.8904	<u>4.047</u>
Err	62	2.8959	4.6708	

Older children have a longer mean sentence length than do younger children in responding to picture number 3. Picture number 3 shows a woman holding a boy over her knee and spanking him. In the background are a baseball bat and a broken window. The "F" ratio is significant at the .05 level.

Verbal Responses Compared With General Ability--  
Mean Sentence Length Per Picture

Table 30. Comparison of Older and Younger Children with General Ability with Reference to the Mean Sentence Length for Picture 3

Source	DF	Sum of Squares	Mean Square	F
Total	71	9.9361		
Reg	9	6.5690	7.2989	13.440
Between Groups	1	2.4542	2.4542	<u>4.519</u>
Err	62	3.3670	5.4307	

The mean sentence length for males is longer than for females in responding to picture number 6. Picture number 6 shows a man sitting on a step with a boy over his knee who he is spanking. The "F" ratio is significant at the .05 level.

Table 31. Comparison of Males, Females, and General Ability with Reference to the Mean Sentence Length for Picture 6

Source	DF	Sum of Squares	Mean Square	F
Total	71	8.0094		
Reg	9	5.3438	5.9376	13.811
Between Groups	1	2.8846	2.8846	<u>6.710</u>
Err	62	2.6655	4.2992	

The mean sentence length of males is significantly longer than for females in response to picture number 7. Picture number 7 shows 4 boys standing under a tree with a baseball bat and glove on the ground. In the background there is a figure of a woman yelling. One of the boys is hiding behind a bush. The "F" ratio is significant at the .05 level.



Table 32. Comparison of Males, Females, and General Ability with Reference to the Mean Sentence Length for Picture 7

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.1814		
Reg	9	8.1709	9.0788	15.449
Between Groups	1	3.2905	3.2905	<u>5.599</u>
Err	62	3.6435	5.8766	

The mean sentence length for males is significantly more than for females in responding to picture number 9. Picture number 9 shows a man and a woman and three children sitting around a table eating dinner and opening the various presents. The "F" ratio is significant at the .05 level.

Table 33. Comparison of Males, Females, and General Ability with Reference to the Mean Sentence Length for Picture 9

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.3152		
Reg	9	8.4719	9.4132	12.470
Between Groups	1	3.5387	3.5387	<u>4.688</u>
Err	62	4.6801	7.5485	

The mean sentence length for males is significantly greater than for females in responding to picture number 12. Picture number 12 shows a boy with a coin in his hand standing in front of an ice cream

store. In the background a girl is waving to the boy. The "F" ratio is significant at the .05 level.

Table 34. Comparison of Males, Females and General Ability with Reference to the Mean Sentence Length for Picture 12

Source	DF	Sum of Squares	Mean Square	F
Total	71	1.9188		
Reg	9	1.0687	1.1874	8.660
Between Groups	1	5.5155	5.5155	<u>4.022</u>
Err	62	8.5016	1.3712	

Differences Between General Ability and  
Verbal Responses--Mazes

When the Goodenough test scores of general ability were compared with verbal responses the following results were obtained.

There is a difference in the number of Maze three repeats used by children in the study. The higher the Goodenough scores the more they used Maze three. Maze three is typified by repeats--such as "I think, I think." The "F" ratio is significant at the .01 level.

Table 35. Comparison Between General Ability and Maze 3 Repeats

Source	DF	Sum of Squares	Mean Square	F
Total	71	8.5640		
Reg	9	4.1846	4.6495	6.583
Between Groups	1	6.9684	6.9684	<u>9.865</u>
Err	62	4.3793	7.0635	

The average of three different mazes showed that as Goodenough scores became higher the children used more mazes. The "F" ratio is significant at the .05 level.

Table 36. Comparison of General Ability and the Average of the Mazes

Source	DF	Sum of Squares	Mean Square	F
Total	71	5.7870		
Reg	9	4.5332	5.0369	24.907
Between Groups	1	1.079	1.079	<u>5.340</u>
Err	62	1.2538	2.0223	

Differences with Regard to Vocabulary When  
Goodenough Scores are Considered

The mean Goodenough scores of females are significantly higher than for males. The "F" ratio at 6.728 is significant at the .05 level.

When Goodenough I. Q. scores are taken into account, differences tend to be greater than when the factor of I. Q. is not considered.

There were no significant differences between the means of Goodenough ability scores for migrant boys and resident boys. Resident girls' mean ability scores are significantly higher than migrant girls' Goodenough scores at the .01 level of significance using the "t" test.

Table 37. I. Q. Comparisons for Males

	Males	Residents	Migrants
Total	37	21	16
Mean	93.939	97.190	90.688

Table 38. I. Q. Comparisons for Females

	Females	Residents	Migrants
Total	34	18	16
Mean	100.534	108.944	92.125

This is interpreted to mean that when the factor of Goodenough ability was taken into consideration statistically, differences in the scores made by males tended to be more significant than if the factor of Goodenough scores as such, were not included. This implies that Goodenough scores have little if any, relationship to verbalness as described in the study.

## CHAPTER V

## DISCUSSION OF THE RESULTS OF THE STUDY

Discussion on Vocabulary Level Differences

When the factor of I. Q. (as measured by Goodenough Draw-A-Man Test) is not considered or taken into account, we find that (to describe the pictures) resident children use significantly more Dolch words than migrant children in their vocabulary. We also find that males come very close to being superior to females in the use of Dolch words in responding to the pictures.

When the factors of a larger number of residents (39) compared to migrants (32) and higher mean Goodenough scores for resident girls are allowed for, then we find the results more significant in favor of males over females on the Dolch Easy words and on the combined total of Dolch Hard and Easy words. Consequently, even though the mean I. Q. level for resident girls is significantly higher than that of resident boys and migrant boys, the boys tend to use more Dolch words in their vocabulary.

It is interesting to note that there were no significant differences between the groups in terms of Dolch Hard words. One could infer that children have not acquired these words in their spoken vocabulary yet. Therefore Dolch Hard words may be

attributed to a maturational level rather than to cultural or some other differences. A difference in the use of Dolch Easy words and Total Dolch words favoring males over females might suggest that there are some other factors affecting verbalness and use of vocabulary, such as stimulative devices used, that heretofore might not have been a factor with other investigators.

The difference favoring males over females appears to be consistent throughout the study and needs to be commented on. The general finding of the study seems to point to factors other than culture and/or maturation and/or sex as being responsible for verbalness. This study appears to identify the factor of the materials used to stimulate responses as being more important to stimulate verbalness than any of the previously mentioned factors, such as culture.

The twelve pictures were selected arbitrarily from the Davis-Eels Games. The pictures selected appeared to be representative of the pictures in the total sample. It appears, however, that the pictures had considerably more meaning for males than they did for females. Even though the pictures are supposed to be culturally free and provide equal stimulation for all groups, they appear to stimulate boys more than they do girls.

Another interesting general result of the study was the apparent lack of relationship between Goodenough scores and verbal responses, on most items. The only factor which showed a significant

relationship was the factor of Maze three as it relates to higher Goodenough scores. The more "repeats" that a child used in conversation, the higher his mental ability as scored on the Goodenough scale. The more a child repeats words like "yes, yes" or "I think, I think," the more likely he is to have a higher Goodenough ability level. It appears that if a child uses holders he is using them to give his brain an opportunity to structure the next sentence. In other words, he appears to try to "keep the line open" rather than to "hang up."

The study shows that there is no difference in verbalness between resident girls and migrant girls even though there is a significant difference in the mean Goodenough scores between the groups. Resident girls and migrant girls were equally verbal on all of the comparisons that were made. Likewise, the mean I. Q. levels of resident and migrant boys are not significantly different and there is no difference between migrant boys and resident boys in the tests which were made. It appears that with the type of approach which was employed, residency and migrancy are not differentiated and boys respond more than girls.

A question is raised by the apparent lack of relationship between Goodenough I. Q. scores and verbalness, considering the generally accepted relationship between most I. Q. scores and vocabulary level. If it is generally accepted that vocabulary level has

a high correlation with intelligence, then what are the implications for the types of stimulative devices used to elicit responses from children taking intelligence tests? The thought crosses the investigator's mind that if the questions and words put to children taking vocabulary type intelligence tests were stimulated in other ways, perhaps the results obtained might be different for different children depending on whether they were male or female or migrant or resident or whatever. The study by Carson and Rabin (1966) would seem to substantiate such a premise.

#### Discussion of Differences in Types of Sentences

There were in all 53 different sentence structures used by the students in the study. Most of the sentence structures, however, were used only ten or twelve times in the total sample. Only ten sentence structures were used enough so that a determination could be made concerning validity and reliability of the results, when they were compared statistically. The sentence structures which were used most by the children were sentence structures numbered 1, 2, 16, 18, 41, 50, 52, 63, 64, and 65. Of these, only numbers 15, 41, 52, 63, and 65 showed any significant difference for one group over another. It is interesting to note that there are consistent results favoring residents over migrants which would seem to indicate that there is a cultural difference in regard to the use of certain sentence



structures in favor of residents.

It is difficult for the investigator to make a value judgement concerning which sentence structures are more "desirable" or if the complexity of one sentence is more meaningful than the complexity of another sentence when it is taken out of context. Consequently, an analysis of that type has been eliminated from this study. It is felt that much more evidence in a much larger study would need to be done before such an analysis could be made and therefore that it is beyond the scope of this particular study in terms of interpretation.

There appears to be an I. Q. linked relationship with sentence number 15. When both groups (residents versus migrants) are compared, residents use sentence structure number 15 significantly more often than migrants. When we separate males from females, however, and further when we compensate for I. Q. in a separate run we find that resident girls use this sentence structure significantly more frequently (at the .001 level) than migrant girls. Furthermore when we compare general ability with the sentence structure 15 we find that there is a significant relationship between Goodenough intelligence and use of this sentence structure. Consequently, interpretation of this result would have to state that use of sentence structure number 15, which is scored 1-2-M5 (Subject-verb-indirect object) is definitely linked to higher intelligence. This is the only sentence structure that appears to be directly linked to intelligence.

Sentence structure number 41 is used more by males than females when compared in total groups as well as when separated and compared with general ability.

Sentence structure number 41 is used more by residents than by migrants when compared in total groups as well as when separated and compared with general ability.

Residents use sentence structure number 52 more frequently when compared in total groups and when compared taking general ability into consideration.

Males and older children use the expression "yes" and/or other utterances with meaning more than female and younger children do. This difference is significant when total groups are compared as well as when the groups are compared allowing for differences in general ability.

#### Discussion of Differences in Lengths of Sentences

One of the most consistent results of the study is the difference in the mean length of sentences used favoring males over females. There are some results showing older boys responding to certain pictures more than younger boys. This result seems to imply maturational implications for certain pictures. The bulk of the comparisons, however, showed males to be superior to females in mean length of sentences and residents to be superior to migrants. It is

particularly interesting to note that when general ability is included as a factor in the statistical analysis the superiority of males over females in terms of length of sentences becomes even greater.

#### Discussion of Differences in Number of Sentences Per Picture

Another result of the study is the consistent superiority of males over females in the number of sentences used to describe the various pictures. As with the mean sentence length, there was also consistent superiority of residents over migrants and older children over younger children in terms of the number of sentences used in responding to the various pictures.

## CHAPTER VI

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

In 1960 the Oregon State Department of Education initiated a study on Migrant children. At that time there were 1937 migrant children in the public schools. Of this number 668 were Spanish-speaking and 1269, or 66% were Anglos. The study indicated that the Anglo-migrant child had more problems in arithmetic, health, language arts, and social adjustment than did his Spanish speaking counterpart. The study made no attempt to identify those areas in language arts where there were deficiencies although reading was generally mentioned. The purpose of this present study was to explore, under controlled conditions, the verbal responses of the regular resident student as compared with the anglo-migrant student. The study addresses itself to two major questions to be answered. They are:

1. Do anglo-migrant children and anglo-resident children differ in regard to verbal responses?
  - a. Vocabulary level
  - b. Types of sentences
  - c. Length of sentences

2. Does the relationship between general ability and verbal responses differ between anglo-resident and anglo-migrant children?

The investigator contacted all of the school districts in the state known to have migrant children and ended up working with 14 districts participating in the study. The procedure for collecting the data was as follows:

A first grade classroom that had a number of migrant children would be selected to participate in the study. All of the children in the room were given a Goodenough Draw-A-Man test to determine their general mental ability. If the room contained, for example, four anglo-migrant children, then four resident children of the same sex and generally the same age were picked from that same room to be used as comparisons in the study. The children were individually shown twelve pictures selected from the Davis-Eels games and asked to tell about the pictures. The responses to the pictures were tape recorded and transcribed verbatim. After the data were transcribed linguistic techniques were used to analyze the sentences for structure and length.

The Dolch Hard and Easy Word Lists were used to make a comparison of vocabulary levels used by the two different groups. After all of the data were transcribed and analyzed they were compiled and punched on cards and fed to a computer program which was designed to compare statistically the results using an analysis of

variance technique.

The study showed that boys used longer sentences and more sentences than girls. The study also showed boys using more Total Dolch words and more Dolch Easy words than girls. The study also showed that residents were superior to migrants in use of total Dolch words, in the use of some sentence structures, and in the length of sentences used in response to some of the pictures.

The study also shows that Goodenough Ability Scores have little, if any, relationship to verbalness as described in the study. Resident girls in this study had a mean I. Q. level which was significantly higher than either migrant or resident boys or migrant girls. Even though there was this difference in general ability, the resident girls did not score higher than the boys nor were there any significant differences between resident girls and migrant girls in any of the other tests, with two exceptions. One exception is that there is a direct correlation between the use of one type of Maze referred to as "Repeats" and Goodenough General Ability. Maze three repeats are typified by words such as "Yes, Yes, I think, I think," etc, which are used in speech patterns and which appear to hold the conversation open while the person is thinking of what to say next. The other exception is the use of sentence structure number 15. Sentence number 15 is typified by the following, "This boy is talking to these two boys." This is a subject, verb, indirect object type of sentence. That sentence structure was

related significantly to higher Goodenough scores.

In answering the two basic questions of the study, it can be stated that there are differences between anglo-migrant and anglo-resident children in regard to verbal responses. Boys and residents tend to score higher than girls and migrants in vocabulary level, in types of sentences, and in length of sentences.

In answer to the second question in the study it appears that there is only a relationship between general ability and verbal responses in two very specific types of verbalness, namely in the use of Maze three repeats and with one particular sentence structure. For all practical purposes, however, the answer to the question would have to be that there is little relationship, if any, between general ability as measured by the Goodenough scores and verbal responses which were elicited in this study.

Probably one of the most significant findings of the study was that males tended to be more verbal than females in almost every comparison. Upon closer inspection it seems possible that this might be attributed to the types of materials which were used to elicit the responses. The pictures from the Davis-Eels games, although selected arbitrarily, did seem to stimulate a high level of verbal response on the part of boys.

### Conclusions

The most significant result of the study, aside from verifying that there are differences between migrants and residents in verbal responses, is the consistent difference favoring boys over girls. According to an authority in the field who reviewed the Davis-Eels games, there is not supposed to be any difference in the total pictures favoring any one group, yet these twelve pictures stimulated boys more than girls. What seems to merit special attention is the fact that with any given set of materials one group could be more stimulated than another group to reply verbally. This leads to some interesting speculation as to what might happen in terms of developing vocabulary and verbal responses and ultimately reading skills with boys and especially with disadvantaged children, if different sets of materials and different approaches were used to stimulate their verbalness. It is also possible that the sex of the interviewer (male) may have had an effect on stimulating more verbalness on the part of males in the study.

If verbalness can be stimulated (as this study seems to indicate) for different groups using different materials and/or personnel, then it seems reasonable to assume that a different curriculum and perhaps even different teachers (males teaching the first grade) might produce some very different results in terms of vocabulary and verbal



stimulation in the primary grades if they were applied. This points to some interesting possibilities for the public schools. There obviously is a need for a great deal more research, but if this study is an indicator, there seems to be the suggestion that verbal stimulation and vocabulary development could be improved for males if appropriate procedures were used.

No value judgment was made concerning which sentences were of more complexity and thus "better" than other sentences. The investigator (not being a linguist) is not sure that a sentence which is structured-subject, verb, indirect object, is any "better" sentence than a sentence structured-subject, passive verb-"there" group. Consequently, it appears that if such value judgments are to be made, they should be made in a much more comprehensive linguistic study with much larger sampling than this study was able to do.

One of the most consistent results of the study was the difference in length of sentences used favoring males over females. This seems to reaffirm again the concept that perhaps what is presented and how it is presented may be more important than any other consideration in terms of stimulating verbal responses.

### Recommendations

It is recommended that another similar study to this be done using a larger sample. The sample of 71 was adequate for making

broad general group comparisons; for example, male versus female and/or migrant versus resident. The number of responses in terms of the sentences and the amount of verbalness was certainly adequate in this study. A problem did come up, however, when males were separated from females, migrants were separated from residents and older children were separated from younger. The group sizes became so small that any results that were compared, such as the length of sentence, probably are not reliable or valid even though they did tend to support the basic conclusions reached in the large group comparisons.

It is recommended that another complete study be developed to explore some various possibilities for stimulating verbalness and verbal responses in males and/or females and migrants and/or residents using a variety of stimulative pictures or situations. Such a study should provide a comparison of results when male and female interviewers gather the data to determine the effect of sex differences of the interviewer on stimulating verbal responses.

It might be interesting to perform other studies similar to this one for anglos in the Appalachian region to see if there are similarities of verbal responses as well as vocabulary levels with various groups of anglos in various parts of the country.

## BIBLIOGRAPHY

- Bernstein, Basil. 1961. Social class and linguistic development: a theory of social learning. In: Education, economy, and society. ed. by A. H. Halsey. et al. New York, The Free Press of Glencoe. p. 288-314.
- Bird, Alan R. and John L. McCoy. 1967. White americans in rural poverty. Washington, D. C. p. 2. (U. S. Dept. of Agriculture/ Economic Research. Report no. 124) November.
- Britton, J. H. 1954. The influence of social class upon performance on the draw-a-man test. Journal of Educational Psychology 45:44-51.
- Buros, Oscar K. (ed.). 1959. The fifth mental measurement year-book. Highland Park, N. J., The Gryphon Press. 1292 p.
- Carson, Arnold S. and A. I. Robin. 1966. Verbal comprehension and communication in negro and white children. In: Understanding the problems of the disadvantaged learner Part II. ed by Staten W. Webster. San Francisco, California, Chandler Publishing Company. p. 350-357.
- Cohn, Werner. 1966. A language of lower-class children. In: Understanding the educational problems of the disadvantaged learner. Part II. ed by Staten W. Webster. San Francisco, California, Chandler Publishing Company. p. 328-332.
- Deutsch, Martin. 1963. The disadvantaged child and the learning process: some social, psychological, and developmental considerations. In: Education and depressed areas. ed by A. H. Passow. New York, College Bureau of Publications. Columbia Bureau of Publications. Columbia University. p. 163-179.
- Deutsch, Martin. 1965. The role of social class in language development and cognition. American Journal of Orthopsychiatry 35(1):78-88.
- Deutsch, Martin and Burt Brown. 1964. Social influences in negro-white intelligence differences. The Journal of Social Issues 20(2):24-36. April.

- Goodenough, Florence L. 1926. Measurement of intelligence by drawings. Chicago, World Book Company. 177 p.
- Hayes, William L. 1963. Statistics for psychologists. New York, Holt, Reinhardt, and Winston. 719 p.
- Hurst, Charles G. Jr., and Wallace L. Jones. 1967. Generating spontaneous speech in the underprivileged child. *Journal of Negro Education* 26:362-368.
- Jensen, Arthur R. 1963. Learning in the pre-school years. *Journal of Nursery Education* 18(2):133-39.
- John, Vera P. 1963. The intellectual development of slum children: some preliminary findings. *American Journal of Orthopsychiatry* 33(5):813-822.
- John, Vera P. and Leo S. Goldstein. 1964. Language acquisition. *Merrill-Palmer Quarterly of Behavior and Development* 10(3):265-276.
- McCarthy, Dorothea. 1951. Language development of children. In: *Manual of child psychology*, ed. by Leonard Carmichael. New York, John Wiley and Sons. p. 476-581.
- Petrie, Ronald G. 1960. Report on the pilot program for the education of migrant children. Salem, Oregon. Oregon State Department of Education. 95 p.
- Strickland, Ruth G. 1962. The language of elementary school children: its relationship to the language of reading textbooks and the quality of reading of selected children. Bloomington, Indiana, 131 p. (Indiana University, School of Education. Bulletin. Vol. 38, No. 4, July.)
- Vygotsky, L. S. 1962. Thought and language, ed. and tr. by E. Haufmann and B. Vakor. New York, John Wiley and Sons. 168 p.
- Wakefield, Mary W. and N. J. Silvaroli. 1969. A study of oral language patterns of low socio-economic groups. *The Reading Teacher* 22(7):622-624.

- Weider, A. and P. A. Noller. 1950. Objective studies of childrens drawings and human figures, sex awareness and social economic level. *Journal of clinical psychology* 6:319-325.
- Williams, J. Harold. 1935. Validity and reliability of the Goodenough intelligence test. *School and Society* 41:653-6.
- Wyatt, Woodrow W. and Charles M. Bridges, Jr. 1967. *Statistics for the behavioral sciences*. Boston, Mass., D. C. Heath and Company. 389 p.

## **APPENDICES**

## APPENDIX A

### Participating School Districts

### Participating School Districts

The following school districts were sent letters and forms to be completed on August 23, 1967:

Canby School District No. 86  
Canby, Oregon

Estacada School District No. 108  
Estacada, Oregon

Molalla School District No. 35  
Molalla, Oregon

Sandy School District No. 46  
Sandy, Oregon

Crook County Unit Court House  
Prineville, Oregon

Redmond School District No. 2J  
Redmond, Oregon

\*\*Hood River School District No. 1  
Court House  
Hood River, Oregon

Parkdale Primary School  
Hood River, Oregon

Pine Grove  
Hood River, Oregon

\*\*Klamath County School District No. 600  
Court House  
Klamath Falls, Oregon

Malin  
Klamath Falls, Oregon

\*\*Adrian School District No. 61  
Adrian, Oregon



Annex School District No. 29  
Route 3  
Weiser, Idaho

Nyssa School District No. 26  
Nyssa, Oregon

\*\*Ontario School District No. 8  
Ontario, Oregon

Pioneer Elementary School  
Ontario, Oregon

Vale School District No. 15  
Vale, Oregon

Aumsville School District No. 11  
Aumsville, Oregon

Brooks School District No. 31  
Brooks, Oregon

Gervais School District No. 76  
Gervais, Oregon

Eldridge School District No. 31  
Gervais, Oregon (now consolidated with Gervais)

Jefferson School District No. 14 J  
Jefferson, Oregon

Marion School District No. 20  
Marion, Oregon

North Marion School District No. 15  
Aurora, Oregon

Silverton School District No. 4  
Silverton, Oregon

St. Louis School District No. 59  
Woodburn, Oregon

St. Paul School District No. 45  
St. Paul, Oregon

Stayton School District No. 77J  
Stayton, Oregon

West Stayton School District No. 61  
Aumsville, Oregon

North Santiam School District No. 126  
Aumsville, Oregon

Woodburn School District No. 103  
Woodburn, Oregon

Gresham School District No. 4  
Gresham, Oregon

Orient School District No. 6J  
Gresham, Oregon

\*\*Central School District No. 13  
Independence, Oregon

Banks School District No. 13  
Banks, Oregon

Hillsboro School District No. 7  
Hillsboro, Oregon

North Plains School District No. 70  
North Plains, Oregon

\*\*Dayton School District No. 8  
Dayton, Oregon

\*\*McMinnville School District No. 40  
McMinnville, Oregon

Layfayette  
McMinnville, Oregon

\*\* Districts that actually participated in the study.

## APPENDIX B

## Dolch Easy and Hard Word List

Dolch Easy

a  
after  
all  
am  
an  
and  
are  
around  
as  
at  
away

be  
big  
black  
blue  
brown  
but  
by

call  
came  
can  
carry  
cold  
come

did  
do  
don't  
down

eat

fast  
find  
five  
fly  
for  
from  
funny

get  
give

Dolch Hard

about  
again  
always  
any  
ask  
ate

because  
been  
before  
best  
better  
both  
bring  
buy

clean  
could  
cut

does  
done  
draw  
drink

eight  
every

fall  
far  
first  
found  
four  
full

gave  
goes  
got  
grow

hold  
hot  
how  
hurt

Dolch Easy

go  
going  
good  
green

had  
has  
have  
he  
help  
her  
here  
him  
his

I  
if  
in  
into  
is  
it  
its

jump

know

like  
little  
look

make  
may  
me  
my

no  
not

of  
old  
on  
one  
out

Dolch Hard

just

keep  
kind

laugh  
let  
light  
live  
long

made  
many  
much  
must  
myself

never  
new  
now

off  
once  
only  
open

or  
our  
own

pick  
please  
pretty  
pull

read  
right  
round

say  
seven  
shall  
show  
sing  
sit

Dolch Easy

over

play

put

ran

red

ride

run

said

saw

see

she

so

some

soon

stop

ten

that

the

this

three

to

too

two

under

up

was

we

went

what

who

will

with

yellow

yes

you

your

Dolch Hard

six

sleep

small

start

take

tell

thank

their

them

then

there

these

they

think

those

today

together

try

upon

us

use

very

walk

want

warm

wash

well

were

when

where

which

white

why

wish

work

would

write

## APPENDIX C

### Key to Sentence Structure Analysis - With Examples

1. 1-2 (Subject-verb) Example Sentence, "They're fighting."
2. 1-2-M1 (Subject-verb-expression of place) Example Sentence, "A man's waiting over in curb."
3. M1-2-1 (Expression of place-verb-subject) Example Sentence, "Here came his wife."
4. 1-2-M1-M2 (Subject-verb-expression of place-expression of manner) Example Sentence, "He's standing there with his eyes up like that."
5. 1-2-M1-M3 (Subject-verb-expression of place-expression of time) Example Sentence, "They're going home then."
6. 1-2-M1-M4 (Subject-verb-expression of place-expression of purpose) Example Sentence, "They're digging in their pocket to see how much money they could find."
7. 1-2-M2 (Subject-verb-expression of manner) Example Sentence, "And they're walking together."
8. 1-M2-2 (Subject-expression of manner-verb) Example Sentence, "And he's just sitting."
9. 1-M2-2-M1 (Subject-expression of manner-verb-expression of place) Example Sentence, "And the others just sits there."
10. 1-2-M2-M1-M4 (Subject-verb-expression of manner, expression of place, expression of purpose) Example Sentence, "The other kids are just sitting there waiting to play football."
11. 1-2-M3 (Subject-verb-expression of time) Example Sentence, "He's going to send him to bat then."
12. M3-1-2 (Expression of time-subject-verb) Example Sentence, "And then he's laughing."
13. M3-1-2-M1 (Expression of time-subject-verb-expression of place) Example Sentence, "And then he was going to get sent away from the table."
14. 1-2-M4 (Subject-verb-expression of purpose) Example Sentence, "They're looking how the floor was made."



15. 1-2-M5 (Subject-verb-preposition and indirect object) Example Sentence, "This boy is talking to these two boys."
16. 1-2-4 (Subject-verb-direct object) Example Sentence, "And boys got some money."
- \*17.
18. 1-2-4-M1 (Subject-verb-direct object-expression of place) Example Sentence, "So the mother put some water on his face."
19. M1-1-2-4 (Expression of place-subject-verb-direct object) Example Sentence, "And in the wagon they have apples."
20. 1-2-4-M1-M2 (Subject-verb-direct object-expression of place-expression of manner) Example Sentence, "The boy broke the window, hit the dad on the head hard."
21. 1-2-4-M1-M3 (Subject-verb-direct object-expression of place-expression of time) Example Sentence, "She sit him in the corner then."
22. 1-2-4-M1-M4 (Subject-verb-direct object-expression of place-expression of purpose) Example Sentence, "The man has a bump on his head from the ball."
23. 1-2-4-M2 (Subject-verb-direct object-expression of manner) Example Sentence, "That kid hit him with a baseball."
24. 1-M2-2-4 (Subject-expression of manner-verb-direct object) Example Sentence, "We almost finished these."
25. M2-1-2-4 (Expression of manner-subject-verb-direct object) Example Sentence, "Just, she picked him up."
- \*26.
27. 1-M2-2-4 (Subject-expression of manner-verb-direct object) Example Sentence, "And some girls, walking down, didn't have enough money."
- \*28.
29. 1-2-4-M3 (Subject-verb-direct object-expression of time) Example Sentence, "This boy was playing baseball one time."

30. M3-1-2-4 (Expression of time-Subject-verb-direct object)  
Example Sentence, "And then he says can I have a balloon."
31. M3-1-2-4-M1 (Expression of time-subject-verb-direct object-expression of place) Example Sentence, "Then she sit him in the corner."
32. M3-1-2-4-M2 (Expression of time-subject-verb-direct object-expression of manner) Example Sentence, "Then he took the boy by the arm."
33. 1-2-4-M4 (Subject-verb-direct object-expression of purpose)  
Example Sentence, "They're spanking the kid because they broke the window out."
34. M4-1-2-4 (Expression of purpose-subject-verb-direct object)  
Example Sentence, "So she spanked him."
35. 1-2-4-M5 (Subject-verb-direct object-preposition and indirect object) Example Sentence, "They're saying hi to someone."
- \*36.
37. 1-2-3-4 (Subject-verb-indirect object-direct object) Example Sentence, "And she was going to give him a spanking."
38. 1-2-3-4-M1 (Subject-verb-indirect object-direct object-expression of place) Example Sentence, "The man's giving the boy a spanking out on the step."
39. M3-1-2-3-4 (Expression of time-subject-verb-indirect object-direct object) Example Sentence, "Now he's giving him a spanking."
- \*40.
41. 1-2b-5 (Subject-passive "to be" verbs-predicate nominative verb) Example Sentence, "The boy is getting damp."
42. 1-2b-5-M1 (Subject-"to be" verb-predicate nominative-expression of place) Example Sentence, "Thats all on this one."
43. 1-M1-2b-5 (Subject-expression of place-"to be" verb-predicate nominative) Example Sentence, "That thing right there is I don't know what."

\*44.

\*45.

46. 1-M3-2b-5 (Subject-expression of time-"to be" verb-predicate nominative) Example Sentence, "She still feeled sick."

\*47.

48. 1-2b-5-M4 (Subject-"to be" verb-predicate nomative-expression of purpose) Example Sentence, "That's the thing you hold in your hand to catch a ball."
49. 1-2b-5-M5 (Subject-"to be" verb-predicate nominative-preposition-indirect object) Example Sentence, "And Mom got mad at them."
50. 2b-1 ("to be" verb-subject) Example Sentence, "There's her house."
51. 1-2b (Subject-"to be" verb) Example Sentence, "That was broke."
52. 1-2b-M1 (Subject-"to be" verb-expression of place) Example Sentence, "They're on the sidewalk."
53. M1-2b-1 (Expression of place-"to be" verb-subject) Example Sentence, "Around the corner there's a house."
54. 2b-1-M1-M2 ("to be" verb-subject-expression of place-expression of manner) Example Sentence, "There was the dog in bed with them."
55. 2b-1-M1-M4 ("to be" verb-subject-expression of place-expression of purpose) Example Sentence, "There's a boy hiding behind a tree from his Mom."

\*56.

\*57.

58. M3-2b-1 (Expression of time-"to be" verb-subject) Example Sentence, "Then there's a girl hollering to the boy."

\*59.

\*60.

61. 2b-1-M4 ("to be" verb-subject-expression of purpose)  
Example Sentence, "Theres a woman calling to go and give him  
a bone. "

\*62.

63. (u) (utterance with meaning) "yes"
64. ( ) (Non-structural elements) "
65. 2b-1-M1 (Passive verb-subject-expression of place) Example  
Sentence, "And there's a pen there. "
66. 1-2-M1-4 (Subject-verb-expression of place-direct object)  
Example Sentence, "They're throwing around all the pillows. "

\*  
Prior to evaluation of the data a key was developed anticipating various sentence structures which ultimately never appeared in the children's verbal responses, consequently, they have been eliminated in the key.

## APPENDIX D

### The Twelve Davis-Eels Pictures



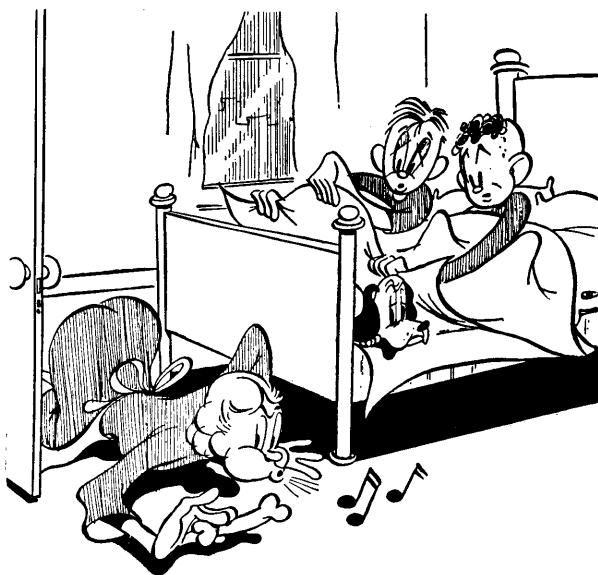
Picture No. 1



Picture No. 2



Picture No. 3



Picture No. 4



Picture No. 5

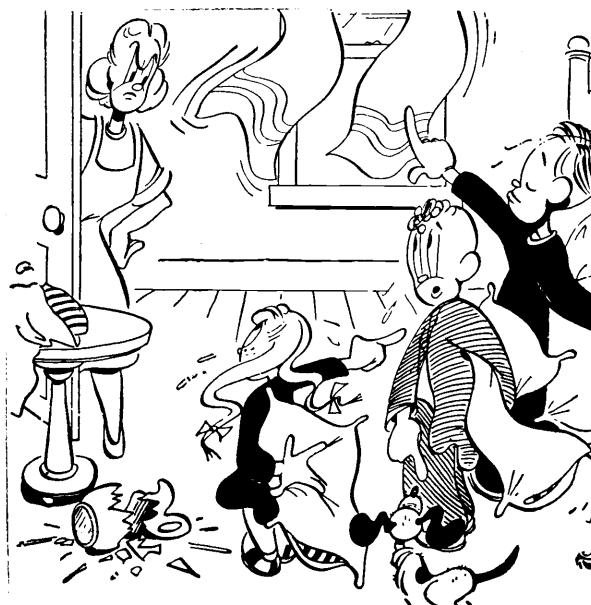


Picture No. 6





Picture No. 7



Picture No. 8



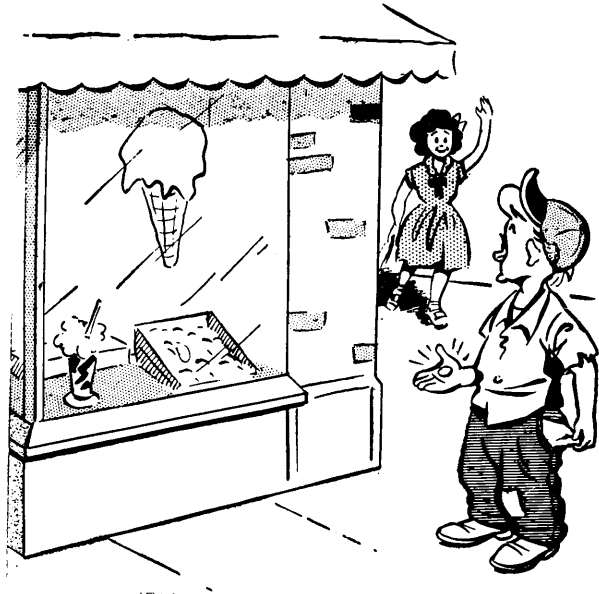
Picture No. 9



Picture No. 10



Picture No. 11



Picture No. 12