

A STUDY OF BODY IMAGE CONCEPT AND ITS RELATIONSHIP  
TO FACILITY OF LANGUAGE COMPREHENSION IN  
CULTURALLY DISADVANTAGED CHILDREN

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We hereby recommend that the thesis prepared under  
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## CHAPTER I

### INTRODUCTION

In recent years, there has been an increased interest in the learning problems of children in the elementary school. Instead of becoming a statistic, the children who are failing to cope with academic requirements have become the center of attention of educators, speech therapists, psychologists, neurologists, and many other disciplines. Of particular concern to current researchers are the children who have been labeled by some writers as being "culturally disadvantaged." The Elementary and Secondary Education Act of 1965 authorized more than \$1.3 billion in federal funds to strengthen and improve the educational quality and opportunities in elementary and secondary schools. The Title I provision of the ESEA recognized the long-standing relationship between low educational achievement and the cycle of poverty. This title provides funds to school districts for special programs designed to meet the needs of children living in areas where there is a concentration of low income families.<sup>1</sup>

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<sup>1</sup>U. S., Department of Health, Education, and Welfare, Office of Education, The Elementary and Secondary Education Act of 1965 (Washington, D. C.: U. S. Government Printing Office, 1966), p. 5.

Communication disorders have become the focal point of concern to the professions participating in the studies of disadvantaged children. Much of the research to date indicates that the process of language learning for disadvantaged children is delayed due to a lack of verbal stimulation in the home, inadequate speech models, and limitations in opportunities to develop conceptive skills.<sup>1</sup>

Bereiter and Engelmann point out that children from low income families often lack the ability to use language to explain, to describe, to inquire, to hypothesize, to analyze, and to compare. These are the uses of language that enable an individual to achieve academic success.<sup>2</sup>

Wood states that language is basic to all communication by virtue of the fact that it encompasses reading and writing as well as the spoken word. Language is referred to as a learned process of which speech is but one part. It is an organized system of linguistic symbols which are used in communication. The process of language development is dependent upon the individual's abilities to receive, to integrate, and to express spoken and written linguistic symbols which are received through two of the major sensory channels:

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<sup>1</sup>Jane Beasley Raph, "Language Development in Socially Disadvantaged Children," Review of Educational Research, XXXV (December, 1965), 396.

<sup>2</sup>Carl Bereiter and Siegfried Engelmann, Teaching Disadvantaged Children in the Preschool (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 31.

visual and auditory. The comprehension of the written word is achieved through reading; the understanding of the spoken word is accomplished through listening. As a correlate, the expression of language is through speaking and writing.<sup>1</sup> Wood asserts that "speech and language development does not occur as an isolated function but rather as a continuous developmental process entailing the intellectual, motor, social, emotional, and sensory spheres."<sup>2</sup> The delayed development of speech and language occurs more frequently and with more complexity than possibly any other communication disorder.<sup>3</sup>

According to Hardy, one of the earliest, most sensitive indicators of the child "in trouble" is delayed language development.<sup>4</sup> Her views on language are basically the same as those of Wood:

Learning to listen, to hear, to comprehend, to remember, to recall, to formulate and to express in speech a symbol code, and eventually to read and write this same code, is probably the most difficult and complex task the young child undertakes. It is subject to many interferences--anatomic, physiologic, neurologic, psychologic, cultural, and environmental.<sup>5</sup>

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<sup>1</sup>Nancy E. Wood, Delayed Speech and Language Development (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), pp. 1-7.

<sup>2</sup>Ibid., p. 47.

<sup>3</sup>Ibid., p. 1.

<sup>4</sup>Miriam Pauls Hardy, "Communication and Communication Disorders," The Teacher of Brain-Injured Children, ed. William M. Cruickshank (Syracuse, New York: Syracuse University Press, 1966), p. 131.

<sup>5</sup>Ibid.

The ability to comprehend the spoken word is known as auditory reception. An individual receives language stimuli by way of two modalities or channels, the auditory and the visual. The principle that input precedes output should be stressed since understanding must be attained before words can be used meaningfully for expression. Developmentally, a child must build a foundation for language comprehension from meaningful units of experience before he is ready to communicate with others by means of expressive language.<sup>1</sup>

An investigation of language disturbances necessitates going beyond overt verbal manifestations so that the neurophysiological conditions underlying the language behavior can be evaluated. It is stated by de Hirsch that all the children who are referred to the Pediatric Language Center at Columbia Presbyterian Medical Center are evaluated for overall motility, body image, motor and visuomotor patterning as well as for auditory and visual perception. The competencies and weaknesses of these areas should be assessed since all are pertinent in terms of language performance.<sup>2</sup>

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<sup>1</sup>Doris J. Johnson and Helmer R. Myklebust, Learning Disabilities, Educational Principles and Practices (New York: Grune and Stratton, Inc., 1967), pp. 37-40.

<sup>2</sup>Katrina de Hirsch, "Diagnosis of Developmental Language Disorders," Studies in Tachyphemia, An Investigation of Cluttering and General Language Disability (New York: Diagnostic and Clinical Services of the Speech Rehabilitation Institute, 61 Irving Place, n.d.), p. 48.



The views of the authors presented are of value to the speech therapist in his attempt to determine possible causes of language disturbance. The public school therapist is well aware of the importance of assessing the "competencies and weaknesses" of the child's motor, perceptual, intellectual, and emotional behavior. With increased frequency, particularly in the schools that are included in the Title I Program, the first grade teachers are turning to the speech therapist for assistance in an effort to help the children who are not responding to the first grade curriculum.

According to Raph, the speech clinician's traditional role with young children in the public schools may be changing as a result of the emphasis being given to the problem of language development which appears to be one of the central handicaps of the disadvantaged. In conjunction with Head Start Classes, a number of speech clinicians have been involved with intensive language and perceptual training of preschool children. Unless new strategies of intervention are introduced at an early age, there will continue to be a gap in the child's ability to manipulate symbols sufficiently for learning to take place.<sup>1</sup>

Both the speech therapist and the teacher are cognizant of the necessity of identifying and treating the language

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<sup>1</sup>Jane Beasley Raph, "Language and Speech Deficits in Culturally Disadvantaged Children: Implications for the Speech Clinician," Journal of Speech and Hearing Disorders, XXXII (August, 1967), 209-12.

problems of children as early in their first grade experience as possible. The overwhelming problem arises as to where to begin and how to accomplish the screening of large numbers of children in a limited amount of time so that the individuals most likely to be in need of further evaluation can be detected.

Well known for his writings on the slow learning child, Kephart suggests that to understand a child's difficulties and problems, it is advantageous to start investigating the child's awareness of himself in relationship to his body. His philosophy maintains that:

In all external information, we are dealing with relatives and relationships rather than with absolutes. For this reason, we must have a point of reference around which to organize the relative impressions which we get so that we can impose some kind of order upon them and construct a coherent totality. We use our own bodies as this point of reference.<sup>1</sup>

The sensations and impressions that are received by the child become welded into a unity which represents the body to him. Out of this is built the body image which is a learned concept resulting from the observation of movement of parts of the body and their relationship to each other and to external objects. The development of body image is related to the development of motor skills, spatial relationships, and form perception. Kephart has devised a 'Perceptual Rating Scale' to determine a child's ability to perform such

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<sup>1</sup>Newell C. Kephart, The Slow Learner in the Classroom (Columbus, Ohio: Charles E. Merrill Books, Inc., 1960), p. 50.

tasks as balance on the walking board, jumping, skipping, identification of parts of the body, ocular pursuits, and copying forms. Failure to accomplish these tasks might be an indication that the child has not developed a complete pattern of his own body and its movements.<sup>1</sup>

The ability to perceive objects accurately in relation to the body depends upon the accurate perception and knowledge one has of the body itself. Frostig states that body awareness is closely related to the development of all psychological functions. Unfortunately, its development is often lacking in children.<sup>2</sup>

Of the contemporary writers, Schilder has done, perhaps, the most extensive study of body image. He defines body image as being the image of the human body which we form in our mind. The term, body image, indicates that we are not dealing with a mere sensation or imagination since there is a self-appearance of the body. When the knowledge of our own body is incomplete and faulty, all actions that are dependent upon this knowledge will be faulty also. The actual concept that a person has of his own body is the result of continuous effort that is guided by experience, trial and error, effort and attempt. It is in this manner that we gain the organized knowledge of our body. The human

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<sup>1</sup>Ibid., pp. 51, 120-55.

<sup>2</sup>Marianne Frostig and David Horne, The Frostig Program for the Development of Visual Perception (Chicago: Follett Publishing Company, 1964), p. 40.

figures that children draw often reflect their knowledge and sensory experience of the body image. At least a mental picture of the human body is expressed by the drawings, and body image is a mental picture that is built from perception. Schilder expresses the opinion that Goodenough's study which led to her development of the Draw-A-Man Test contains material which is of utmost importance for the problem of the body image of the child.<sup>1</sup>

Cruickshank views the underdeveloped or distorted body image as being impaired by faulty perception and, therefore, an important factor in impaired self-concept. He states that:

The development of a realistic body image concept necessitates coordinated physical growth and sound emotional development, i.e., a generally secure person. If any of these facets of healthy growth are retarded for any reason, the individual's body image may be impaired and learning and adjustment will be retarded as a result.<sup>2</sup>

It is further hypothesized by Cruickshank that until there is a coordinated and coherent understanding of the body image, learning in the form of reading and number concepts will either not take place or will be incomplete. He has observed that in some children there seems to be a close

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<sup>1</sup>Paul Schilder, The Image and Appearance of the Human Body (New York: International Universities Press, Inc., 1950), pp. 11, 45, 106.

<sup>2</sup>William M. Cruickshank et al., A Teaching Method for Brain-Injured and Hyperactive Children (Syracuse, New York: Syracuse University Press, 1961), p. 8.

relationship between the developing body image concept as depicted in children's drawings of a person and their initial development of reading and number concepts. In a group of forty children, it was noted that those who were achievers had well-developed body image concepts and were able to depict these with accuracy. Those children who were low achievers in reading and related areas had body image concepts that were immature or almost nonexistent.<sup>1</sup>

The theoretical concept that human figure drawings are actually a reflection of body image is upheld by a number of leading authorities. In addition to the views of Schilder and Cruickshank, which have been discussed previously in this paper, Machover offers additional support based on her concentrated study of human figure drawings. She maintains that there is an intimate connection between the drawn figure and the personality of the person who drew the figure.

Machover further elaborates that:

. . . the perception of the body image as it has developed out of personal experience must somehow guide the individual who is drawing in the specific structure and content which constitutes his offering of a "person." . . . Successful drawing interpretation has proceeded on the hypothesis that the figure drawn is related to the individual who is drawing with the same intimacy characterizing that individual's gait, his handwriting, or any other of his expressive movements.<sup>2</sup>

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<sup>1</sup>William M. Cruickshank, "Psychological Considerations with Crippled Children," Psychology of Exceptional Children and Youth, ed. William M. Cruickshank (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), pp. 318-19.

<sup>2</sup>Karen Machover, Personality Projection in the Drawing of the Human Figure (Springfield, Illinois: Charles C. Thomas Publisher, 1949), p. 5.

Witkin also sees a close relationship between a human figure drawing and the individual who has drawn it. The figure may be regarded as a representation of the subject's image of himself.<sup>1</sup> Bender shares a similar assumption. She has indicated that the Goodenough Test represents the visual image of the child's own body. It has been observed that some children with severe physical defects often depict their handicap in their drawings of a man. The body image evolves in the maturational process through the gestalt integration of all sensory, motor, and social experiences of the child. Running parallel with sensory-motor development, the body image represents an individual's knowledge and sensory experience of his own body.<sup>2</sup>

In her discussion of body image, de Hirsch makes the following statements:

The Goodenough Test is well known as a measure for evaluating intelligence. We use this test in our speech-defective group not only for determining hand-eye coordination, capacity to handle three dimensional space and manual dexterity, but above all to evaluate maturity of body image, a concept that refers to the image of self derived from parts of the body and their relationship to each other. The body image seems to be consistently primitive in children suffering from severe language deficiencies.<sup>3</sup>

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<sup>1</sup>H. A. Witkin et al., Personality Through Perception, ed. Gardner Murphy (New York: Harper and Brothers Publishers, 1953), pp. 235-36.

<sup>2</sup>Lauretta Bender, "The Goodenough Test (Drawing A Man) in Chronic Encephalitis in Children," The Journal of Nervous and Mental Disease, XCI (March, 1940), 277-86.

<sup>3</sup>Katrina de Hirsch, "Gestalt Psychology as Applied to Language Disturbances," The Journal of Nervous and Mental Disease, CXX (September, October, 1954), 258.

Relying on the theories that have been reported in this study, it appears feasible to assume that the development of language is a complex activity dependent upon intellectual, motor, sensory and emotional factors that interrelate. Body image is not separate from any of these factors, but, possibly, a reflection of all. It has been postulated that the development of a well-defined body image is important as one of the basic concepts in the sequential developmental growth pattern of a child. Accordingly, it has been indicated that satisfactory receptive language or the ability to comprehend written and spoken words is basic to the development of expressive language. The purpose of this study was to explore the possibility of a relationship between the concept of body image and the facility of language comprehension in a sample of first grade children enrolled in public schools that are classified under the federal government's Title I Program.

The following hypotheses, stated in the null, were formulated:

1. There will be no significant correlation between the body image concept as indicated by the Good-enough-Harris Drawing Test and language comprehension as measured by the Peabody Picture Vocabulary Test.
2. There will be no significant correlation between the body image concept as indicated by the

Goodenough-Harris Drawing Test and the comprehension of visual linguistic stimuli as assessed by the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities.

3. There will be no significant correlation between the body image concept as indicated by the Goodenough-Harris Drawing Test and the comprehension of auditory linguistic stimuli as assessed by the Auditory Decoding subtest of the Illinois Test of Psycholinguistic Abilities.

A correlation will be considered significant if it reaches the .05 level of significance. If a significant correlation should be found, it could be assumed that the Goodenough-Harris Drawing Test might prove to be a valuable screening device for problems involved in the comprehension of language.



## CHAPTER II

### RELATED RESEARCH

In 1926, Goodenough became well known for her study of the intellectual factors involved in the spontaneous drawing of young children. She devised the Draw-A-Man Test as a measure of intelligence after analyzing 4000 drawings obtained from public school children from all types of economic, cultural, and racial backgrounds. It became evident to Goodenough that an analysis of the psychological functions involved in the drawings of young children must go beyond the fields of simple visual imagery and eye-hand coordination to take account of the higher thought processes. The progression from the simple concepts that form the basis of the crude reproductions of the four-year-old to the complex and more highly developed ideas of the ten-year-old is indicated by a series of marked changes.<sup>1</sup>

At any given time, a child's drawing of the human figure will consist of two parts. The first part appears invariably and depicts those characteristics which have already become integrated into the developing concept of the

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<sup>1</sup>Florence L. Goodenough, Measurement of Intelligence by Drawings (Yonkers-on-Hudson, New York: World Book Co., 1926), pp. 73-75.

figure drawn; the second part is shown irregularly and includes the elements which are in the process of becoming integrated. The frequency with which any given characteristic tends to appear is contingent upon the extent to which it has become integrated into the developing concept.<sup>1</sup>

The drawings of the human figure offer a means of studying mental growth which is of value to the professions involved in the studies of child development and behavior. Goodenough believed that her experiment, which was concerned with the intellectual side of the figure drawing, by no means exhausted the possibilities which these drawings possess for the study of child development. In fact, she stated that it was her hope that the human figure drawings would point the way to further research.<sup>2</sup>

The Draw-A-Man Scale, consisting of fifty-one points, has been the subject of many research projects. Goodenough, herself, submitted the drawing test to critical evaluation. In one project, she found a significant correlation of the mental ages on the Draw-A-Man Test with the mental ages on the Stanford-Binet Intelligence Scale to be .763 for ages four to twelve taken separately. Correlation with teachers' judgments of ability was found to be .444 within the first three grades. In another study, an attempt was made to ascertain whether artistic talent would influence the test

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<sup>1</sup>Ibid.

<sup>2</sup>Ibid., p. 80.

score. Examination of many drawings that had unusually high scores led to the opinion that artistic talent is practically a negligible factor in producing high scores on the test. In order to determine whether the Draw-A-Man Test could be used in prognosing school success, Goodenough conducted an investigation during a three semester period involving 162 children who had been given the drawing test in the first grade. No extra promotions were made by the children whose intelligence quotients were below 100 on the test. Every child who had an intelligence quotient below 70 failed to be promoted at least once during the period. It was concluded that the Draw-A-Man Test has distinct value in predicting future school success.<sup>1</sup>

The most thoroughly controlled study of the reliability of the Draw-A-Man Test was carried out by McCarthy in 1944 when 386 third and fourth grade children were given the drawing test on two occasions with an interval of one week between the two administrations. Scoring was done by graduate students who had been given a period of preliminary training. Each drawing was scored three times, twice by the same person and once by a different person. The reliability of the scale was studied from the following aspects: the scorers' agreement with themselves when rescored the same drawings; the scorers' agreement with each other on the scoring of identical drawings; and the children's consistency of performance over

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<sup>1</sup>Ibid., pp. 49, 81, 82.

an interval of one week when the scorer was constant. The correlation between scoring by the same person was .94; the correlation between scoring by different individuals was .90. A correlation of .68 by the test-retest method supported the reliability of the test.<sup>1</sup>

It was indicated in the Fourth Mental Measurement Yearbook of 1953 that the norms for many tests have shown changes after twenty-five or thirty years. The suggestion was made that the scoring points of the Draw-A-Man Scale be reevaluated and that the test be restandardized.<sup>2</sup> Harris, a colleague of Goodenough, worked with her on a revision and expansion of the original drawing test. Illness and death prevented Goodenough from completing the project, but Harris continued with the research. His recent book contains a revision of the original Man Point Scale as well as an additional scale for evaluating the drawing of a woman. A drawing of the self was included as a potential third form that might prove valuable as a projective device. It was emphasized that the revised scales have built onto but have not substantially changed the basic premises of the original test.<sup>3</sup>

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<sup>1</sup>Dorothea McCarthy, "A Study of the Reliability of the Goodenough Drawing Test of Intelligence," Journal of Psychology, XVIII (July, 1944), 201-16.

<sup>2</sup>Naomi Stewart, The Fourth Mental Measurement Yearbook, ed. Oscar Buros (Highland Park, New Jersey: Gryphon Press, 1953), p. 292.

<sup>3</sup>Dale B. Harris, Children's Drawings as Measures of Intellectual Maturity (New York: Harcourt, Brace and World, Inc., 1963), p. 8.

Frequently the Draw-A-Man Test has been correlated with measures of general intelligence rather than with specific factors of intelligence. In 1952, Ansbacher presented a study designed to provide some quantitative basis regarding the relationship of the Goodenough Test to specific aspects of general ability. The subjects were 100 fourth grade children whose mean age was ten years. As the most convenient instruments for obtaining measures of specific aspects of intelligence, Thurstone's Primary Mental Abilities Test was used. The Tracing, Tapping, and Dotting subtests of the McQuarrie Test for Mechanical Ability were also included in the analysis. The results of the study showed the Goodenough Test to be most highly correlated with the factors of Reasoning ( $r = .40$ ), Space ( $r = .38$ ), and Perception ( $r = .37$ ). Correlations with the McQuarrie Tapping and Dotting subtests were low; however, the correlation with the Tracing subtest was .34. The performance on the Tracing subtest would tend to indicate a subject's willingness to follow directions. According to the investigator in this study, the findings confirm the hypothesis that the Draw-A-Man Test measures the ability to form concepts based on observation, that eye-hand coordination is not the primary factor, and that performance on this test is related to the personality of the individual.<sup>1</sup>

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<sup>1</sup>H. L. Ansbacher, "The Goodenough Draw-A-Man Test and Primary Mental Abilities," Journal of Consulting Psychology, XVI, No. 3 (1952), 176-80.

As early as 1935, Hinrichs recognized the possibility that the Goodenough drawing test might indicate something other than the individual's general intelligence as measured by such an instrument as the Stanford-Binet Intelligence Scale. He designed a study to test the hypothesis that the drawings of human figures measure the general maturity of an individual. The subjects in this study were eighty-one institutionalized delinquents. The Goodenough Test was used as part of a battery of tests. It became evident that the drawings were below the general intellectual levels of the boys producing them and that many of the drawings seemed to relate to the personal characteristics of the individuals involved. Correlations of the Goodenough scores with the Furfey Scale for Developmental Age indicated that there was a relationship to the maturity index of the subjects. The author indicated that it was his hope that others will feel the challenge of this simple test as a tool for studying the individual not only from an intellectual standpoint but from a non-intellectual standpoint as well.<sup>1</sup>

A number of investigations have been concerned with the conceptual aspects of drawing the human figure. One such study was involved with the influence of muscular activity on concept formation. After a group of children had drawn a picture of a man, they were put through a series of

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<sup>1</sup>William E. Hinrichs, "The Goodenough Drawing Test in Relation to Delinquency and Problem Behavior," Archives of Psychology, XXVI, No. 175 (1934-1935), 5-74.

exercises involving certain parts of the body, verbalizing as they did so, e.g., "This is my head, I nod it." Drawings that were made immediately after the exercises showed that the part of the body involved was not only more likely to be shown, but it was drawn with more care for details.<sup>1</sup>

The effect of the Kephart program on the body image of mentally retarded children was studied by Daw. For this particular study of body image, the rationale was based in part on Kephart's theory that claims that the slow learning child is often deficient in gross motor control and body awareness and that physical activity is one means which might enable him to develop a meaningful knowledge of the body. The effect of the Kephart exercises for establishing basic motor patterns on the body image of mentally retarded children was explored by comparing the mean Draw-A-Man age of an experimental group of seven children with that of a control group before and after a period of six months. During this time, the experimental group received selected Kephart exercises. The experimental group showed a marked improvement of eight months in the average Draw-A-Man age as compared with an improvement of only one month in the control group. Kephart's program had the most effect on those children whose mental ages on the Goodenough Test were below the mental ages on the Stanford-Binet Scale. A discrepancy

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<sup>1</sup>Sina M. Mott, "Muscular Activity, An Aid in Concept Formation," Child Development, XVI (March-June, 1945), 97-108.

between the Stanford-Binet mental age and the Goodenough mental age was interpreted to be a useful criterion as to whether or not the children would benefit from the Kephart exercises. In conclusion, the author of the research indicated that if the Draw-A-Man Test is a valid indication of body image, it would seem that the Kephart Motor Training Program would be of value in improving the body image of retarded children.<sup>1</sup>

A similar study investigated the effects of a rhythmic and sensory motor activity program on body image, perceptual motor integration, and psycholinguistic competence of public school kindergarten children. The twenty children who were selected ranked in the lower 50 percent of the class as determined by the Goodenough mental age scores. An experimental and a control group were formed with ten subjects in each group matched on intelligence quotient, chronological age, mental age, and sex. Prior to and following the training program, the Illinois Test of Psycholinguistic Abilities, the Goodenough Draw-A-Man Test, and the Beery Geometric Form Reproduction Test were administered to each child. Twenty-one half hour training lessons were presented to the experimental group extending over a period of seven weeks. The experimental program was sequenced and included rhythmic and sensory motor activities. A comparison of the post-test

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<sup>1</sup>J. F. Daw, "The Effect of Special Exercises on Body Image in Mentally Retarded Children--A Tentative Exploration," The Slow Learning Child, II (1964), 109-16.



scores of the experimental and control groups revealed some interesting findings. The experimental group's mean gain on the Goodenough Draw-A-Man score was 11.9 months as compared to the control group's mean gain of 6.4 months. On the Beery Geometric Form Reproduction Test, the experimental group had a mean gain score of 5.5 months, and the control mean gain was 2.1 months. The experimental subjects' mean gain exceeded that of the controls by two years on the Motor Encoding subtest of the Illinois Test of Psycholinguistic Abilities. The investigator concluded that the positive results of this study illustrate the need for specific training programs for kindergarten children.<sup>1</sup>

In the past twenty years, researchers have increasingly utilized human figure drawings in the study of personality and as diagnostic tools in clinical assessment. Berman and Laffal made an attempt to explore the common assumption that figure drawings are related in some manner to body image. They asked thirty-nine veterans classified as neuropsychiatric patients to draw both the male and female figures. The body types of the figure drawings were compared with the actual body types of the veterans as to endomorphic, mesomorphic, and ectomorphic classification. A significant correlation was found between the body type of the subject and of the figure drawn by him. The investigators suggested

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<sup>1</sup>Genevieve Painter, "The Effect of a Rhythmic and Sensory Motor Activity Program on Perceptual Motor Spatial Abilities of Kindergarten Children," Exceptional Children, XXXIII (October, 1966), 113-16.

that their findings supported the assumption that individuals tend to draw themselves when directed to draw a human figure.<sup>1</sup>

Lakin was interested in the possibility of changes in the body image reflected in figure drawings at disparate age levels of the individual. He compared the drawings of twenty-four institutionalized aged subjects with those of twenty-five normal children in the third grade. It was found that children seem to perform more similarly to younger adults than to the aged who produced more constricted, shorter, and less adequately centered figures. This investigator reported statistically significant evidence to support his assumption that formal aspects of human figure drawings are related to variables of self-conceptualization and body image.<sup>2</sup>

A number of studies have suggested that brain-damage in children and adults may be indicated by distortions in drawing and copying. Bender used the Draw-A-Man Test with a small group of children suffering from post-encephalitic behavior disorders. The intelligence quotient score obtained from the drawings was far below the intelligence score on the Stanford-Binet Scale. The interpretation of the discrepancy was that cerebral damage had caused a considerable

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<sup>1</sup>Sidney Berman and Julius Laffal, "Body Type and Figure Drawing," Journal of Clinical Psychology, IX (October, 1953), pp. 368-70.

<sup>2</sup>M. Lakin, "Certain Formal Characteristics of Human Figure Drawings by Institutionalized Aged and by Normal Children," Journal of Consulting Psychology, XX, No. 6 (1956), 471-74.

disruption of the body image. From this study it was concluded that a marked discrepancy between the two scales may indicate the possibility of brain-injury.<sup>1</sup>

In view of the demonstrated relation of early language development to such factors as socio-economic level and degree of adult contact, Anastasi and D'Angelo deemed it pertinent to investigate language development of Negro pre-school children as compared to white children of the five year age level. The subjects included twenty-five Negroes and twenty-five whites living in uni-racial, unmixed neighborhoods, and twenty-five Negroes and twenty-five whites from inter-racial, mixed neighborhoods. Socio-economic and other background factors were relatively uniform in all groups. Stimulation materials were presented to the child after which sixty consecutive language samples were recorded for each child. Immediately following the language sampling, the Goodenough Draw-A-Man Test was administered to each subject. The linguistic responses were analyzed with respect to mean sentence length and structure. The results of the Draw-A-Man Test and the language sampling for each subgroup were treated by analysis of variance. No significant race differences were found in the Goodenough Test, but girls excelled in all the subgroups. In the white groups, the girls surpassed the boys in mean sentence length; whereas, the Negro

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<sup>1</sup>Bender, "The Goodenough Test," pp. 277-86.

boys surpassed the Negro girls. Mature and more complex sentences tended to occur more often among white children while immature and incomplete sentence types were more prevalent among the Negroes.<sup>1</sup>

A recent study by Coleman and his associates was designed to determine the feasibility of pediatricians using the Goodenough drawing test as a part of the evaluation that is required in Austin, Texas, before the children are admitted to first grade. For several years, it had been the custom of the Children's Medical Center to administer the Goodenough Draw-A-Man Test to all children reporting for their preschool examination. While the impressions based on the use of this test were favorable, it was considered necessary to submit the test to impartial evaluation before the assumptions could be considered valid. Specifically, the researchers of this study wanted to find out if a physician without actual training in the psychologic field could administer and score the test adequately, and if it could be shown that the test was practical as a predictive device for success in school.<sup>2</sup>

The Draw-A-Man Test was administered to 195 children prior to entering the first grade class. The ratings of the

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<sup>1</sup>Anne Anastasi and Rita D'Angelo, "A Comparison of Negro and White Preschool Children in Language Development and Goodenough Draw-A-Man I.Q.," The Journal of Genetic Psychology, LXXXI (1952), 147-65.

<sup>2</sup>J. M. Coleman, Ira Iscoe, and Marvin Brodsky, "The Draw-A-Man Test as a Predictor of School Readiness and as an Index of Emotional and Physical Maturity," Pediatrics, XXIV (1959), 275-281.

modified Goodenough Test were compared with the reading readiness tests given on entry to school, the Primary Form of the California Mental Maturity Test, administered in group form in the second grade, and the achievement records determined by the Metropolitan Achievement Test. An interesting finding of the study was the rather high correlation of the drawings with the verbal part of the California Mental Maturity Test, .62 significant at the .01 level. The correlation of the Goodenough Test with the Metropolitan Achievement Test was lower, .41 significant at the .05 level. A high correlation was found between the scoring of the Goodenough Test by a pediatrician and the same tests as scored by a graduate psychology student, .92 significant at the .01 level. According to the investigators, the results of this research justify the use of the Goodenough Test by pediatricians as a screening procedure for preschool children. Special caution was recommended in interpreting the very poor drawings as evidence of low intelligence. Such drawings should be reevaluated with regard to sight, hearing, neuromuscular, and emotional problems which might have been overlooked in the routine examination. In conclusion, it was suggested that other studies pursue the possibility that the drawings may give an indication of the developing verbal facility of the child.<sup>1</sup>

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<sup>1</sup>Ibid.

Another investigation tested the hypothesis that the Bender Gestalt Test and Human Figure Drawings can predict first grade school achievement. The subjects involved in the research included 143 children from six beginning first grade classes. As a group project, all children were asked to draw an entire person. The Bender Gestalt Test of visual-motor perception was administered individually. The test scores were correlated with scores from the Metropolitan Achievement Test, Primary I Battery (Form R), which was administered seven months after the first two tests. The results showed that the Bender Gestalt Test and Human Figure Drawings have the ability to predict achievement and can be used as screening instruments at the beginning of the school year for the detection of potential learning problems. It was indicated that the Human Figure Tests were scored according to a system devised by Koppitz, one of the investigators of the study.<sup>1</sup>

In 1966, after twenty years of clinical research in the area of language and speech disorders, de Hirsch and her associates published a book which is primarily concerned with a research project that aimed at predicting those preschool children who are most likely to experience academic failure. Assuming that a child's perceptuomotor and language level at kindergarten age forecasts his later achievement in the

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<sup>1</sup>Elizabeth M. Koppitz et al., "Prediction of First Grade School Achievement with the Bender Gestalt Test and Human Figure Drawings," Journal of Clinical Psychology, XV (April, 1959), 164-68.

highly integrated tasks of reading, writing, and spelling, the investigators put together a battery of thirty-seven tests that would reflect, in some measure, the child's perceptuomotor and linguistic competence. The purpose of the study was to determine to what extent certain of these tests would predict reading, writing, and spelling achievement at the end of second grade. The most effective tests for prediction of achievement were singled out and were combined to provide a Predictive Index which could be used as an instrument in identifying children with potential learning problems. Thirty boys and twenty-three girls participated in this study. Negro children constituted 40 percent of the sample which was selected to represent the typical lower middle stratum of an urban society. The intelligence quotients of the sample, obtained from Form L of the Stanford-Binet Intelligence Scale, ranged from 84 to 116. The reading index was devised by combining the Gates Advanced Primary and Gray Oral Reading tests into a single measure of reading competence. Corresponding coefficients were computed for spelling and writing scores.<sup>1</sup>

The human-figure drawing test was one of the tests given to the preschool children to measure body image development. A weak but statistically significant correlation was found between the drawings and the overall reading performance

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<sup>1</sup>Katrina de Hirsch, Jeannette Jefferson Jansky, and William S. Langford, Predicting Reading Failure (New York: Harper and Row, 1966), pp. 3-33.

index and the measures of spelling ability. Since the human figure drawings did not show any significant correlation with writing performance, it was assumed that this type of drawing is not primarily a motor task. It was theorized by de Hirsch that:

A child's body image results from integration of his proprioceptive, sensorimotor, emotional, and social experiences. It does not actually represent a figure seen, but reflects rather the child's awareness of his own body, its parts, and their relationship to each other.<sup>1</sup>

A survey of the research that utilized the Goodenough Test indicates that many investigators have found human figure drawings to be of value in studying various aspects of an individual's development and personality. Although the original uses of the Goodenough Draw-A-Man Test were restricted to the measurement of intelligence, it soon became evident that the drawings could be used satisfactorily to evaluate the body image concept of the child. Most of the authors supported the hypothesis that the way in which children draw human figures reflects their knowledge and sensory experiences of the body image. After many hours of research using figure drawings, one investigator concluded that the figure drawn is intimately related to the individual who is doing the drawing and offers an excellent insight into the psychological make-up of the subject.

The fact that some authorities attach significance to the relationship between learning problems and underdeveloped

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<sup>1</sup>Ibid., p. 36.



body image indicates a need for focusing attention in this particular area of development. Some studies have affirmed the value of using the Goodenough Draw-A-Man Test as part of the screening procedures for preschool children. Other investigators have supported the hypothesis that, in some instances, the Goodenough Test can help to predict academic achievement in the early grades. Few studies have been attempted to relate body image specifically to language development. In view of their findings that showed a high correlation of the Draw-A-Man Test with the verbal part of the California Mental Maturity Test, one team of investigators made the recommendation that subsequent studies should pursue the possibility that the drawings of human figures may give an indication of the developing verbal facility of the child. The need for studying the relationship between the variables of body image and language development was implied by a prominent investigator based on the observation that body image seems to be consistently primitive in children diagnosed as having severe language deficiencies.

It was contended by Goodenough that her experiment, which involved the intellectual aspects of figure drawing, by no means exhausted the possibilities which these drawings possess for the study of child development. The research to date appears to support this premise.

## CHAPTER III

### METHODS AND PROCEDURES

#### Selection of Subjects

The subjects for this study were seventy children, thirty-nine boys and thirty-one girls, enrolled in first grade classes in three different schools in the Irving Independent School District in Irving, Texas. All of the schools included were classified under the Title I Program that is sponsored by the federal government. A provision of this program is to provide funds for the special needs of children who come from low-income families and who have been classified as being "culturally disadvantaged." Chronological ages of the subjects ranged from six years, five months to seven years, eleven months.

The selection of the subjects was based on the following criteria: (1) members of the Caucasian race, (2) English speaking background, (3) normal visual acuity as assessed by the Keystone Telebinocular Screening Test conducted by the public school nurse, (4) normal hearing acuity as determined by the sweep check audiometry administered by the public school nurse, (5) initial first grade experience, and (6) no gross physical abnormalities.

## Measuring Instruments

### The Goodenough-Harris Drawing Test

Originally, the Goodenough Draw-A-Man Test was devised in 1926 as a measurement of intelligence utilizing nothing but the child's drawing of a man. Drawings from 3,593 children, ranging in age from four to ten years, were obtained from schools located in New York City and in various cities of New Jersey. Scores were tabulated according to age and school grade. Consisting of fifty-one points or units of measurement, the Goodenough Scale was derived by the observation of differences which appeared to be characteristic of the performances of children at successive ages or school grades, the formulation of objective definitions or descriptions of these differences, and the statistical validation based on a comparison between the performances of children who were accelerated in school and those who were retarded. The scoring of the Goodenough Draw-A-Man Test depends on the number of details attempted (neck, shoulders, arms, clothing, etc.), the degree of muscular control (as indicated by line firmness and junctures), and on the correct relative proportions of the parts of the body. Raw scores can be converted to mental ages, and the ratio between the subject's mental age and his chronological age is taken as his Goodenough intelligence quotient.<sup>1</sup>

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<sup>1</sup>Goodenough, Measurement of Intelligence by Drawings, pp. 35-47, 81-90.

It has been stated, previously, that although the Goodenough-Harris Drawing Test is a revision of the original Goodenough Draw-A-Man Test, it has not changed but has built onto the basic provisions. In addition to the Draw-A-Man Scale, the revised form provides a scale for evaluating the drawing of a female figure. It is also possible to score a drawing of the self with the point scale of the appropriate sex to be used as a third estimate of intellectual maturity. The standardization and norms for the revised scales were based on 2,975 children from four geographic areas in the United States. The standardization samples were representative of seven levels of parental socioeconomic status.<sup>1</sup>

For the selection of items to be included in the revised scales, the following criteria were used: (1) the items should show a regular and fairly rapid increase with age in the percentage of children passing the point, (2) the items should show a relationship to some general measure of intelligence, (3) the items should differentiate between children scoring high on the scale and those scoring low on the scale as a whole. By these criteria, seventy-three items were selected for scoring the drawings of a man. The Draw-A-Woman Scale consists of seventy-one points that roughly parallel the Draw-A-Man Scale. Both scales contain provisions for scoring the figure drawings of children whose chronological ages are three through fifteen years. The values obtained

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<sup>1</sup>Harris, Children's Drawings, p. 100.

from scoring the man and woman drawings should be combined and averaged to provide a more reliable estimate of test achievement. It was indicated by Harris that the drawing of the self may, possibly, be more useful in studying non-intellectual psychological factors. It is his impression, however, that its general dimensions follow the lines established for the man and woman drawings.<sup>1</sup>

Tables are provided in the test manual (Part II of the Harris book) for converting raw scores to standard scores with a mean of 100 and a standard deviation of 15. Quality scales for convenient and rapid scoring of the drawings have been developed and standardized. The quality scale is not considered as sensitive a measure of development as the point scales. The Goodenough-Harris Drawing Test may be administered easily to children, individually or in groups. Directions are simple, and all that is required is a sheet of paper for each drawing and a pencil. There is no time limit for the test, but young children rarely take more than ten to fifteen minutes for all three drawings of a man, a woman, and the self. The test can be scored by any person capable of following instructions diligently and by studying the manual carefully.<sup>2</sup>

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<sup>1</sup>Ibid., pp. 74-77, 107, 226.

<sup>2</sup>Ibid., pp. 225-42.

### The Peabody Picture Vocabulary Test

The Peabody Picture Vocabulary Test was designed at George Peabody College for Teachers to provide an estimate of a subject's verbal intelligence through the measurement of hearing vocabulary. It consists of two forms (A and B) and has been standardized on 4,102 subjects between the ages of two years, six months and eighteen years. All subjects included in the standardization procedures were administered both forms of the final battery during the period April through June of 1958. Only white children and youth residing in and near Nashville, Tennessee were included in the final standardization group.<sup>1</sup>

The Peabody Picture Vocabulary Test consists of 150 plates representing 300 words. They are arranged in an empirically determined order of difficulty with a fairly even number of plates for each age level. Four separate line drawings are contained on each plate. Criteria for the selection of the four words to be used in composing any one plate were: (1) all four words were found to be of the same difficulty level, (2) all four words demonstrated good linear growth curves in terms of percent passing at successive age levels, (3) words were not used if sex differences existed, (4) the selected words were primarily singular and collective nouns with some gerunds and a few adjectives and

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<sup>1</sup>Lloyd M. Dunn, Expanded Manual for the Peabody Picture Vocabulary Test (Minneapolis, Minnesota: American Guidance Service, Inc., 1965), pp. 5-30.

adverbs, (5) words were omitted which were considered to be culturally, regionally, or racially biased.<sup>1</sup>

Among the advantages of the test as enumerated by the authors, its wide use as a clinical tool was especially noted. The scale may be given to any English speaking resident of the United States between the ages of two years, six months and eighteen years who is able to hear words, to see the drawings, and to communicate by indicating a "yes" and a "no" response. Although the test is untimed, it generally takes no longer than ten to fifteen minutes to administer. Scoring is completely objective and is quickly accomplished. Alternate forms are provided to facilitate repeated measures. The test is discontinued when a basal and ceiling have been established since it is only administered over the critical range for a particular subject. The total raw score is the number of correct responses. By using tables provided in the manual, the raw score can be converted to three types of derived scores: an age equivalent (mental age), an intelligence quotient, and a percentile equivalent.<sup>2</sup>

Reliability coefficients were obtained by the Pearson product-moment correlation on the raw scores at each age level for both Forms A and B. Correlations ranged from .67 at the six year level to .84 at the seventeen and eighteen

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<sup>1</sup>Ibid.

<sup>2</sup>Ibid.

year levels with a median of .77. Standard errors of measurement for IQ scores ranged from 6.00 to 8.61 with a median of 7.20.<sup>1</sup>

The Illinois Test of  
Psycholinguistic Abilities

McCarthy and Kirk designed the Illinois Test of Psycholinguistic Abilities to be used as a diagnostic instrument for assessing the psycholinguistic abilities and disabilities of children between the ages of two years, six months and nine years. The test consists of nine subtests and is based on Osgood's theoretical model of the communication process. Three major dimensions are postulated to specify a given psycholinguistic ability: levels of organization, psycholinguistic process, and channels of communication.<sup>2</sup>

Levels of organization describe the functional complexity of the individual. Two levels are identified as being important for the acquisition and use of language. They are the representational level which mediates activities that require the meaning of linguistic symbols, and the automatic-sequential level which includes activities that require the retention of linguistic symbol sequences and the execution of automatic habit-chains. The normal acquisition

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<sup>1</sup>Ibid.

<sup>2</sup>James J. McCarthy and Samuel A. Kirk, Examiners Manual for the Illinois Test of Psycholinguistic Abilities, Experimental Edition (Urbana, Illinois: Institute for Research on Exceptional Children, University of Illinois, 1961), pp. 1-2.



and uses of language are dependent on both levels of organization.<sup>1</sup>

The psycholinguistic processes comprise the second dimension which encompasses the habits that are required for normal language usage. Decoding, encoding, and association are the three main sets of habits that are considered in the test. Decoding is defined as the ability to understand the meaning of visual and auditory symbols; encoding is the ability to express this meaning into words or gestures; and association is the ability to relate symbols on a meaningful basis.<sup>2</sup>

The third dimension is referred to as channels of communication. This dimension describes the sensory-motor path over which linguistic symbols are received and transmitted. It is divided into mode of reception (input) and mode of response (output). Only the mode of reception, auditory or visual, needs to be specified in testing pure decoding ability. In order to test encoding ability, only the mode of response, vocal or motor, needs to be emphasized. In testing association ability, a combination of abilities simultaneously, the entire channel must be specified. The present test battery contains five subtests which require the specification of channel.<sup>3</sup>

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<sup>1</sup>Ibid., p. 3.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid., pp. 3-4.

All of the six subtests at the representational level assess some aspect of the subject's ability to understand the meaning of symbols, to express meaningful ideas in symbols, or to relate symbols on a meaningful basis. Two decoding subtests are concerned with the subject's ability to comprehend auditory or visual symbols. Auditory decoding, the ability to understand the spoken word, is assessed by a controlled vocabulary test in which the subject is asked to respond in the affirmative or negative to a series of graded questions, the answers of which are dependent upon the subject's knowledge of words rather than upon the content. The ability to gain meaning from visual linguistic stimuli is termed visual decoding and is tested by a picture identification technique in which the subjects select a picture which is most nearly identical, on a meaningful basis, to a previously exposed stimulus picture. Both of the decoding subtests were used in the present study to assess the reception or comprehension of language. Two association subtests have the purpose of examining the subject's ability to relate visual or auditory symbols in a meaningful way. Auditory-vocal association is the capacity to relate spoken words on a meaningful basis and is measured by an analogies test. The Visual-Motor Association subtest measures the ability to relate visual symbols meaningfully. In this test, the subject is required to select from among four pictures the one which relates to a given stimulus picture. The two encoding

subtests are involved with measuring the subject's skill in putting ideas into words or gestures. Vocal encoding is concerned with the ability to express one's ideas into spoken words and is assessed by asking a subject to describe a simple object such as a block or a ball. In order to test motor encoding, the skill required to express ideas in gestures, the subject is presented with a picture of an object and is asked to demonstrate its appropriate manipulation.<sup>1</sup>

The automatic-sequential level deals with the non-meaningful uses of symbols, principally their long term retention and short term memory of symbol sequence. Two types of tests evaluate abilities at the automatic-sequential level. The first is known as the Auditory-Vocal Automatic subtest which provides a measure of automatic habits that produce the syntactical and inflectional aspects of language without conscious effort. Since this ability permits one to predict future linguistic events from past experience, it is measured by requiring the subject to complete a statement with an inflected word. The second type evaluates the capacity to remember a sequential structure. Auditory-vocal sequencing is the ability to repeat a sequence of symbols previously heard. It is assessed by a modified digit repetition test. The competency to reproduce a sequence of visual

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<sup>1</sup>Ibid., p. 4.

stimuli from memory is termed visual-motor sequencing and is tested by requiring the subject to duplicate the order of a sequence of pictures or geometrical designs presented briefly to the subject and then removed.<sup>1</sup>

By assessing a given process at a given level through a given channel, the Illinois Test of Psycholinguistic Abilities provides a psychodiagnostic profile which depicts the abilities and disabilities of a particular subject. The test is administered individually and requires approximately an hour to administer in its entirety.

The 1961 experimental edition of the Illinois Test of Psycholinguistic Abilities was standardized on 700 children. Fourteen age groups were used, beginning with two years, six months and continuing by half year intervals up to and including nine years of age. The means and standard deviations for males and females were calculated separately for each age group. Since no systematic differences were found between the sexes the two groups were combined.<sup>2</sup>

Reliability was tested by the test-retest and the split-half methods. Test-retest reliability was measured on a restricted age range between six years and six years,

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<sup>1</sup>Ibid., pp. 4-7.

<sup>2</sup>James McCarthy and Samuel A. Kirk, The Construction, Standardization and Statistical Characteristics of the Illinois Test of Psycholinguistic Abilities (Urbana, Illinois: Institute for Research on Exceptional Children, University of Illinois, 1963), pp. 14-20.

six months. Coefficients for the nine subtests ranged from .37 to .79. The coefficient of .70 was obtained for the total score. The authors stressed that these estimates were minimal and that stability was this good or better.<sup>1</sup>

Olson and McCarthy designed a research project to assess the concurrent and predictive validity of the Illinois Test of Psycholinguistic Abilities. It was hypothesized that since the Illinois Test of Psycholinguistic Abilities is basically a language test, it should be expected to correlate substantially with other tests of a linguistic character so as to establish concurrent validity. Furthermore, the correlations on which the assumption of validity is based should be stable over a period of time if the Illinois Test of Psycholinguistic Abilities has predictive validity. By administering the total Illinois Test of Psycholinguistic Abilities battery and its subtests and a number of criterion tests to a group of eighty-six linguistically normal children who were selected to optimally resemble the Illinois Test of Psycholinguistic Abilities standardization subjects, concurrent validity data were obtained. Approximately three months after the original administration date, the criterion tests were readministered to obtain measures of predictive validity. The estimates of the concurrent and predictive validity, based on the correlations of the raw data with the criterion tests, were of the magnitude and in the direction expected

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<sup>1</sup>Ibid., pp. 28-33.

by the investigators. However, the individual subtests of the Illinois Test of Psycholinguistic Abilities showed varying degrees of concurrent and predictive validity.<sup>1</sup>

It is interesting to note that two of the tests used in the present study, the Goodenough Draw-A-Man Test and the Peabody Picture Vocabulary Test, were selected as two of the criterion tests. The mean of the raw scores on the Draw-A-Man Test was 19.90 with a standard deviation of 7.70. The correlation of the Draw-A-Man Test with the Illinois Test of Psycholinguistic Abilities was .40, significant at the .01 level. The mean of the Peabody Picture Vocabulary Test was 72.58 with a standard deviation of 7.32. A correlation of .38 was obtained between the Peabody Picture Vocabulary Test and the Illinois Test of Psycholinguistic Abilities.<sup>2</sup>

In their discussion of the interpretation of each subtest based on the correlations with certain of the criterion tests, Olson and McCarthy made interesting observations concerning two of the tests used in the present study, the Visual and the Auditory Decoding subtests of the Illinois Test of Psycholinguistic Abilities. They state that their hunch that the Visual Decoding subtest assesses the comprehension of visual stimuli is further strengthened by its statistically significant correlations with other tests that

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<sup>1</sup>James J. McCarthy and James L. Olson, Validity Studies on the Illinois Test of Psycholinguistic Abilities (Madison: University of Wisconsin, 1964), pp. 12-15.

<sup>2</sup>Ibid., pp. 14, 81.

involve the use of vision in comprehending stimuli, e.g., Raven's Progressive Matrices (.22) and the Peabody Picture Vocabulary Test (.24). The lack of significant correlation of the Auditory Decoding subtest with the Peabody Picture Vocabulary Test (.09) or with the Stanford-Binet Vocabulary Test (.03) argues against the assessment of a simple comprehensive function for this subtest. Its significant correlation with the Similarities subtest of the Wechsler Intelligence Scale for Children (.31) and with the Paragraph Reading section of the Stanford Achievement Test (.28) suggests that the Auditory Decoding subtest appears to assess the ability to comprehend related word sequences whereas its original intent was to assess the comprehension of single words.<sup>1</sup>

#### Procedure

The Goodenough-Harris Drawing Test was administered to each of the three first grade classes on a group basis. The children were asked to draw three figures on separate sheets of paper in the following order: a man, a woman, a self drawing. The points for all three drawings were averaged for each child, and the mean was used as the Goodenough-Harris drawing score. The Peabody Picture Vocabulary Test, Form A, and the Auditory and Visual Decoding subtests of the Illinois Test of Psycholinguistic Abilities were administered to each of the seventy subjects on an individual basis during one session for each child. The testing program extended over a period of six weeks from the first of March to the

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<sup>1</sup>Ibid., p. 18.

twelfth of April, 1968. In each of the three schools that were included in this study, the rooms that were used for individual testing were quiet with a minimum of distracting noise. The tests were administered in the mornings at all of the schools from 8:30 A.M. to 11:30 A.M.

### Statistical Analysis

In order to test the null hypothesis that there will be no significant relationship between the body image concept as indicated by the Goodenough-Harris Drawing Test and the facility of language comprehension as measured by the Peabody Picture Vocabulary Test and the Auditory and Visual Decoding subtests of the Illinois Test of Psycholinguistic Abilities, the collected data were analyzed using the Pearson product-moment coefficient of correlation formula. The IBM 1620 computer at Texas Woman's University was utilized in the statistical analysis. It was stipulated that a correlation at the .05 level would be considered significant.<sup>1</sup>

For the statistical analysis of this study, correlations of raw test scores were computed between the Goodenough-Harris Drawing Test and the Peabody Picture Vocabulary Test, the Goodenough-Harris Drawing Test and the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities, and the Goodenough-Harris Drawing Test and the Auditory Decoding subtest of the Illinois Test of Psycholinguistic Abilities.

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<sup>1</sup>Murray R. Spiegel, Theory and Problems of Statistics (New York: Schaum Publishing Co., 1961), pp. 244-45.



## CHAPTER IV

### RESULTS

#### Correlation of the Goodenough-Harris Drawing Test with the Peabody Picture Vocabulary Test

The analysis of the collected data of raw test scores yielded the mean, which is the average of the raw scores on each test, and the standard deviation, which is the average of the deviations from the mean for each raw score. The range of raw scores on the Goodenough-Harris Drawing Test was between 11 and 34 points. The mean of the raw scores was 19.03 with a standard deviation of 5.32. The range of the raw scores on the Peabody Picture Vocabulary Test extended from 46 to 84 points with a mean of 61.09 and a standard deviation of 6.51. Using the Pearson product-moment coefficient of correlation method of analysis, a correlation of .40 was obtained between the Goodenough-Harris Drawing Test and the Peabody Picture Vocabulary Test. According to the tables published by Guilford, the smallest significant correlation at the .05 level is .233.<sup>1</sup> Therefore, the obtained correlation of .40 is clearly significant at the

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<sup>1</sup>J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, Inc., 1956), pp. 538-39.

.05 level. This correlation is also significant at the .01 level since, according to the table, the smallest significant value of (r) at that level is .302.<sup>1</sup> On the basis of these findings, this researcher rejects the first null hypothesis that stated there would be no significant correlation between the body image concept as indicated by the Goodenough-Harris Drawing Test and language comprehension as measured by the Peabody Picture Vocabulary Test in favor of the positive hypothesis of significant correlation.

Correlation of the Goodenough-Harris Drawing Test  
with the Visual Decoding Subtest of the Illinois  
Test of Psycholinguistic Abilities

On the visual Decoding subtest, the raw scores ranged from 9 through 18 points with a mean of 14.20 and a standard deviation of 2.30. The correlation of .09 that was obtained between the Goodenough-Harris Drawing Test and the Visual Decoding subtest did not reach the .05 level of significance. Therefore, the second null hypothesis of no significant correlation between the body image concept as indicated by the Goodenough-Harris Drawing Test and the comprehension of visual linguistic stimuli as assessed by the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities could not be rejected.

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<sup>1</sup>Ibid.

Correlation of the Goodenough-Harris Drawing Test  
with the Auditory Decoding Subtest of the Illinois  
Test of Psycholinguistic Abilities

The raw scores on the Auditory Decoding subtest ranged from 12 to 33 points with a mean of 24.40 and a standard deviation of 5.10. Although the correlation of .22 between the Goodenough-Harris Drawing Test and the Auditory Decoding subtest did not reach the .05 level of significance, it was very close in value since the smallest significant value of (r) at that level is .233. On the basis of these findings, however, the third null hypothesis that stated there would be no significant correlation between the body image concept as indicated by the Goodenough-Harris Drawing Test and the comprehension of auditory linguistic stimuli as assessed by the Auditory Decoding subtest of the Illinois Test of Psycholinguistic Abilities could not be rejected in this particular study.

Table 1 summarized the data on the means and standard deviations of each test used in this research.

TABLE 1  
MEANS AND STANDARD DEVIATIONS OF EACH TEST

Test	No.	Mean	SD
Goodenough-Harris Drawing Test	70.	19.03	5.32
Peabody Picture Vocabulary Test	70	61.09	6.51
Visual Decoding Test of ITPA	70	14.20	2.30
Auditory Decoding Test of ITPA	70	24.40	5.10

The correlations between the Goodenough-Harris Drawing Test and the three tests that were used to measure the facility of language comprehension are shown in Table 2.

TABLE 2  
CORRELATION OF THE GOODENOUGH-HARRIS TEST  
WITH TESTS OF LANGUAGE RECEPTION  
OR COMPREHENSION

Test	No.	Correlation with the Goodenough-Harris Drawing Test
Peabody Picture Vocabulary Test	70	.40*
Visual Decoding Test of ITPA	70	.09
Auditory Decoding Test of ITPA	70	.22

\*Significant at the .05 level.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Summary

The presence of communication disorders in a large segment of the school population, particularly in those children from low income families, emphasizes the need for increased attention in this area on the part of the public school speech therapist. Much of the research to date has indicated that many culturally disadvantaged children come to school with deficiencies in the language skills that are necessary for academic success. The speech therapist must share with the classroom teacher the responsibility of evaluating large numbers of first grade children so that language disorders can be detected as early in the school experience as possible.

In the process of evaluation, insight must be gained as to a child's competency in comprehending auditory and visual symbols. Developmentally, a foundation for language comprehension must be built before a child can be expected to communicate with others by means of expressive language. Therefore, analysis in the area of receptive language is

essential. Equally as pertinent is the investigation of areas of development that are assumed to be related to language learning. One important area, according to a number of authorities, is the development of body image, a learned concept resulting from the observation of movements of parts of the body, the functions of these parts, and their relationship to each other and to external objects. It has been observed that the body image concept seems to be consistently immature in children who have severe language deficiencies. The purpose of this paper was to explore the possibility of a relationship between the concept of body image and the facility in language comprehension of seventy first grade children enrolled in three Irving, Texas public schools that are classified under the federal government's Title I Program. This classification indicates that there is a concentration of low income families living within the boundaries of the school district.

The Goodenough-Harris Drawing Test, a revision of the original Goodenough Draw-A-Man Test, was utilized to obtain an indication of the body image concept of the subjects. To provide a measure of the child's comprehension of the spoken word, the Peabody Picture Vocabulary Test was used. The Visual and Auditory Decoding subtests of the Illinois Test of Psycholinguistic Abilities served the purpose of assessing the subject's understanding of auditory and visual linguistic stimuli.

Using the Pearson product-moment coefficient of correlation formula for the statistical analysis, the raw score data were analyzed on the IBM 1620 computer at Texas Woman's University. It was stipulated that a correlation at the .05 level would be considered significant. The first null hypothesis that there will be no significant correlation between body image concept as indicated by the Goodenough-Harris Drawing Test and the comprehension of the spoken word as measured by the Peabody Picture Vocabulary Test was rejected on the basis of the obtained correlation of .40, significant beyond the .01 level. The correlation of .09 of the Goodenough-Harris Drawing Test with the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities did not reach the .05 level of significance. Therefore, the second null hypothesis of no correlation between these two tests could not be rejected. Although the correlation of .22 between the Goodenough-Harris Drawing Test and the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities did not reach the .05 level of significance, it was very close in value since the smallest significant value of ( $r$ ) at that level is .233. However, the third null hypothesis that stated there would be no significant correlation between the body image concept as indicated by the Goodenough-Harris Drawing Test and the comprehension of auditory linguistic stimuli as assessed by the Auditory Decoding subtest of the Illinois Test of

Psycholinguistic Abilities could not be rejected since the correlation did not meet the exact requirements of the standards designated for testing the hypothesis.

### Conclusions

A study which utilizes the coefficient of correlation method of analysis must be regarded as exploratory in nature rather than definitive. This project was designed for the purpose of exploring the possibility of a relationship between the two areas, body image concept and the facility of language comprehension. Any conclusions or generalities that are formulated must be made on the basis of the results of the testing program of a sample of first grade children enrolled in schools that qualified for federal funds under the Title I Program. A school district entitled to the Title I Program must have a concentration of low-income families.

The views, observations, and theories of a number of authorities have helped to guide this study. Kephart suggests that as a starting point in the evaluation of a child's difficulties and problems, it is advantageous to investigate the child's body image development.<sup>1</sup> Schilder points out that human figure drawings often reflect a child's knowledge and sensory experience of the body image.<sup>2</sup> It was stated by de Hirsch that the Goodenough Drawing Test provides a measure of the maturity of the body image concept. She has

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<sup>1</sup>Kephart, The Slow Learner in the Classroom, p. 50.

<sup>2</sup>Schilder, The Image . . ., pp. 11, 45, 106.



observed that the children with severe language deficiencies seem to be consistently weak in the development of an integrated concept of body image.<sup>1</sup> Cruickshank has observed that, in some children, a close relationship exists between the developing body image concept as depicted in human figure drawings and the initial development of reading and number concepts.<sup>2</sup> On the basis of these assumptions, one would expect the Goodenough-Harris Drawing Test to correlate significantly with selected tests that purport to measure receptive language, the ability to comprehend auditory and visual symbols.

A statistical analysis of the collected data showed a significant correlation between the Goodenough-Harris Drawing Test and the Peabody Picture Vocabulary Test. It must be recognized that both of these tests are known to measure some aspect of intelligence, and that both tests have been found to correlate significantly with standard IQ tests. However, for the purpose of this paper, the question was probed as to whether success in performance on the Goodenough-Harris Drawing Test would necessarily mean success in performance on the Peabody Picture Vocabulary Test. The results of this study show that performance on the Goodenough-Harris Drawing Test can predict, to some extent,

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<sup>1</sup>de Hirsch, "Gestalt Psychology," p. 258.

<sup>2</sup>Cruickshank, Psychology of Exceptional Children and Youth, pp. 318-19.

performance on the Peabody Picture Vocabulary Test. Although the correlation between the Goodenough-Harris Drawing Test and the Auditory Decoding subtest of the Illinois Test of Psycholinguistic Abilities was close to significance, it cannot be relied on to make any generalizations for this study. The lack of any significant correlation of the Goodenough-Harris Test with the Visual Decoding subtest of the Illinois Test of Psycholinguistic Abilities might tend to indicate that the former is more interrelated with the auditory aspects of language comprehension than with the aspects that are primarily visual.

A number of research projects that have been previously reported lend support to the possibility of a relationship between the body image concept as indicated in human figure drawings and language development. Olson and McCarthy obtained a correlation of .40, significant at the .01 level, between the Goodenough-Harris Drawing Test and the total test battery of the Illinois Test of Psycholinguistic Abilities, using a sample of eighty-six linguistically normal children.<sup>1</sup> Another study, directed by Coleman, obtained a correlation of .62, significant at the .01 level, between the Goodenough-Harris Drawing Test and the verbal part of the California Mental Maturity Test on a

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<sup>1</sup>McCarthy and Olson, Validity Studies on the Illinois Test of Psycholinguistic Abilities, pp. 12-15.

sample of 195 children prior to their entrance to first grade.<sup>1</sup> A significant correlation was obtained by de Hirsch between the human figure drawings of fifty-three preschool children to measure body image development and a reading performance index obtained at the end of second grade.<sup>2</sup> One method study investigated the effects of a rhythmic and sensory motor activity program on the body image development of public school kindergarten children. The experimental group's mean gain score on the Goodenough Draw-A-Man Test, administered as a pre-test and a post-test to evaluate body image concept, was 11.9 months as compared to the control group's mean gain of 6.4 months.<sup>3</sup>

It would seem feasible to this writer, on the basis of the findings of this research project and supported by the conclusions of other similar studies, to include the Goodenough-Harris Drawing Test in a screening program of first grade children, particularly those in schools classified under the Title I Program, as an aid in the detection of difficulties in the areas of both body image development and language comprehension. Although a screening device provides only a cursory evaluation, it can be used to select those children in need of immediate attention who might otherwise

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<sup>1</sup>Coleman, Iscoe, and Brodsky, "The Draw-A-Man Test," pp. 275-81.

<sup>2</sup>de Hirsch, Jansky, and Langford, Predicting Reading Failure, pp. 3-33.

<sup>3</sup>Painter, "The Effect of a Rhythmic and Sensory Motor Activity," pp. 113-16.

be overlooked until later in the school term. The Goodenough-Harris Drawing Test offers another possibility in that it could be used as a diagnostic tool by the speech therapist who is required to plan language development classes for entire first grade classrooms. Frequently the public school speech therapist must initiate remedial procedures before he has had the opportunity to evaluate the abilities or disabilities of the children. An analysis of the human figure drawings might possibly indicate the level of maturity of the body image concept of a group of children as a whole which, if followed through, might provide a starting point for the therapist's exploration as to the type of therapy that is required to meet the needs of the majority of the children in the class.

The Goodenough-Harris Drawing Test has impressed this writer with its many attributes, among which are the ease of administration to large groups, the economy of time, and the reliability of scoring. In addition, the writer has observed that the test reveals information about the child's level of maturity and personality traits. The speech therapist can utilize the drawings as permanent recordings of a child's performance at the onset of therapy as compared to his performance on subsequent drawings during the therapy program. Although the original purposes of the Goodenough Draw-A-Man Test have been extended by the findings and theories of current researchers, further investigation

including the subjective as well as the objective analyses of children's drawings of the human figure in relation to body image development and language development is recommended. It is this writer's hope that this paper will serve the purpose of stimulating exploration in this area.

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