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COMPARISONS OF DRAW-A-CHILD TEST AMONG

PRESCHOOL CHILDREN

by

Margaret Prather Ezell

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Child Development

Approved:

Utah State University
Logan, Utah
1975

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Margaret Prather Ezell

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ABSTRACT

Comparisons of Draw-A-Child Test
Among Preschool Children

by

Margaret Prather Ezell, Master of Science

Utah State University, 1975

Major Professor: Dr. Carroll Lambert
Department: Family and Child Development

McCarthy's Draw-A-Child test was administered to 20 lower class and 20 middle class four-year-old children matched for age and sex. The purpose of the test was to find if socio-economic class and sex differences effected the child's ability to draw a same sex figure. Analysis of results supported the theory that girls do better than boys. Analysis of socio-economic differences suggests that lower-class children do not have the ability to draw as well as middle class children but the difference is not significant at the .05 level. It was concluded that the McCarthy Draw-A-Child test measures the general drawing abilities which are influenced by life experiences.

(124 pages)

INTRODUCTION

The art work of a child is more than a mere scribble on a piece of paper. The child is using his scribble as a way of communicating his innermost feelings. When a child first starts to scribble, his drawings may not make any sense to the adult but he is at an important stage of growth. Scribbling leads to more advanced forms of communication such as drawing, painting and the written word. Scribbling at the preschool stage prepares the child for the complicated tasks of reading and writing. Besides preparing the child for the fine muscle coordination of writing, scribbling is fun.

The young child usually begins to scribble at around the age of eighteen months. Gradually he progresses to the stage of naming his scribbles. As this happens he begins to see that his scribbles suggest what he can see in his environment. He gradually gains fine muscle control and begins to express himself graphically with representational art or abstract art. A study of preschool art shows that "all children work primarily in esthetic fashion and that the "Q" frame (abstract art) of reference is not only a healthy one, but it seems to reflect cerebral capacity as well as does pictorial work." (Kellogg, 1969, p. 188)

The structure of a child's drawing is determined by his age and level of maturation, but the style of his drawing reflects his attitudes and what concerns him at the time of drawing. The child tends to emphasize what is important to him while he usually omits those things

that he considers subordinate or inferior.

The life experiences of a child may help to determine the general abilities of a child. The child who has never held a pencil or crayon would be at a loss if he were asked to draw an object. The child who has never been encouraged to draw is likely to draw less well than the child who has been encouraged all of his life.

During early childhood, the most common things drawn are human beings, animals, houses, and trees. Anastasi and Foley (reported in DiLeo, 1970) found that humans are the most popular subjects in children's drawings, ranking at about the 75 percent level while animals are second at the 7 percent level. Since humans have been found to be the most frequent subject of children's drawings, it is only natural that tests should be devised using the drawing of the human figure as the central focus.

In 1926 Goodenough developed the first drawing test with the idea of testing intelligence. Since that time many forms of drawing test have been devised.

The use of a drawing test with young children has been found to be advantageous because of its ease of administration, economical use of time and it can be used with those children who have difficulty with verbal responses. Hammer (1960) has suggested that a child's drawing represents a form of symbolic speech. Drawing may be welcomed by the verbally shy or inhibited child as a motoric medium. The use of a drawing as a test makes work enjoyable for the child and the examiner.

Statement of the problem

The problem investigated in this study was the influence of socio-economic grouping on the ability of four-year-old preschool

children to draw a child, using McCarthy's Draw-A-Child Test. The McCarthy Draw-A-Child Test measures the general abilities of the child as they relate to drawing. The test is not meant to measure the child's intelligence. Specific reference was made to:

1. The stage of drawing ability the child had attained as it related to age. Disordered scribbles, controlled scribbles, named scribbles vs. representative drawings.
2. Attitudes reflected by comments and drawings.
3. The completeness of the drawing.

Purpose

This study was done to provide insight into the drawing ability of four-year-old preschool children. The investigation examined the variables of age level, sex and socio-economic group to determine whether the stage of drawing ability could be attributed to the socio-economic group or to the sex of the child. This study endeavored to determine if a difference exists between the drawing abilities of preschool children from middle and low income families.

Hypotheses

1. There will be a difference between middle class children and lower class children on the ability to perform on a Draw-A-Child test.
2. There will be a difference between boys and girls on total scores on the ability to draw on a Draw-A-Child Test.

REVIEW OF LITERATURE

Introduction

During the late 19th century researchers began to focus on children's drawings as a possible key to their minds. The observers quickly noticed that children liked to draw objects that they were familiar with, such as humans, trees, houses, animals and boats. The observers began to measure drawings by millimeters but the study of drawings by elements and details soon came into the forefront. This analytical method of assessing a score for a drawing has been well researched.

Since the conception of the first specific Draw-A-Person Test by Goodenough in 1926, substantial amounts of research have been published on human figure drawing. Human Figure Drawing and associated tests include Draw-A-Man, Draw-A-Child, Draw-A-Family, Kinetic Family Action Drawings, Human Figure Drawings, Easel Age Scale, Draw-A-Person, House and Tree; and Complete-The-Man. As the tests have increased, so have the contradictions but as time has passed the research has improved substantially in quality and sophistication and much empirical support has been produced for the use of human figure drawing as a clinical tool. Some of the general findings are:

1. Socially and emotionally maladjusted children score somewhat more poorly than the adjusted child of the same general intelligence and age.
2. Drawings fail to predict which child will be a delinquent.
3. Girls tend to have higher scores than boys.

Most of the research using Human Figure Drawings has been done using adults as subjects. For that reason the literature relating to adults has been included in this review.

Human figure drawings as measures of intelligence

Goodenough (1926) in her original work conceived the idea of using human figure drawings for measuring intelligence. She scored the drawings for mental ability by a quantitative method. Her major assumption was that the content and nature of children's drawings is primarily dependent upon intellectual development. She also discussed two possible applications of human figure drawings. She foresaw the use of children's drawings to study personality and the use of figure drawings as intelligence measures with children limited by lack of language.

Harris (1963) in his revision and extension of Goodenough's work stated that it was desirable to replace the idea of intelligence with the idea of "intellectual maturity" and maybe more specifically the idea of "conceptual maturity". (1963, p. 5) This change in terminology moves one away from the notion of unitary intelligence and allows consideration of the child's concept of the human figure as an index to his concepts generally. Harris (1963) conceived of intellectual maturity as the ability:

1. To perceive likenesses and differences,
2. To abstract or classify the likenesses and differences, and
3. To generalize or assign an object to a correct class according to the properties perceived. (p. 5)

A child's drawing then will reveal the nature of his concepts about

the "man", "woman", or "self" that he draws.

Kellogg (1969) criticized the idea of intellectual majority or "conceptual maturity" because she says human figure drawings by children do not reflect their concepts. Kellogg believes that children do not draw from "life" but that "they first learn to draw by observing their own drawings and those of their peers." (1969, p. 181)

According to Kellogg (1969, p. 181) "the child's natural system of drawing undoubtedly does reveal both perceptual and conceptual abilities, but the three Harris art tests do not measure them in relation to art or to knowledge of the Gestalts of live human beings. They do not even measure capacity for drawing what the adult thinks is a 'good' likeness of a man or an object." Kellogg blasts the Harris test by stating it would be hard for many adults to draw a man that would rate very high. Kellogg then suggests that the drawings used for standardization were done by children who had little opportunity to draw. (1969, p. 181) Kellogg (1969, p. 181) quotes a study by Griffith done in 1945 in which it was found that the mental age of a 3.10 year old varied from 3.9 to 4.6 over a twenty day period when the Goodenough test was used. In a study by Yater, et al. (1971) it was found that the W.P.P.S.I. and the Goodenough-Harris Draw-A-Man were not comparable measures for Head Start children.

Human figure drawing and personality testing

Machover (1949) theorized that the figure drawn by a subject represented his view of his body and emphasized the value of human figure drawing as a projective test of personality adjustment. Machover felt that when a subject was directed to draw a person, the figure drawn

related the "impulses, anxieties, conflicts and compensations characteristic of the individual. In some sense, the figure drawn is the person, and the paper corresponds to the environment." (1949, p. 35) Machover (1949) did not intend to construct a "check list of signs" which could be used to mechanically diagnose (p. 21), but a check list has since been constructed from Machover's 1949 work. (See Burns and Kaufman, 1972, p. 297). Much work has since been done on each aspect of body image, but a problem is still inherent in all testing: When determining what human figure drawings really are is a problem of measurement validity.

Swensen (1968) concluded after a review of all the literature from 1957-1966 that "the value of a particular sign on the DAP is directly related to the reliability of that sign." (1968, p. 40)

Koppitz uses human figure drawings for reflecting positive or negative indicators. Positive indicators reflect good intelligence (1967) while negative indicators reflect emotional problems and/or mental retardation (1966).

Easel Age Scale

The Easel Age Scale is still another type of intelligence test. The scale was devised by Beatrice Lantz for use with paintings, not drawings, done by children age four to nine years. The major assumption of the test is that the painting done by a child of an object records what he has observed about the subject. Lantz eliminates the human figure from the test because children's drawings do not look like human beings. (1955, p. 14) The majority of the paintings used for study are of houses or boats yet the favorite subject of child art is the human figure. Paintings are rated on scales for form, detail, meaning, and

relatedness. The score is then converted into an Easel Age. The reliability and validity of the Easel Age Scale has been "satisfactorily correlated with other tests including the Goodenough test." (Kellogg, 1969, p. 86) Lantz (1955, p. 10) states that "special effort has been made to avoid turning the Easel Age Scale into a measure of artistic ability."

Bender Motor Gestalt Test,
Draw-A-Design and Complete-A-Man

Another form of children's art is used in Bender Motor Gestalt Test based on Gestalt psychology. The Bender test assumes that when one sees an object the retina of the eye receives many whirling spots of reflected light. The brain then organizes the spots into segments of circles or whole closed circles which then become the image that is seen. (Kellogg, 1969, p. 182) The Bender test "presents the child with eight adult drawn, unesthetic Gestalts (forms), which he is to copy." (Kellogg, 1969, p. 183) The Gestalts are not of a form that a child would spontaneously make. According to Kellogg, these forms look "wrong" to the child. (p. 183)

The Bender Test can be evaluated in two ways:

1. As a test of developmental maturity in visual-motor perception,
or
2. As a test of emotional adjustment. (Koppitz, 1972)

The drawings are analyzed for form, integration of parts, detail of the figures and the directionality of design when scoring for visual-motor perception. When scoring for emotional attitudes, the emphasis is on the size of the drawings, the location of the figure on the paper, the quality of the pencil line, and the organization of figures on the

paper. The two basic assumptions of the test are:

1. Basic intelligence increases with age; and
2. Basic intelligence can be measured by the ability to duplicate Gestalts.

Maturity in visual motor perception is largely a function of age and intelligence, Koppitz reports. (1972)

Koppitz (1972) reported on a study she did with Sullivan, Blyth and Shelton in 1959. They found, that the Bender-Gestalt Test is augmented by using it in combination with the Human Figure Drawing Test. Koppitz (1972) found no difference in the mean scores between boys and girls on the Bender. She reported the time to complete the test averaged between 4 to 9 minutes. Koppitz uses H.F.D. with Bender-Gestalt test in two types of limited screening operations:

(1.) "For screening of kindergarten and beginning first grade pupils to discover children with high academic potential who are ready to begin formal academic training and who would profit from an enriched curriculum"; and

(2.) "For the differentiation between school children, kindergarten through fourth grade, who have immature visual-motor perception and who have or do not have learning and emotional problems."

(Koppitz, 1972, pp. 20-21)

The Complete-A-Man Test asks the child to fill in an incomplete figure with the missing parts while the Draw-A-Design asks the child to copy a figure on the blank portion of a page from the figure above. These tests have been used extensively with preschoolers because of the simple format but it has been found that the ability to reproduce such forms increases with age. (Graham and Berman, 1960)

Human Figure Drawing Test

The Human Figure Drawing Test was developed by E. M. Koppitz from

the work by Aschuler and Hattwich (1947), Machover (1949), Goodenough (1926) and Harris (1963). Koppitz scores the H.F.D. using thirty Development Items which she derived from her own experience and that of Goodenough-Harris. (Koppitz, 1968, p. 9) The three basic principles behind the analysis of each drawing are:

1. How a child draws a figure, regardless of whom he draws, reflects his own self-concept.
 2. The person WHOM the child draws is the person who is of greatest concern and importance to the child at the time he is making the drawing.
 3. What a child is saying in his H.F.D. may be twofold: It may be an expression of his attitudes and conflicts, or it may be a wish dream, or both.
- (Koppitz, 1968, pp. 75-77)

According to Koppitz, the picture that a child produces in a clinical situation is different from one done spontaneously by the same child. The picture drawn during the clinical situation represents a form of graphic communication between the child and the clinician.

Koppitz grouped her Developmental Items into four groups: "Expected", "Common", "Not Unusual" and "Exceptional". She hypothesized that "exceptional" items would be on the drawings of those children with above average mental maturity. (1968, p. 13) Koppitz also indicates that her Developmental Items are not effected significantly by the child's drawing ability, nor training in kindergarten, or by the drawing medium that is used. (pp. 33-34) Koppitz believes that the H.F.D. test can be strengthened by using it with the Bender-Gestalt test or with a battery of tests. (p. 177)

Disagreeing with Machover (1949), Koppitz believes that the H.F.D. does not reflect the body image of the drawer. Koppitz cautions against trying to form simple explanations and interpretations of signs.

There appears to be a consensus among the experts on H.F.D.s that no one-to-one relationship exists between any single

sign on a H.F.D. and a definite personality trait or behavior on the part of the boy or girl making the drawing. Anxieties, conflicts, or attitudes can be expressed on H.F.D.s in different ways by different children or by one child at different times. This writer can only underscore what others have emphasized again and again: It is not possible to make a meaningful diagnosis or evaluation of a child's behavior or difficulties on the basis of any single sign on a H.F.D. The total drawing and the combination of various signs and indicators should always be considered and should then be analyzed on the basis of the child's age, maturation, emotional status, social and cultural background and should then be evaluated together with other available data.

(Koppitz, 1968, p. 55)

Draw-A-Family and Kinetic Family
Action Drawings

Draw-A-Family has been written about by Hammer (1958), Hulse (1952, 1951), Reznikiff and Reznikiff (1958), DiLeo (1970) and Burns and Kaufman (1970, 1972). These authors have suggested that through drawing a family the child expresses his attitudes toward other members of his own family and the role he perceives as his own. The relationships within the family are expressed by placement and size of the figures in the drawing and by the omission, substitutions, or exaggerations of the figures or part of them. The omission of parents of siblings can be very significant to the clinician. Some children omit themselves from the drawing. One clinician (Koppitz, 1968, p. 135) feels this is because they do not feel like a significant part of the family.

Luquet (in DiLeo, 1970, p. 38) observed that a child's figure drawings do not represent the child. This would seem to be at variance with the view that in drawing a person, the child is projecting his own body image.

In Draw-A-Family Tests, "particular attention is directed to the

following features:

Size of individual figures (like the ancient Egyptians, the child used size to express importance, power), order in which the figures are drawn (those that most impress him are drawn first), his position in the family group (as an expression of his status), is he present at all? (feelings of not belonging), has anyone been excluded? (desire to eliminate) who is he next to? or between? is the sex of family members distinguishable? whom has he embellished by addition of extra clothing or ornamentation? who has accentuated arms and hands? (symbols of force, aggression), what has he added other than persons? (pets, trees, houses, sun)."

(DiLeo, 1970, p. 190)

The value of using the family drawing test is considerable when one realizes that the child often expresses his feelings and attitudes toward individual members of his family as well as expressing his own position within the group. He tells how he feels about himself and about his family while telling less about what he knows and his intellect.

DiLeo (1970, p. 96) states, "The superior quality of the individual figure is interpreted...as indicating a more intellectual response to this task in contrast to the more emotionally influenced response evoked by the request to draw his family."

Spontaneous drawing, Koppitz (1968, p. 128) feels tend to reflect positive relationships whereas, in H.F.D., the child will usually draw a fairly faithful representation. If his attitudes are negative, "he will distort and disguise his figure." (p. 130) In American culture, it is not nice to openly express hostile feeling so some disguise becomes necessary.

The major difference between Draw-A-Family and Kinetic Family Drawings is action. All kinetic drawings show the person in some form of action. Family drawings are used mainly for psychological purposes

and as such are not scored but are evaluated for feelings.

Draw-A-House and Draw-A-Tree

Hammer (1960) suggested that a child will not reproduce "flaws" (disabilities) unless "they have impinged upon the subject's self concept and have created an area of psychological sensitivity." (p. 266) In regard to drawing a person, the elicited response is principally one of three themes: "1. A self portrait, 2. An ideal self, and 3. A depiction of one's perception of significant others (parents, siblings, etc.)." (p. 265)

When a child is asked to draw a house, his attitudes to the home situation can be tapped along with his relationship to parents and siblings. (Hammer, 1960, p. 263)

Hammer (1960) believes that the drawing of a tree reflects the deeper and more unconscious feelings of a person. Whereas the Draw-A-Person test conveys the "closer-to-conscious view of himself and his relationship to his environment". (p. 263)

The drawing of a tree is less susceptible to change on retesting than the person, therefore, Hammer feels that the drawing of a tree can draw upon the more basic and long standing feelings of the child.

Age

"As Kellogg (1959) observed, the structure of a young child's drawing is determined by his age and level of maturation, while the style of the drawing reflects his attitudes and those concerns which are most important to him at that time." (Koppitz, 1968, p. 5) Most children satisfied with their own age tend to draw human figures that are the same age or two to three years older. Children who draw human figures much younger than themselves tend to find little satisfaction in

their present life. They seem to be longing for an earlier, happier period, reports Koppitz (1968, p. 94) Lehner and Silver (reviewed in Kellogg, 1969, p. 267) indicate that one's own age tends to be projected in drawings.

Koppitz (1968) in analyzing developmental items found, that only hair and pieces of clothing were related to a child's age.

Sex

From the very early years the drawings of girls are more mature than those of boys. According to Machover (1960, p. 239), the drawings done by girls are more: realistic, detailed, mature in body concept, flexible. The drawings of girls are tidy and orderly, and have more emphasis on facial features, cosmetics and clothing. Machover (1960) sees the drawings done by boys as deflated, crude and apologetic. The drawings by boys of themselves tend to shrink drastically in size, says Machover (1960, p. 239) while often being placed at the bottom and left of the page. The drawing done by boys are "singularly lacking in vigor of limbs, posture, or extension. Limbs are short, often weak, cut off and poorly integrated with the trunk." (p.239)

Koppitz (1968), Harris (1963) and Goodenough (1926) were found to be in accord with the findings of Machover (1960) in that the drawings of girls in the primary grades are superior to those of boys.

Hammer and Kaplan (1966, p. 318) found that among 4th, 5th, and 6th grade boys and girls: Boys significantly exceeded girls in drawing teeth, buttons on the same sex figure, heads without bodies and shading, while the girls significantly exceeded boys in the omission of body parts, drawing buttons on the opposite sex figure, and a tendency to erase more than boys.

Koppitz (1965, p. 193) found that younger boys tend to do better drawings with crayons than with No. 2 pencils while girls tend to draw about the same with either medium. She suggests that preschool boys might better be able to do drawings with crayons but that preschool girls can use either with little difference in results. (1968, p. 23)

Richey (1965 quoted by Koppitz, 1968, pp. 5-6) reported that the same sex H.F.D.s of children tend to be superior in quality to opposite sex H.F.D.s. Children usually draw the same sex figures first; therefore, it follows that most first drawn H.F.D.s will be superior in quality to later ones.

Koppitz (1968, p. 14) reports the expected items in the drawings of five-year-old boys and girls along with the exceptional:

<u>Boys</u>	<u>Expected</u>	<u>Girls</u>
head		head
eyes		eyes
nose		nose
mouth		mouth
body		body
legs		legs
		arms
arms	<u>Common</u>	feet
feet		hair
fingers		fingers
hair		two dimensional arms
	<u>Not Unusual</u>	
two dimensional legs		two dimensional legs
neck		eyebrows
hands		hands
ears		pupils
eyebrows		arms pointing down
		ears
		correct number fingers
pupils	<u>Unusual</u>	
two dimensional feet		two dimensional feet
correct number of fingers		good proportions
arms at shoulder		nostrils
good proportions		two lips
nostrils		elbow
profile		profile
elbow		arms at shoulder
two lips		knee
knee		

With respect to clothing, says Koppitz (1968, p. 14) the five-year-old boy usually draws no clothing or one piece. It is the exception to find more than one piece. The five-year-old girl may draw no clothing or only one piece, however, two or three pieces are not unusual. The presence of four or more pieces of clothing at this age is exceptional, says Koppitz. (1968, p. 15-16)

Koppitz (1968, p. 19) found that certain items tend to show up in drawings as "masculine" or "feminine". These items were also found by others so they cannot be attributed to chance, but must be characteristic of the drawings of American boys and girls. The items may be effected by the attitudes the child has learned. The "masculine" items are: the profile drawing, the knee, and the ear. The "feminine" items are: hair, pupils, eyebrows, two lips, and clothing.

Children of 4 and 5 who have not as yet had much contact with the outside world, according to Machover (1960, p. 243) "exhibit less differences between the sexes than at any other age."

Sinha (1970, p. 222) found that boys have a greater concern for proportion while girls have a greater concern for details.

According to DiLeo (1970, p. 164) "...differences in clothing are generally the ways in which further differentiation of the sexes is represented by the young child."

Boys, 4 or 5 years of age, tend to project his figure in a larger size with heavier lines in the middle or to the right on the page in an H.F.D., according to Machover (1960, p. 245) along with more aggressive and disorganized shading. The female, reports Machover (1960, p. 246) also draws large heads for control, but "they are more round, more even in contour and enhanced with decorative or cosmetic touches. She may

express contempt for the male by drawing him smaller and more childish. Envy for the boy is shown by the girl at around age 5 according to Machover. (1960, p. 246) The girl of five draws the opposite sex first more often than at any age until she reaches the age of 12 when she is asked to draw both.

In 1972 Keogh used the D-A-P in her study of field independence-dependence, reflection-impulsivity, and problem-solving styles of preschool children. She found absences of sex differences on the D-A-P. She attributes the results to the age of the children or to the unreliability of the instrument.

Race

Many studies have been reported on concerning race. For each study done a counter study can be found showing results adverse to those of the original study.

Wise (1969) asked 20 negro and 20 white adolescents to fill out an evaluation of a human figure drawing. His results supported those of Dennis (1966) who found that both white and Black Americans drew white people. In contrast, McWhinne (1972) found that when Black and white children were given black paper and a white crayon to draw with, neither group filled in the figure to make him white. McWhinne then suggest that the color of the figure might be related to the color of the paper.

O'Keefe (1972) found that age, sex, and ethnic group membership influenced the performances of 120 disadvantaged preschool children on the Goodenough-Harris Drawing test. The score of girls was significantly higher than those of the boys. The scores of white children were significantly higher than those of Black children and the scores of

older children were significantly higher than those of younger children. In O'Keefe's study, there were equal numbers of Blacks-whites, male-females, divided equally into three age ranges. In contrast, Datta (1967) found that Black children did not obtain lower mean scores than white children on a national survey.

Keogh (1972) found that Norwegian girls scored higher than Norwegian boys on the Draw-A-Person test but that their scores were slightly lower than the standardized mean of American children.

Wiltshire and Gary (1970) found that Canadian Indian girls scored higher than the boys but they found a significant difference in the scores projected and the scores obtained. Wiltshire and Gary warn that the D-A-P may not be as culture free as was thought.

Sternlof, et al. (1969) found that both Negro and white Head Start children scored significantly lower than their chronological ages on the Draw-A-Man. They suggested caution in the use of Draw-A-Man with deprived children.

Gaddes, et al. (1968) found no cultural differences between Indians and whites on the Draw-A-Man when they were matched broadly on age, sex, intelligence and socio-economic differences.

Georgas and Papadopoulou (1968) found no sex differences in the scores of Greek five-year-olds but they did find that the sample means for the group were equal to or slightly lower than American averages.

Olivier and Barclay (1967) found that with Head Start children, the Stanford-Binet and Goodenough-Harris scores were not highly correlated. They suggested that each test needs a different skill. They did find that girls scored superior to boys and that white children scored superior to Negro children.

Johnson (1967) used the Draw-A-Man test on Guatemalan boys and Ladino children. He found that the boys scored higher but there was no important difference between Indians and Ladinos.

Muzekari (1967) used the Stanford-Binet and the Draw-A-Man on Negro and white public school children. He tried to find a relationship between the two tests. He concluded that the use of the Draw-A-Man with Negro children was questionable.

Goffney and Butler (1969) studied the self-image of negro children using the Draw-A-Person Test. They compared 232 seven year old Negro children with 466 white children. They tried to determine if Negro children produce less complete human figure drawings. They found that the total mean score was insignificantly higher for the Negro children. The Negro children drew significantly more complete faces but significantly fewer hand-arm items than the white children.

Dr. Emanuel Hammer, in a filmed interview, suggests that Black children leave out hands and arms three times more frequently than white children. Psychologically, Dr. Hammer feels the Black child may feel helpless or powerless in his environment.

Attitudes, values, and body image

According to Machover, "The body or self is the most intimate point of reference in any activity. ...the perception of the body image as it has developed out of a person's experience, must somehow guide the individual who is drawing in specific structure and content, which constitutes his offering of a person." (1965, p. 3)

Dennis (1966) suggests that the drawings a child does reflect his attitudes and values toward those same things. Children usually draw people they admire and who are well thought of in society. Dennis also

proposes that a child will draw a figure toward which he has positive attitudes. Gardiner (1972) tried to test Dennis' hypothesis. He tested 1,043 children in Thailand. He found that the number of smiling faces reveals the extent to which smiling is a social goal or cultural value.

A child, says Dennis (1966) draws not only a familiar person but one towards whom he has favorable attitudes. Drawings "reflect values or preferences, not the frequencies of experiences." (p. 4) Dennis also proposes that when a child draws a person, he is revealing his aspirations and his attitudes.

Dennis also suggests that if a child is familiar with a referent but seldom draws it he may possibly not be interested, either has negative feelings toward it or is inhibited by social taboos about drawing such a figure.

Children who live in societies that stress masculinity have distinctly masculine traits appearing in their drawings. Children seldom create imaginary men in their drawings. They are usually men with whom they are acquainted. (Dennis, 1966, p. 172)

Koppitz (1968) suggests that a child's drawing of hair and clothing cannot be evaluated unless the styles of his environment are known. A child's drawing of human figures from the 17th century would look strangely out of place today but in the context of the period, all the clothing and hair styles would be appropriate.

DiLeo (1970) suggests that during the preschool years, the child is least effected by culture. (p. 224) The child is just developing his concept of body image and the adult world has not yet tried to impose its own adult view upon the child's perceptions.

Normal healthy children tend to draw a person two or three years

older than their own age. This seems to project the child's value of his own age.

According to Machover (1949, p. 35) "the human figure drawn by an individual who is directed to 'Draw-A-Person' related intimately to the impulses, anxieties, conflicts, and compensations characteristic of that individual. In some sense, the figure drawn is the person, and the paper corresponds to the environment." (p. 35) The child who has a good self concept would be likely to show it through his drawing.

Koppitz (1968) believes that the person doing a psychological evaluation of a child must know not only the child's social background, but also about his self concept, his concept of his family and his place within the family structure. (p. 128)

Human figure drawing as art

"If art is to be used as a test," states Kellogg (1969, p. 189), "the artistic aspects of a child's work cannot be disregarded; instead, they must be part of the basis of test construction." The first scribbles that a child makes on a piece of paper may not make any sense to an adult looking down at them, but scribbles are a very important part of growth. The first scribble usually takes place around the eighteenth month of life. It is the beginning of expression and leads to drawing, painting and the written word.

According to Lowenfeld and Brittain (1970, p. 91), there are generally three types of scribbles - "disordered scribbles", "controlled scribbles" and "named scribbles" - which develop in approximately the order given. The child gains control over his scribbles about six months after he first starts scribbling. The child discovers a "connection between his motion and the marks on the paper." (p. 93)

This all happens at the same time he is learning to control other motor activity. When the child begins to name his scribbling at about three and a half years he has changed from "kinesthetic thinking to imaginative thinking." (p. 96) The child begins to discover that his random markings suggest something that is in his environment. The child gains increasing control over the markings and he gradually begins to express himself graphically. As the child grows he learns to use graphic symbols, i.e., letters to express himself. "As he becomes more adept at expressing himself, by writing, the avid interest in drawing tends to decrease." (DiLeo, 1970, p. 142)

In his drawing, the child tends to emphasize what is important to him while he tends to omit those things he considers subordinate or inferior.

The child uses size to indicate how he sees an object or person in his world. For example, in a drawing of his family a boy might make his father whom he admires intensely three times larger than his baby brother whom he detests because he takes all his parent's time. In another example, the child might draw a man larger than a tree in his yard because to him, the man is more important. (DiLeo, 1970, p. 124)

Transparencies are characteristic of children's drawings until the age of eight or nine. An example of a transparency might be drawing the legs inside a man's pants. A child will also draw what he knows to be there even if he cannot see it. DiLeo (1970, p. 105) gives the example of a boy who drew the head of a cow on one side of the paper, then turned the paper over and drew the tail.

The child of four and a half is capable of making judgments as to

the aesthetic qualities of pairs of faces. The child can surprise his mother by designating the prettier girl from a pair of faces. He is "reflecting the aesthetic standards of his culture." (DiLeo, 1970, p. 134) Though he does not have a trained eye he does have an aesthetic sense of judgment.

The child expresses his fresh and direct viewpoint through his drawing. Unless the adult perceives the child's drawings from the same vantage point, the adult will see all of the imperfections - lack of proportion, perspective, aesthetic sense, and proper orientation in space. "The child," says DiLeo (1970, p. 134) "is gifted with insight." The child draws what impresses him. He knows much more about an object than all that appears in his drawing.

Lowenfeld and Brittain (1970, p. 101) quote a study by Goertz in 1966 on drawing development in preschool children which found "that experience in working with art materials increases the development of the child's drawings."

Goodenough pointed out that it is impossible to discern esthetic or artistic merit in the drawings of young children. She contends that the cognitive processes must have completed their cycle and the child must have mastered the technique of the medium.

Some skeptics suggest that human figure drawings are just a reflection of the person's artistic talent. Swensen (1968) argues that each artist differs in the art he produces. Swensen thinks that it is reasonable to assume that the differences in artists are related to the personality of that person. Whitmyre (1953) found a significant relationship between the rating given by an art teacher for artistic quality and the rating given by a psychologist for adjustment on the same drawing. But Whitmyre's study only proves the judgment of

adjustment and that of artistic excellence are correlated.

Kellogg (1969, p. 190) suggested that "the esthetic mental images that produce child art would be found to reflect an intelligence similar to that needed for learning to read....Art begins first, so it cannot be ignored without taking the risk of making serious errors in education."

Kellogg (1969), DiLeo (1970) and Lowenfeld and Brittain (1970) believe that asking a child to copy a picture, color a stencil or stay within the lines of a coloring book are stifling a child's creativity. Drawing cannot be a means of self-expression when an adult charges the child with copying or staying within the lines. His drawings while a means of self-expression are also a stimulus for cognitive growth. "The child who has frequent opportunity to draw without adult interference learns faster and increases his cognitive ability more than he would if he were denied the opportunity."
(Kellogg, 1969, p. 100)

DiLeo (1970, p. 35) suggests that besides not having a child copy or stay within lines, we should also not ask him questions such as "What is it?" when it is impossible to tell what the child has tried to draw. DiLeo believes that by asking the child to name the object, a premature connection is made between two areas of development that are at different levels. Also, DiLeo believes that when an adult asks "What is it?" the adult is depriving the child of what might be non-objective scribbling that should serve as visual-motor experience.

The question has been raised about why retarded children are sometimes such good artists. Kellogg (1969, p. 194) hypothesized that "retarded children who are good child artists do not lack normal mental

capacity, but they fail to use it properly outside art." Bender and Goodenough have no explanation as to why some retarded children do very well in art. Kellogg calls such children "pseudoretarded" because they are afraid "to be self-assertive except in art. Art is a 'safe' outlet for such children because neither they nor adults know that their scribblings reveal a kind of intelligence which is comparable to that needed for learning the many things adults want them to learn, but on the adult's terms." (p. 194)

In a therapy session, Koppitz (1968) suggest, that two groups of children will draw:

1. The very young and/or retarded nonverbal young children for whom drawing is a natural form of communication.
2. "Seriously disturbed youngsters who can express themselves through graphic signs and symbols at a time when direct action or verbal communication is still threatening." (p. 145)

Possible role disturbances can be seen in the drawings of some children. For example, when the young child draws an older person, when the Chinese person projects a white person, when the short, fat person draws a tall slim figure or visa-versa, a role disturbance may be indicated. (DiLeo, 1970, p. 350)

In older children, the confusion and scrambling of sexual characteristics in a pair of human figure drawings, the greater the possibility of sexual maladjustment, reports Machover (1949, p. 101).

Summary of review of literature

Since its conception as a measurement, human figure drawing research has been vastly improved. Increased support has been given to the use of human figure drawings as a clinical tool. Early observers saw that children like to draw the human figure. Through observation and scoring of drawings it has been shown that:

1. Girls tend to score higher than boys.
2. Socially and emotionally maladjusted children do not do as well as adjusted children of the same age.
3. Drawings fail to make gross predictions about the child's future.
4. There are contrasting opinions as to the influence of race on human figure drawings.
5. A child's figure drawing tends to reflect his attitudes and values.

METHODS AND PROCEDURES

Setting

Three preschools were used in this study. The Child Development Laboratory located in the Family Life Building at Utah State University was the setting for part of this study. The preschoolers in this laboratory school had been drawn from homes throughout Cache Valley. The families who send their children to the Child Development Lab place a high value on education. The parents have to pay a fee to have their children enrolled. The children are put on a waiting list, sometimes shortly after birth to assure entrance. It is assumed that the families who send their children to the Child Development Lab are middle class. The preschool meets only four days per week instead of five. This usually eliminates the child of the working mother.

There are three laboratories in the Family Life Building, having a total of five sessions a day during the school year. The labs serve a total of 96 children per day. Each session serves about 20 children daily. For each session, there is one supervising teacher and four student teachers plus a graduate student in Child Development or a student from the Introductory Practicum in Education.

The second setting for this study was in two Head Start classes, in two northern Utah communities. Both towns are small farming communities. The children who attend the Head Start Program were selected according to the guidelines set up by the United States Office of Economic Opportunity. All of the families, therefore, qualify as low income. Two Head Start Programs were used because neither program

could contribute all of the children needed for this study.

Sample

The sample size was limited to 40 children, twenty from the Child Development Labs and a total of twenty from Millville and Corinne Head Starts. All of the subjects in the study were four years of age (48 to 59 months) and have attended preschool for at least the equivalent of three months.

Ten boys and ten girls were chosen randomly from those children who were age four at the Head Starts. Ten boys and ten girls were then chosen from the Child Development Labs to match those from Head Start. The groups were matched according to age and sex. All children in the sample were white. A method of matching ages was used. The method endeavored to have equal mean differences in the number of days separating the age of each matched pair. The average difference between each pair was 7.6 days.

Outline of procedure

Each subject was approached separately and asked to accompany the examiner to a separate room where the subject was asked to draw a picture for the examiner. The subject and the examiner were alone in the adjoining room which was devoid of all possible distractions which could attract the subject's attention.

The subject was given a sheet of unlined paper (8 1/2 x 11 inches) and a short pencil (4-6 inches long) with no eraser. If the subject was a boy, he was asked to draw a boy. The examiner said, "Let's see you draw a boy (girl) on this page. Do it as nicely as you can. Be sure to make all of him (her)." (McCarthy, 1972, p. 112) If the

subject started to hesitate, the examiner said, "I'm sure you can make a nice picture of a boy (girl). Try to make it right here. (Point to the center of the page.)" (McCarthy, 1972, p. 112) If the child rotated the sheet 90 degrees, the examiner returned the paper to the original position and said "Let's see you draw with the page like this." (McCarthy, 1972, p. 112)

If the child asked questions on how to draw a child, the examiner said, "Whatever way you think. Any way you like, just make the best picture of a boy (girl) that you can." (McCarthy, 1972, p. 112) If the child stopped, the examiner said, "Is it all done?" (McCarthy, 1972, p. 112)

If the child thought that the sheet of paper had been spoiled, the examiner gave him a second sheet of unlined paper. There was no time limit set but the subject was usually able to finish in less than five minutes. The examiner admired the child's drawing and thanked him for his drawing before he left. All spontaneous comments made by the child while he was drawing were written down on the child's record sheet along with his hand preference. Those comments made by the child which were helpful in identifying the body part were especially noted.

Scoring of the test was done according to the rules prescribed by McCarthy. (1972, p. 126-133) A total of twenty points was possible with each of 10 variables having a maximum value of two points.

(Table 1)

Table 1. Scoring on the variables of the Draw-A-Child Test

Variables	Score (0-2)
1. Head	_____
2. Hair	_____
3. Eyes	_____
4. Nose	_____
5. Mouth	_____
6. Neck	_____
7. Trunk	_____
8. Arms and Hands	_____
9. Attachment of Arms	_____
10. Legs and Feet	_____
Total (Max. = 20)	_____

The scoring system for the Draw-A-Child Test is the same for both boys and girls. The scoring is based on a two point maximum for each variable. McCarthy's scoring system is described below.

A head is given a score of two points if it is an oval shape in a vertical position. For one point the child must draw any closed figure but to be scored, a featureless shape must have limbs or a body attached. If the head has no body or limbs it must have at least two features to be considered a head. (McCarthy, 1972, p. 113-114)

The hair must be neatly drawn but does not have to be shaded to receive two points. For one point the child has only to crudely draw hair. Zero points are given for no hair. (McCarthy, 1972, p. 114)

There have to be two eyes drawn in the figure if not in profile to gain any score. For the maximum of two points the child must draw either eyebrows, lashes, or pupils. For one point the child has only

to draw dots or any other crude representation of eyes. (McCarthy, 1972, p. 115)

The nose must be drawn in two dimensions with the height longer than the width to receive two points. For one point the child may draw a dot or any other representation of a nose. If the child draws no nose, he receives zero points. (McCarthy, 1972, p. 115)

The mouth is given two points only if one or two lips are indicated. A one point mouth is any representation of a mouth other than a dot. A dot or no mouth scores zero points. (McCarthy, 1972, 115-116)

The neck must be continuous with the head or shoulders to score two points. If the neck is not continuous it is given a score of only one point. If the child has drawn a stick figure, the neck and shoulders must both be present. (McCarthy, 1972, 116-117)

The trunk must be greater in length than width to receive two points. A stick figure may receive two points if the trunk is distinct from the legs. Any single shape drawn between the legs and head is considered a trunk. The drawing receives zero points for the trunk if no trunk is indicated. (McCarthy, 1972, 117)

If the child draws two arms and two hands in any manner, the drawing receives two points. If the child draws only the arms he receives only one point. If the drawing is not in profile and the child draws only one arm the drawing receives no points. (McCarthy, 1972, 118)

The attachment of arms drawn two dimensionally must be in the appropriate places on the shoulders to receive two points. If the drawing has arms but no shoulders, the child receives only one point. The attachment of arms receives no points if the two standards are not

met. (McCarthy, 1972, p. 119-120)

There must be two legs and two feet for the child to receive two points. If only the legs are present, only one point can be given.

(McCarthy, 1972, 120-121)

If the child's drawing is in profile, he should not be penalized for having only one of a set of body parts. For example, if he has only one arm and hand he should be given two points instead of zero for only one hand.

The comments that the child makes spontaneously about his drawing may be helpful to the scorer in providing clues as to the parts of the drawing. The scorer should score the drawing by its actual appearance but the comments may help the scorer recognize the parts.

Several children were retested during the course of this study to find whether test scores were consistent over a short duration of time. The interval between test and retest was one week plus or minus one day because of absences. Of the 4 children retested, all had scores that were highly correlated at the 0.05 level with their first test score.

The examiner rescored all drawings after a thirty day period. It was found that the total scores given figures on both trials were correlated at the 0.05 level indicating that the rescore reliability was 95 percent. The drawings were scored by a second examiner to see if the judgments that had to be made during scoring were consistent. The second scoring deviated no more than two points on any drawing from the score given by the first scorer. The scorings by the first and second examiner were correlated at the .05 level.

McCarthy's Draw-A-Child Test

The Draw-A-Child Test was designed by Dorothea McCarthy to measure the child's ability to draw a child. McCarthy received her early training under Goodenough. She "became convinced that cognitive differences among children could be measured at early ages and along several dimensions." (1972, p. 111) The McCarthy Scale was developed for individual administration to very young children. The Draw-A-Child Test was one of the tests developed for the McCarthy Scales of Children's Abilities. The Draw-A-Child Test was developed to determine the strengths and weaknesses in drawing abilities of very young children.

The Draw-A-Child Test was standardized by using a nationwide sample using several major variables, thereby conforming the sample to the latest census. McCarthy's major aim in using a stratified sample was to develop a test that would be representative of the national populations of children from age 2 1/2 through 8 1/2.

Quotas were assigned using age, sex, color, geographic region, and father's occupation. An informal selector, i.e., urban vs. rural was also used as a variable.

The sample called for 100 children at each of 10 age levels from 2 1/2 through 8 1/2 with half year intervals from 2 1/2 through 5 1/2. The sample was divided equally between the boys and girls. The sample was stratified on the color variable by the categories of white and nonwhite according to the proportion in the census. The nation was divided into four geographic regions with the number of children drawn from each region equal to the census figures. The father's occupation was used to disseminate the children in groupings according to figures reported by the U.S. Bureau of the Census. Since census

figures did not give the exact proportion of rural to urban population rough approximations were made.

Auricchio (1966) compared several methods of scoring Draw-A-Person Test. The reliability of each test was found: Draw-A-Man equals .87, Draw-A-Boy equals .91, Draw-A-Woman equals .89, Draw-A-Girl equals .93. When Auricchio compared the scoring on the tests she found that 20% of the boy and girl drawings received the same score when scored by two scorers but that none of the man and woman drawings did. Auricchio found the scoring time of the Goodenough-Harris scales to be three times that of the McCarthy scales.

Analysis of data

The results gathered from the drawings were statistically analyzed by finding the mean, the standard deviation, the F correlation coefficient at .05 or .15, and the confidence interval of the mean at 95 percent level.

Comparisons were made between: Head Start children and Child Development Lab children as well as between boys and girls.

The drawings were rescored by the original scorer and by another scorer. An r - correlation coefficient was used to find the reliability of the scoring system.

RESULTS AND DISCUSSION

Results

The first hypothesis was that a difference would be found between middle class and lower class children on the ability to perform on a Draw-A-Child Test. A difference was found in the average mean scores of the children but the difference was not statistically significant at the .05 level (Table 2). using an F - distribution with the degrees of freedom equaling 1,38. The difference between the means was significant at the .15 level. Lower class children tend to have less drawing ability than middle class children. The confidence intervals of the mean scores of Head Start children and Child Development Lab children just barely overlap.

Table 2. Group mean of total score and confidence intervals for forty preschool children

Type of group	Group mean of total score	95% Confidence interval
Head Start	7.05	5.64 - 8.46
Child Development	8.65	7.24 - 10.06
Boys	6.65	5.30 - 8.00
Girls	9.05	7.70 - 10.40
Head Start boys	5.50	3.63 - 7.37
Head Start girls	8.60	6.73 - 10.47
Child Development boys	7.80	5.93 - 9.67
Child Development girls	9.50	7.63 - 11.37

The second hypothesis, that a difference would be found between boys and girls on total scores on the ability to draw on a Draw-A-Child Test, was supported. Girls drew figures that scored significantly higher than boys at the .05 level of an F distribution. The group mean for girls was 9.05 while the group mean for boys was found to be 6.65. The confidence interval of scores showed that the boy's scores tend to range between 5.30 and 8.00 while the girl's range is higher 7.70 to 10.40. Out of 20 boys, only two scored ten points or above. Nine girls scored ten points or above. This tends to indicate that girls are superior to boys in their ability to draw on a Draw-A-Child Test. This research agrees with that of Koppitz (1968), Harris (1963), Machover (1960), and Goodenough (1926).

When the sample was divided by sex and by income level it was found that Child Development girls had a group mean total of 9.50 while Child Development boys had 7.80. The Head Start girls scored better than the Child Development boys but lower than the Child Development girls with 8.60. The Head Start boys scored lower than all of the other children with 5.50.

When compared to McCarthy's mean for four year olds the mean for Head Start children was lower while the mean for Child Development children was higher. McCarthy's mean for 104 children was 7.2 while this research found the mean for twenty Head Start children to be 7.05. The mean for twenty Child Development children was 8.65.

Discussion

During the study some of the children drew exceptional and varied drawings. A wide variation was noticed in the ability of the child to draw a figure that scored well according to McCarthy's rules and one that

was very artistic. McCarthy's scoring rules do not allow for the scoring of such extra features as clothes or added appendages such as ears or "belly buttons". The examiner has to rely on his own judgment when scoring a particular drawing. Because of the way the rules are stated, no differentiation could be made between the sloppily drawn figure and the mature carefully drawn figure.

One boy, age 4-9-20, when asked to draw a boy, drew a figure upside down with the feet pointing toward the examiner (page 62). All the other children in the study drew the feet of their figure pointed toward their own body. Two possible explanations for this occurrence were: The child has inverted vision. His brain has not turned what he sees over into proper prospective; or the child drew the figure for the examiner and therefore the figure faced the examiner at the time of testing. No further testing of the boy was done during this study but the Head Start teacher planned to carry through with him at a later time.

Of the total of 64 children tested only two added any extra ornamentation besides clothing. Both children attended the Child Development Labs. One boy, age 4-0-8, drew a figure which he labeled as a cowboy (page 93). He named several items as he drew them: The hair, a cowboy hat, an eye, an arm, the head, a rope, socks, a foot and a shoe. From personal knowledge, it is known that the boy is fascinated by cowboys. The girl drew two figures instead of just the one asked for (page 84). First, she drew a girl. Her comments at the time were: "I can do straight and curly hair. I forgot the arm." She then drew a boy that looked much like the girl except he had straight hair instead of curly. The last thing she drew was five balloons in the boy's hand. She commented before she started to draw them that "I forgot the balloons."

The age of the girl at the time of testing was 4-6-6.

Only four children drew and named appendages of the body that were not expected. All four children were from the Child Development Labs. A girl age 4-7-15 (page 87) drew an elbow, a girl 4-5-17 (page 109) drew a tummy and two boys ages 4-9-2 (page 82) and 4-10-4 (page 76) drew figures with "belly buttons" while the second of the boys also drew a heart. DiLeo (1970) has said the addition of a "belly button" is infrequent, but it is not rare in preschool children.

Of the total 64 children tested, only two (page 53 and page 68) obtained a score of zero. Both children were from Project Head Start. The girl 4-7-25 just scribbled on her paper while the boy 4-8-13 stated "I am going to draw the face first." (page 53). He then named parts of the head: face, eyes, mouth, and hair. I found from his teacher after having given the test that the boy had enuresis and had experienced several operations. He knew what things should have been drawn but was unable to coordinate his motor activity for the task. The girl was also emotionally disturbed and masturbated frequently in the classroom causing a great deal of uproarious behavior with the other children.

One boy from the Child Development Lab when asked to draw a figure answered, "I can't". He was encouraged again to try to draw a boy. He then told the examiner, "I will draw it tiny." (page 74). He then proceeded to draw a figure that was less than one inch in total height. Hammer (1960, p. 260) commented on children who draw very small or even tiny objects or people. These children "tend to suffer from intensified awareness of the fact that they have been born pigmies in a world of giants." (p. 260).

A girl (page 71) commented as did the boy, "I am doing a little one.",

but her figure was not drawn as small as the boy's. Her figure was drawn smaller than most of the other figures.

Between the ages of four and five, the inconsistent appearance of the trunk is to be expected, stated DiLeo (1970). Of the sixty four children tested, only 34 drew a trunk on their figures. Of the forty children in the matched group twenty five drew trunks.

Fingers appeared on many of the figures, some having the correct number and some not. Only one boy (page 57) said "I can't draw finger". In scoring the arms and hand the child did not have to have the correct number of fingers but he did have to have the correct number of arms and hands.

In the course of the study two sets of twins were tested. The first pair, a set of identical boys had scores of four (page 58) and seven (page 59). They seem to be at different stages in their drawings. The boy who scored four points made only one comment. He pointed to the triangle shaped figure he had drawn and called it "head". His brother on the other hand, looked at his figure and said, "I drew him smiling." He then finished the legs and said, "Draw him some legs."

The second set of twins were identical girls. The girls scored nine (page 112) and ten (page 113). The first twin commented while she was drawing "a big head", "eye and "mouth" pointing to each as she said it. The twin that scored ten points made no comments but she did draw two figures. Each figure was drawn with an appendage between the legs which might be interpreted as a penis but since she made no comment as to its name no concrete conclusion can be made. Both girls seem to be in the same stage of drawing.

The children from the Child Development Lab made more comments

about their pictures than the Head Start children. This might have been because the examiner was acquainted with the Child Development children but was a stranger to those children at Head Start. A boy (page 78) from the Child Development Lab made the most total comments. He said "head", "head" (pointing to the body), "hand, that's a funny hand", "there's a finger" (repeated five times, once each with the drawing of each finger), "there's a foot", and "there's the toes". The boy was very verbal after he finished his picture even though the examiner was a stranger.

One girl from Head Start (page 70) drew the head of her figure, then commented "curly hair" as she drew the hair. She continued to draw, adding ears and saying, "He has big ears", "He is growing them" (referring to hands). The girl had been asked, like all the other children to draw their own sex, but while referring to her drawing she called it "he". This might be explained in many ways, two of which could be: She has not learned the personal pronouns referring to her own sex; or, she was intentionally drawing a boy and not a girl.

Two children drew teeth, a boy (page 79) from the Child Development Lab and a girl (page 112) from Head Start. Only the boy made a comment about teeth. He said "He is going to have sharp teeth." Machover (1949) sees the drawing of teeth as a sign of aggression. No conclusion as to the aggressiveness of either child can be made by the examiner.

Shading was done extensively by only four children. Other children used shading in drawing hair on their figures. Koppitz (1966) in a study of emotional indicators found that children with adjustment problems drew significantly more shading than well adjusted children. All four children who shaded extensively in this study were girls, three

from Head Start (page 69, page 71, page 114) and one from the Child Development Lab (page 106). No conclusion can be drawn about shading because lack of knowledge about the adjustment of these children.

An opinion of how a drawing should be made was asked for by only one child but before a comment could be made, she answered her own question. The girl (page 87) said "Is this how you draw it - that's right, you cross here and here." She then went on to say, "That's the elbow", "here's the finger", "there's the toes", and "I have to make the feet now".

Many of the children said they could not draw a certain portion or the body well. It is felt by many authors, that after a child's work has been compared to that of an adult or older child, the child will not feel confident in his drawing ability even though it is at the same level as that of his peers. A child's art must not be compared to that of another's because it might stifle that grain of creativity each has.

Most of the children in this study had reached the representational stage of art. Therefore, the adult looking at the drawing can assess it's meaning but if the child has not reached the representational stage, the adult should not ask "What is it". Rather he should say something to the effect of "Tell me about your picture" as Kellogg (1969) suggests.

During the period of testing, the examiner felt that a different atmosphere pervaded the testing rooms at Head Start. The children at the Child Development Lab tended to have a more confident air while those at Head Start seemed to be questioning. The examiner was acquainted with about half of the children in the Child Development Lab but knew none of the children at Head Start. Those children that were unknown to the

examiner from the Child Development Lab were more confident than the Head Start children. This seems to lessen the possibility of acquaintanceship, improving the ability of the child to draw a figure.

Many variables during the course of the study could not be controlled. No attempt was made to standardize the activity that the child was taking part in right before he was asked to draw. No child was asked to leave an activity in which he was engrossed. There was no attempt to force a child to go with the examiner. All of the children tested could refuse to be examined.

SUMMARY AND CONCLUSION

Summary

This study was designed to investigate the influence of socio-economic levels upon the drawing abilities of four-year-old children. Two hypotheses based on the assumptions that: girls would score higher than boys and that middle class children would score higher than lower class children on the ability to draw on a Draw-A-Child Test were tested.

Data was collected by using the Draw-A-Child Test designed by McCarthy (1972). Forty subjects were selected for a matched group design based on age and sex. A total of twenty children were chosen from the two Head Start Projects to match twenty children selected from the Utah State University Child Development Lab. Each group of twenty children was divided into subgroups of ten boys and ten girls. The subjects were asked to go with the examiner to a separate room by the examiner or teacher. Each subject was asked to draw a boy or girl depending upon the sex of the child. Each drawing was scored by the examiner using McCarthy's handbook.

The results of this study indicated that there was a difference between the scores of four-year-olds on a Draw-A-Child test when compared according to socio-economic levels. The findings as to sexual differences agreed with those of previous researchers. Girls are superior to boys in drawing a human figure.

Further development of a scoring system like McCarthy's is needed. Great variation was seen in the neatness of the children's drawings

which could not be considered by the scoring system. It seems that the scale needs to include some sort of artistic ability measurement so that two drawings of different abilities do not receive the same score.

Conclusions

Any conclusions to be drawn from this investigation must be regarded as tentative because of the small number of children involved in the study, as well as the number of uncontrolled variables. Nevertheless, it does appear that it may be tentatively concluded that both native ability and the child's pattern of life experiences may influence his general ability as measured by a draw a child test. Differences in performance exist among boys, among girls and among children in each of the social class groups. Significant differences were found between boys and girls in their performance. How much of this difference is due to male-female differences and how much may be attributed to experiential differences between cultural influences on boys and girls is not known.

Recommendations for further research

If further research were done it might be beneficial to make three comparisons using low income subjects that are more disadvantaged than those found in Cache and Box Elder Counties. The children from Millville and Corinne Head Starts exhibited many values and attitudes similar to those of middle class children.

A study of spontaneous human figure drawing might be helpful in assessing the stage of human figure drawing that the child has attained if it was then compared to what the child drew at the time of testing.

For statistical analysis, it would have been helpful to have used

more children in the testing situation. The larger the sample size the lower the tabular value for correlation values.

In this study, if the child could draw the head, it was observed that he could usually draw other features on the figure. The older the child the more apt he was to draw a complete figure. These findings were not tested fully but should be explored in more depth.

More research needs to be done in discovering how income levels effect the drawings of those children from the same and different cultures. Care must be taken in claiming that any test is culture free but a nonverbal drawing test might be helpful in working with children from different cultures.

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APPENDICES

APPENDIX A

DRAW-A-CHILD TEST

RECORD FORM

NAME _____ AGE _____ SEX _____

HOME ADDRESS _____

NAMES OF PARENTS _____

SCHOOL _____ CLASS _____

PLACE OF TESTING _____ TESTED BY _____

Yr. M. D.

LATERALITY

Date Tested _____

Hand R L B

Date of Birth _____

Age _____

SCORING

COMMENTS MADE BY THE CHILD

1. Head
2. Hair
3. Eyes
4. Nose
5. Mouth
6. Neck
7. Trunk
8. Arms and hands
9. Attachment of arms
10. Legs and feet

TOTAL

APPENDIX B

Children's Drawings

Each child's drawing has been included in the appendix. Since the children's identities must remain anonymous, each child was identified by number code.

Examples of the code are as follows:

HG 15 9 2 2 1 1 1 0 1 0 0 1 4-11-1

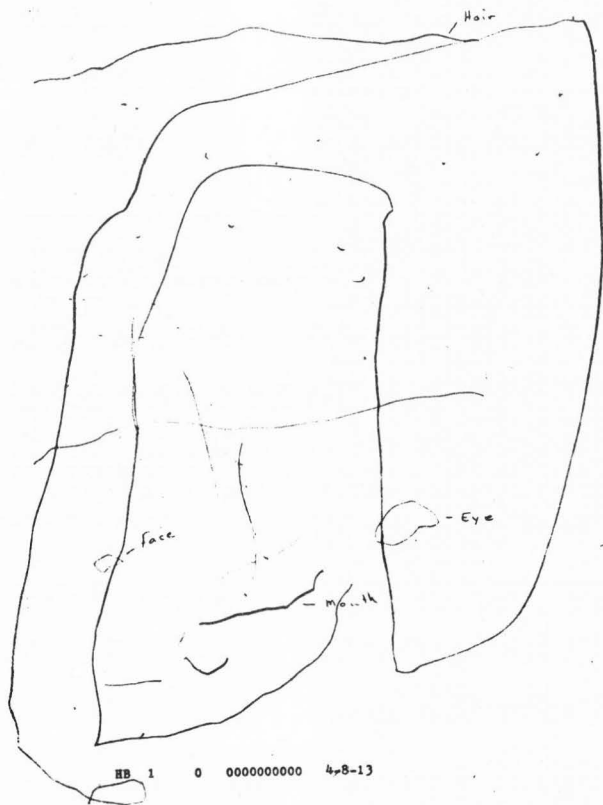
The above child is a girl from Head Start (HG). The total score she received was nine. The score for each of the ten variables is then listed in order. Her age is four years, eleven months and one day.

CB 25 9 2 1 1 2 0 0 1 0 0 2 4-9-27

The above child is a boy from the Child Development Lab (CB). His total score was nine points. The score for each of the ten variables is then listed in order. His age is four years, nine months and twenty-seven days.

		Points
Variable 1	Head	- 0-2
Variable 2	Hair	- 0-2
Variable 3	Eyes	- 0-2
Variable 4	Nose	- 0-2
Variable 5	Mouth	- 0-2
Variable 6	Neck	- 0-2
Variable 7	Trunk	- 0-2
Variable 8	Arms and hands	- 0-2
Variable 9	Attachment of arms	- 0-2
Variable 10	Legs and feet	- 0-2

Each drawing has been reduced at the rate of 38.5 on a Xerox 7000 Reducing Copier.



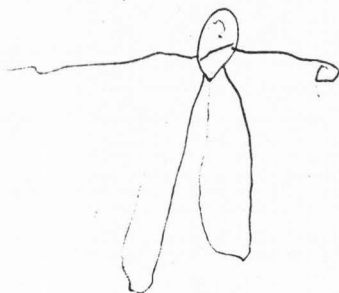
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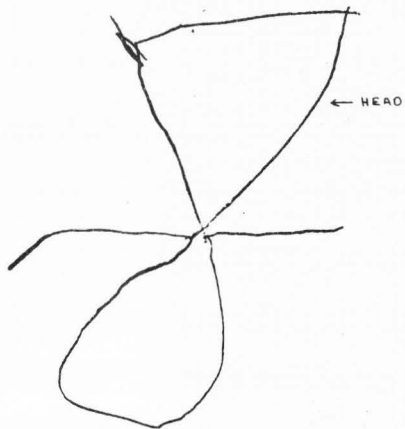
EB 2 5 1111100000 4-9-19







HB 5 7 201100101 4-7-19



HB 6 4 1000002100 4-9-9



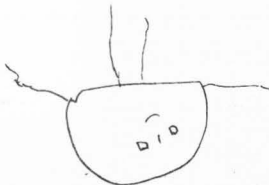
HB 7 7 1020200002 4-9-9



HB 8 4 1010100001 4-5-26



HB 9 7 2011200001 4-9-21



HB 10 6 1011100101 4-9-20



HG 11 10 2111102002 4-10-1



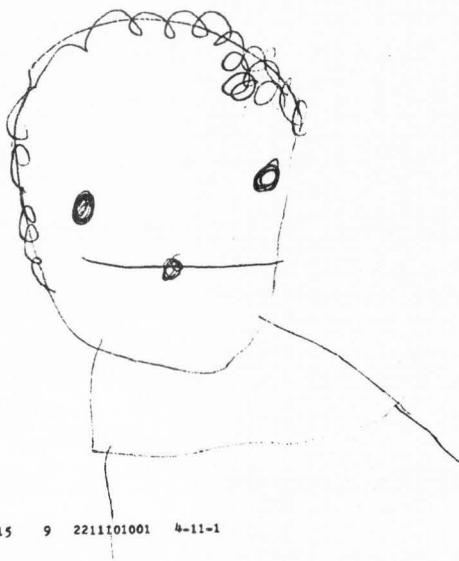
RG 12 5 2111000000 4-6-6



HG 13 14 2122202111 4-9-6



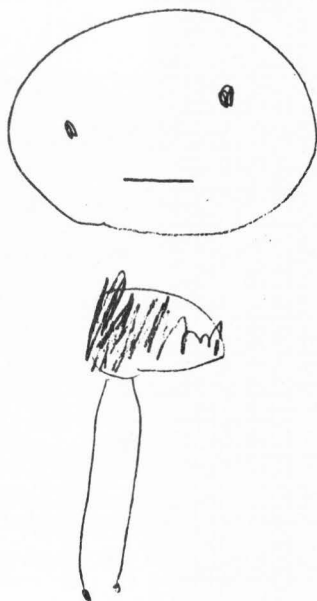
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HC 15 9 2211101001 4-11-1



HC 16 0 000000000 4-7-25



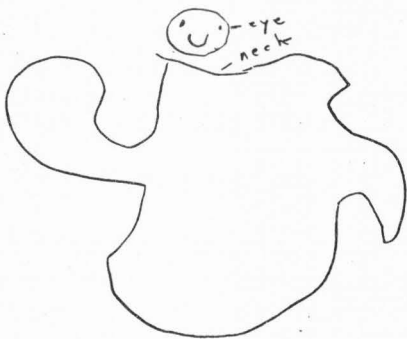
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HG 19 13 2011202212 4-7-11

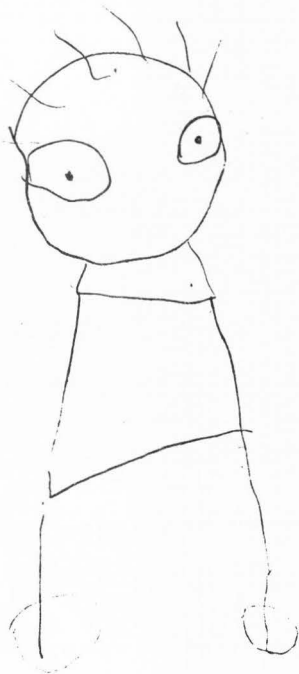




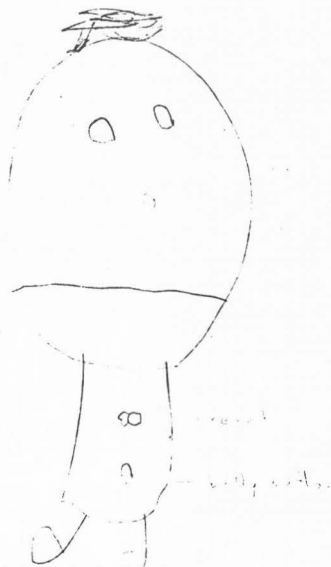
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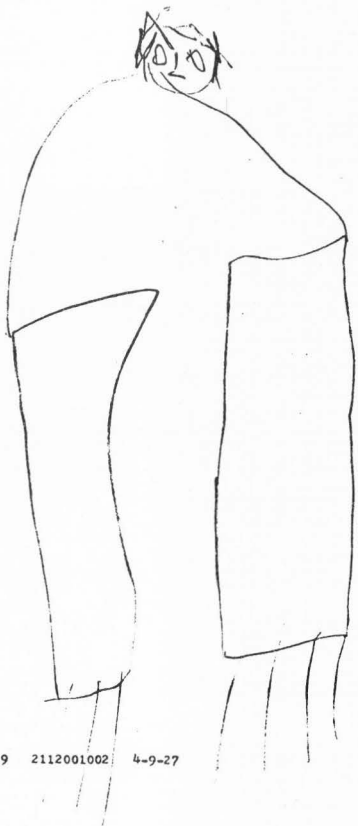
CB 22 4 1011000001 4-5-19



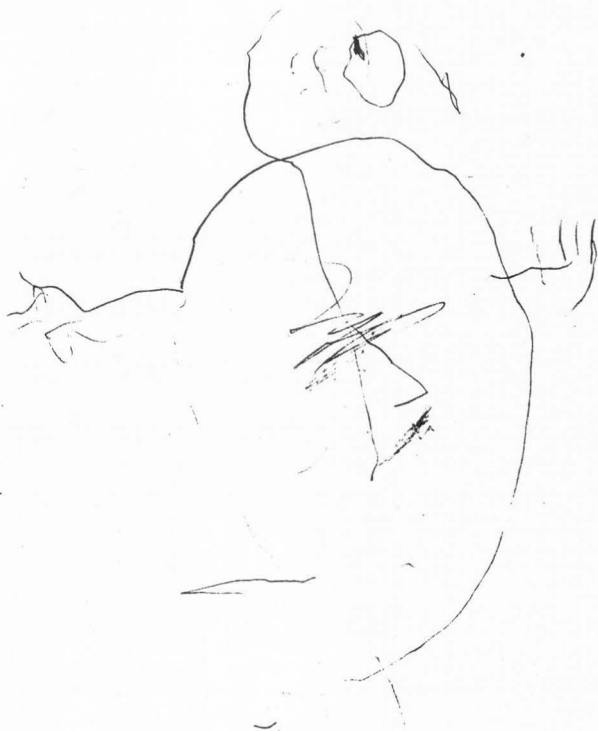
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CB 24 10 2111102002 9-10-6



CB 25 9 2112001002 4-9-27



CB 26 9 1020002202 4-9-11

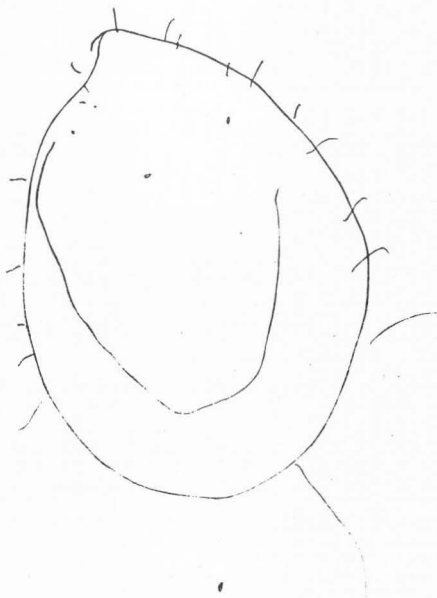


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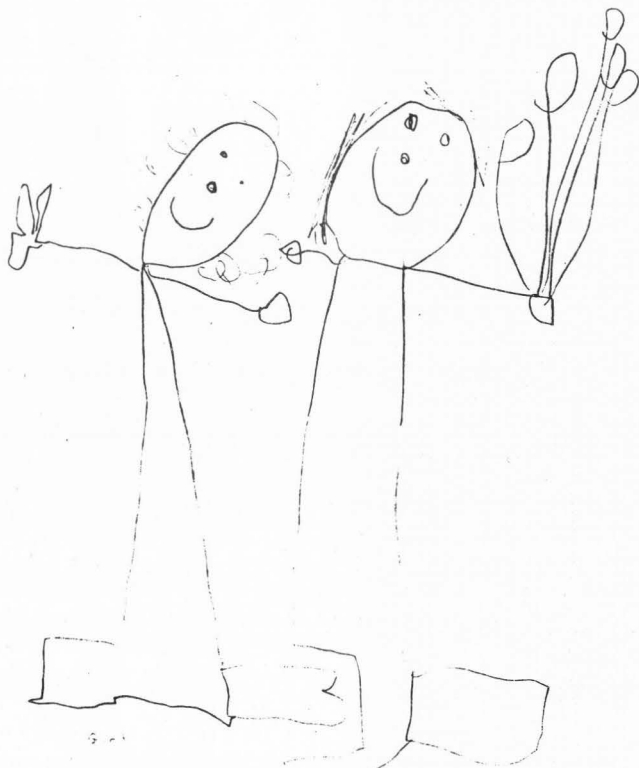


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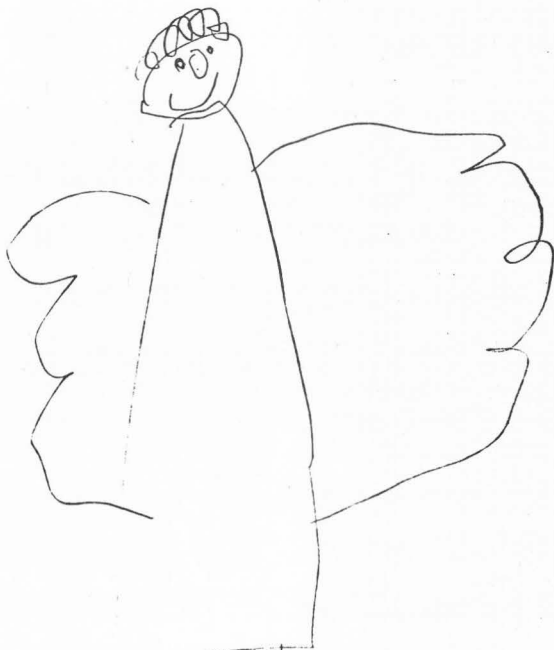


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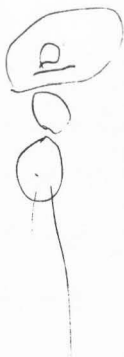


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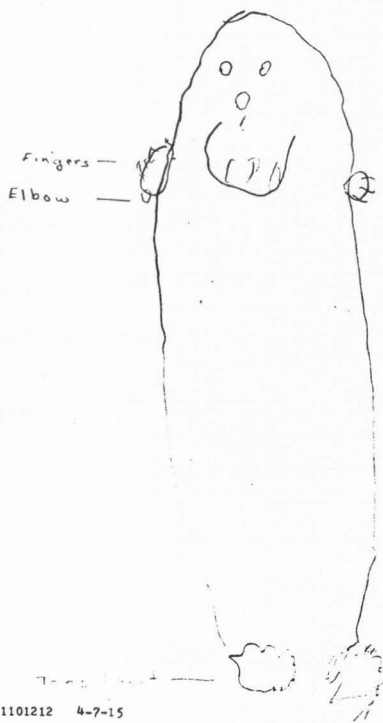


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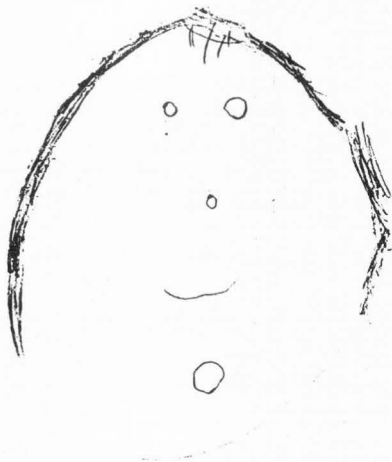
W V



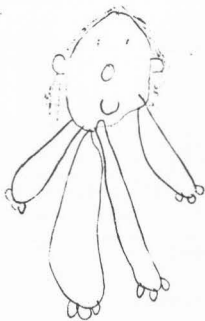
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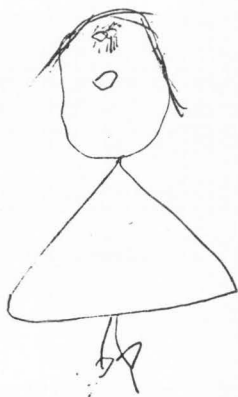


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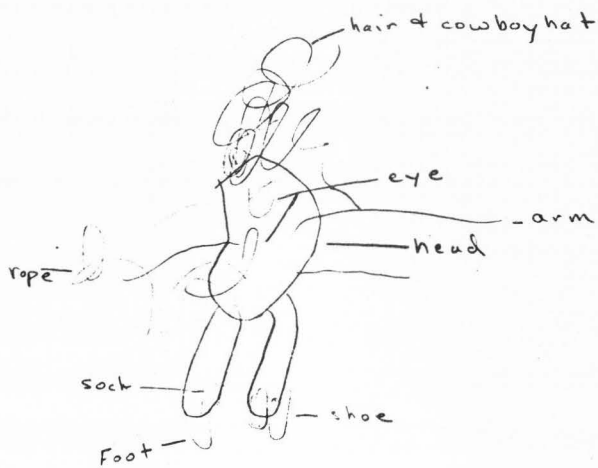


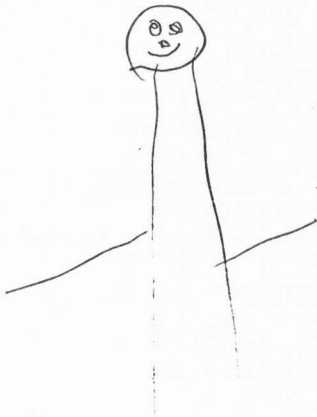




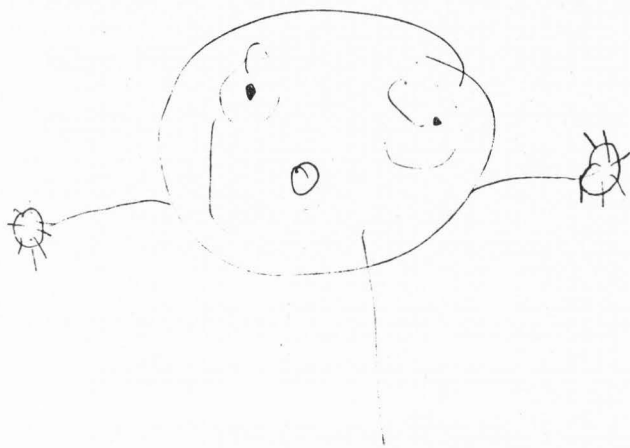


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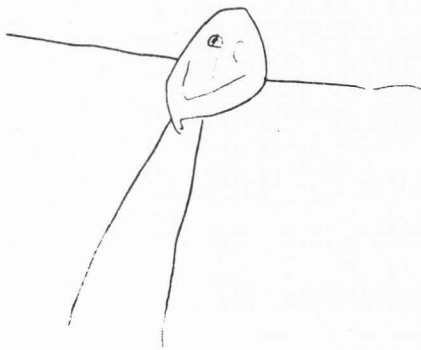




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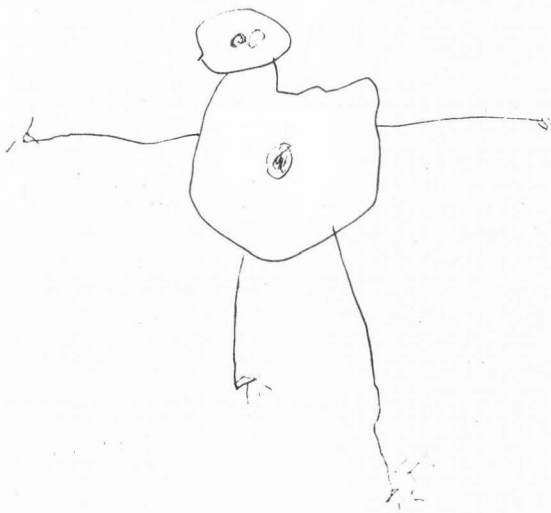


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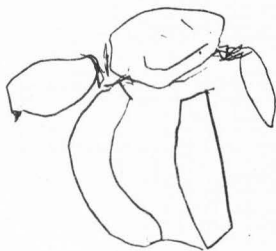


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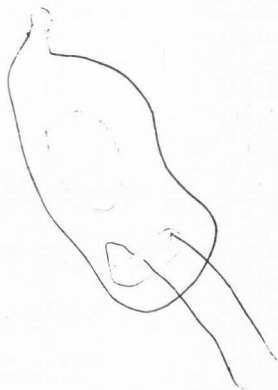
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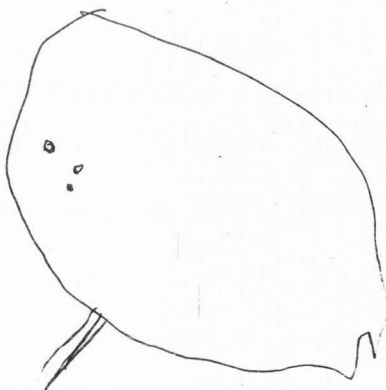
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swirl

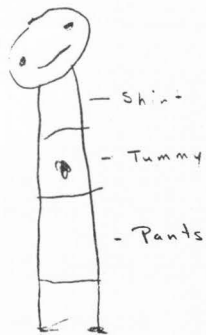




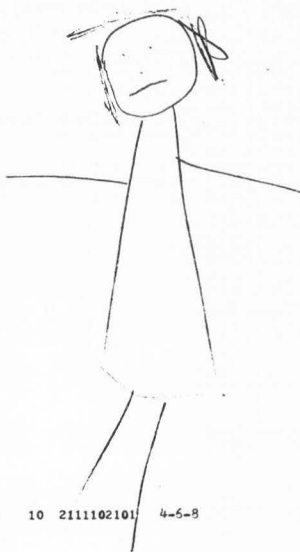
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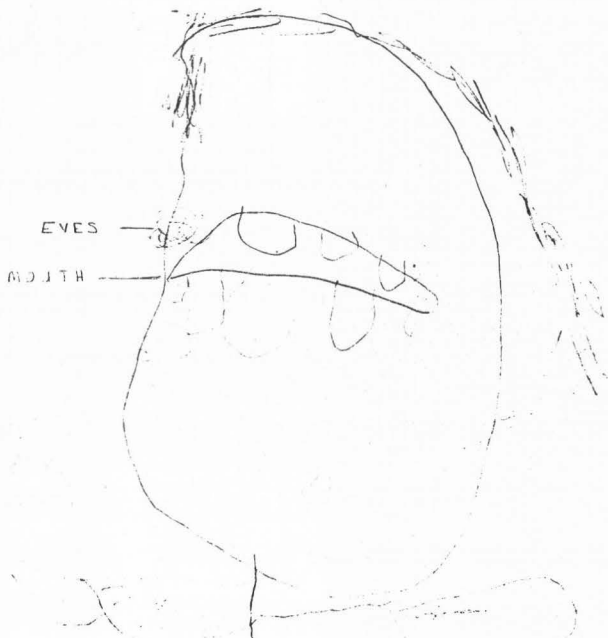
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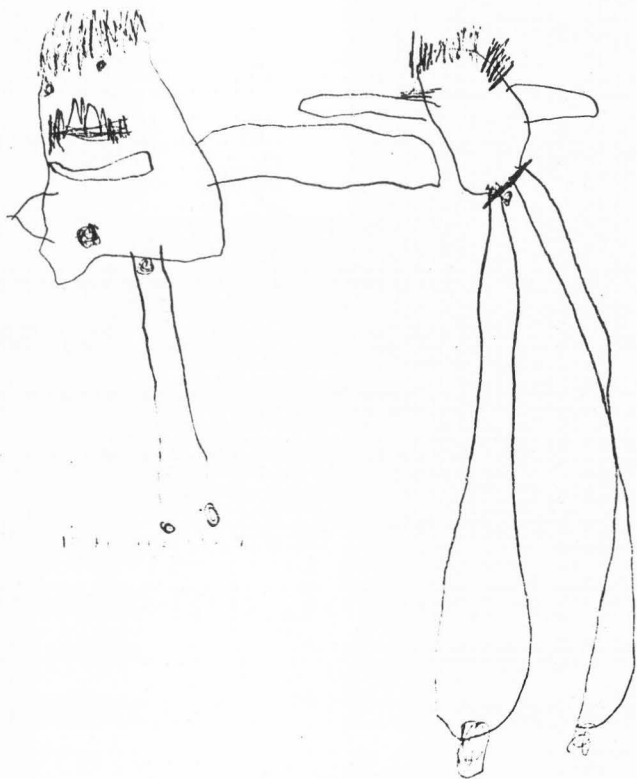
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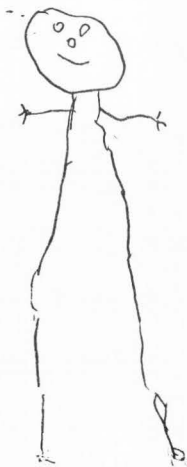
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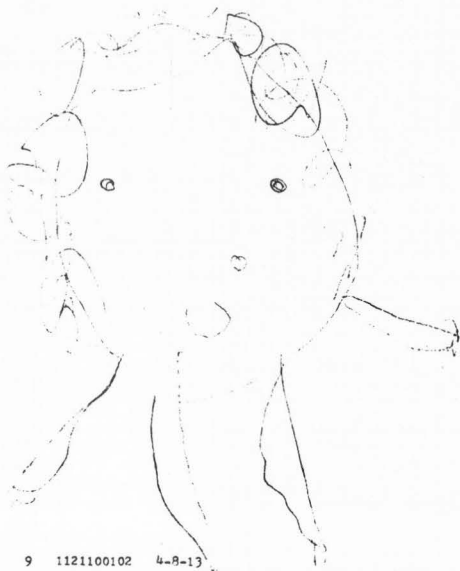
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HG 62 16 110222222 4-11-23



dress



HG 64 9 1121100102 4-8-13

Margaret P. Ezell

Permanent Address
60 "M" Street
Salt Lake City, Utah 84103
(801) 359-6796

Objective .

- . Teaching in a Preschool Program, Administrative work with
- . a Preschool Program or Teaching Child Development Classes
- . and/or Family Life Classes.

Education .

- . Bachelor of Science - Child Development and Family
- . Relations, Brigham Young University, April, 1973.
- . Master of Science - Family and Child Development, Utah
- . State University with an emphasis in Preschool Education
- . and Child Development, Expected August 1974.

Work Experience .

- . Bank Teller and General Bookkeeper for Walker Bank and
- . Trust Co., Centerville Branch, summer of 1973.
- . Resident Assistant, Brigham Young University Housing, Jan.
- . 1972 - April 1973.
- . Sales clerk for Sears, Roebuck and Co. from Oct. 1968 -
- . Jan. 1972, part-time during school year and full-time
- . during the summer.
- . Nanny and housekeeper, summer of 1969 for two doctors with
- . two small children.

Voluntary Activities .

- . Discussion leader for Northern Utah Family Life Council.
- . 4-H Club leader working with camp and projects.
- . Sunday School Teacher in LDS Church (Mormon) for children
- . age 5 - 9.
- . Vice-president 1970, secretary 1969 for BYU residence hall.
- . Selected as representative by county officials to Maryland
- . Governor's Conference on "Keep Maryland Beautiful", July
- . 1968.

Background and Interest .

- . Brought up in New York, Maryland, Louisiana, Utah, South
- . Carolina and New Mexico. Have traveled extensively
- . throughout the United States. Interested in golf, travel
- . and skiing.

Personal .

- . Single.
- . 5' 7".
- . 160 pounds.
- . Born August 12, 1951.
- . Health - Excellent.
- . Social Security - ~~1951-1973~~

References and Credentials .

- . Forwarded upon request from Utah State University
- . Placement Center, Logan, Utah 84321.

Major Assets .

- . I feel that I am strongly self motivated and work well
- . with a minimum of supervision. I am very conscientious
- . toward detail. I am able to work well with others and I
- . feel I am respected by my peers. I have a high degree of
- . aptitude for nearly all subjects.