

FIGURE DRAWING COMPARISONS BETWEEN
EIGHTH GRADERS AND ADULTS

by

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ABSTRACT

Graphic development seems to decline during adolescence. We are evaluating figure drawings from eight-graders, college non-art majors, and college beginning drawing students. The tests used to rate the drawings will be by a Detail scale, using a revised Goodenough-Harris Drawing test; and an Artistic Merit scale, using a revised Rouse scale. In this paper empirical observations are reported about the Detail scale. There are similarities and differences in the drawings rated; the drawings range from unsophisticated drawings with characteristics similar to children's drawings, to sophisticated drawings with correct detail.

CHAPTER I

INTRODUCTION

There seems to be a leveling off of graphic development about the age of puberty that can be observed in human figure drawings. Adults who have been educated in art, may display an artistic ability that has not automatically developed in persons who lack an artistic education. Lack of art training seems to result in the lack of graphic development past the age of twelve or thereabouts. This study will investigate this leveling off phenomenon by examining drawings of the human figure by three groups of students: eighth graders, university juniors and seniors who are non-art majors, and university freshman and sophomores enrolled in a drawing class required of all beginning art majors.

According to recent psychological studies on adolescence, there is a period of rebellion that coincides with an observable decline on creativity tests. This decline may be because of the development of formal thought processes, social and biological happenings, or in drawing, the need to find a suitable means of expression to compensate for increased awareness of incongruities between the drawing and what is seen. Studying this adolescent decline and when it happens will give a better understanding of the nature of human growth and will show whether skills that do decline remain lowered or if they increase naturally or through training.

Looking at physical activeness throughout a life time, an increase in physical activities occurs until early adulthood, levels off, and then eventually declines in old age. All organs of our body go through similar stages; our heart, muscle tone, and brain functioning abilities all eventually decline in a life span. Even the ability to remember declines. Exercising various body parts will prevent fast declining; learning and reading may improve the mind. In all natural life, things deteriorate eventually no matter how hard we may try to prevent it. It is a process of aging. It is wondered whether this declining stage is a natural process or the result of psychological confrontations.

Drawings for this study will be collected by asking students to draw both a male and female human figure on forms provided by the experimenter. Students will have the option of not participating. The test instructions to be given are similar to instructions used in Goodenough-Harris Test Manual. The students will make full length pencil drawings on a 6" x 8½" format and will have 20 minutes to complete both drawings.

The drawings will be evaluated on both a detail rating scale and an artistic merit scale. The Detail scale is a shortened version of the published point scales for the Goodenough Draw-a-Man and Draw-a-Woman tests revised and extended by Harris in 1963. This scale will measure the amount of detail in each drawing. The original scale contains 73 items. For the present study, which used older children and adults, the number of items will be reduced to 48 by restricting the list to items that identify the most detail. The items will be scored

as either being present or absent. The score for each drawing will be the sum of the number of details observed.

Since the Detail scale does not accurately measure the artistic quality of the drawings, a revised Rouse scale will be used to rate the figures on structural qualities and the overall artistic merit of the drawings.

The Artistic Merit Test, a short form of the Rouse Scale, uses a five point rating scale ranging from excellent to very poor to assess 14 components of artistic merit in drawings of the human figure. A high score on this test will indicate artistic merit in the figure being rated.

Scores from the two tests will be examined by analysis of variance to compare performance on both the Detail and Artistic Merit scales between the three groups and between males and females at each level. A correlational study will be made to determine whether or not there is any relationship between performance on the Detail and Artistic Merit Scales.

We speculate that the figures drawn by college students with no art training will have similar scores to drawings of junior high school students on both point and artistic scales. We feel that these two groups will rate low on the Detail test on items that deal with body proportion and body contour: superior motor coordination, calfs of legs, head outline, and head proportion. The group of art trained college students should prove to have more accurate head and trunk proportion, body contours, elbow and knee joints, and advanced drawing techniques in their representation of the human figure.

The advanced scores of the art educated group may show that drawing abilities improve when certain skills are taught. The need for continued art training is necessary to maintain artistic skills in each individual. An opportunity to learn these skills should be available throughout life so that increased knowledge could bring better understanding of artistic values.

CHAPTER 2

LITERATURE REVIEW

Children's Drawings

At the beginning of the 20th century, children's drawings were regarded as absurd nonsense. Viewed as scribbles, children's art was disregarded until 1885 when Ebenezer Cooke published an article on progressive growth in children's drawings (Harris, 1963). Since then, developmental stages in drawing have intrigued the professional artists, researchers, and psychologists who have studied the flexible and expressive qualities of children's drawings. Research continues today. Children's drawings appear to express inner feelings; moreover, many of these graphic expressions have innate formal drawing aspects associated with artistic mastery; balance, harmony, and composition (Gardner, 1980).

Drawing Progression

Many teachers, concerned with children's growth and education, have studied children's drawings from throughout the world and found similar development and pictorial progressions. Most children apparently pass through developmental stages that progress through initial scribbles, shape combinations, and symbol recognition to figure drawing. Understanding basic patterns of development elucidates the nature of action, the processes of seeing, steps in organizing thought, and methods of remembering and learning (Goodnow, 1977). Scholars have

rarely linked these developmental stages with physical growth. Gardner (1980) thinks that this past neglect was because people "with the strongest interest in children's drawings have rarely possessed deep knowledge of human development" (p. 14).

The form of young children's drawings is generally considered to be universal in their early stages. Children's spontaneous artwork shows that "every normal child is endowed with the desire and the ability to inscribe lines on smooth surfaces with fingers of a marking implement". Hand activities stimulate the brain; the brain develops when the eyes follow hand movements (Kellogg, 1979, p. 7). Graphic expression changes as children age; research has recorded features at each age level (Goodnow, 1978; Goodenough, 1926; Harris, 1963). Brown (1975) found prominent features appearing at certain ages in children's clay models of the human figure, which coincided with developmental patterns in drawing. Colbert (1980) studied individual differences in drawing detail at the same developmental level. Two drawings each from eighty-two preadolescents depicting the same still life revealed differences probably because of how individuals store and process information.

Howard Gardner has discussed specific characteristics of early scribbling stages. When children discover pencil marks can represent a person, "the child will produce hundreds of such figures, designating every manner of person, a veritable feasts of humanity..." (Gardner, 1980, p. 61). Drawings of people progress from mandala shapes and spheres with facial features to tadpole figures resembling the first stages of a frog. On this simplified figure, children place arms and legs; the arms and legs eventually yield fingers and toes. We say the

figure improves as the addition of detail renders it more recognizable as human. The assumed standard of comparison is always a realistic drawing, even to the point of photographic execution, although why this should be desirable is a question worthy of more consideration than it has received in the past.

Children first draw the head, body and extremities in sections, concentrating on specific parts. The arms and legs appear only after the body and head are started; as children grow older, the combined body parts develop towards a single unit. Eventually the head attaches to the body with a continuous neck instead of a square or rectangle; the fingers become continuous from a hand that is continuous from an arm; the clothing becomes part of the figure not a paper doll addition. Finally, the figure looks like a real person. Each drawing step grows closer to the real object (Arnheim, 1954). Development towards realism and naturalism is usually considered progress in children's drawings.

Older children have certain drawing characteristics that may be developmental or may be learned by instruction or practice: shading, varying line thickness, and contrasting objects. Arnheim (1954) explained developmental process in terms of representing an object with volume. Hilda Lewis (1962) studied first through sixth grade development toward drawing objects that appeared spatially correct. In representing a house, the simplest solution was a square, used more often by first and second graders. The least correct solution, where "faces of several sides of the house were shown in a single plane" occurred more often in grades three through six. She suggested that developmental processes may "for a time be directed away from as well

as towards increased naturalism" (p. 75). Spatial depth was found to increase with age, with children in the upper grades completing true cubes for the house. Lark-Horowitz (1962) found that drawing in perspective was an attribute only of children with previous art instruction.

Rhoda Kellogg (1979) assembled the largest collection of children's art from all over the world. Through organizing the pictures, she categorized progression of children's representations of the human figure. She found that young children's drawing abilities increased with age, but that specific ages have no particular characteristics. Children's abilities increased until they reached adolescence, when a period of regression in drawing interest and skill occurred. Many theories for this reversal have been researched. The decline is documented any where from 10 to 15 years of age. Lewis and Livson (1967) found it occurring at age 12 and Kincaid (1961) observed it at 13 to 14 years of age.

Adolescent Artistic Decline

Adults' perceptual abilities appear to level off after puberty unless developed through further education. Researchers have documented this decline in figure drawing (Goodenough, 1926; Harris, 1963), in aesthetic judgment (Bulley, 1934), and in various other aspects of creating and responding to art (Cameron, 1938; Lowenfeld, 1947; Lorge, Tuckman and Dunn, 1958; Eisner, 1967; Lewis and Livson, 1967; Richards and Ross, 1967; Rosenstiel and Gardner, 1977).

Harris found a leveling in the "thirteen- to fifteen-year age groups" (Harris, 1963, p. 102). This finding was consistent with

Goodenough's observation that the test has no gain in score after the age of twelve or thirteen (Goodenough, 1926). Adolescents have increased both their ability to judge their own drawings as representations of reality and their ability for self-criticism. When visual representation becomes excessively important, as in our society, the child "becomes markedly aware of the photographic or visual image, grows self-critical and gives up his drawing unless he is able to master techniques for achieving effects that he understands and wishes to achieve" (Harris, 1963, p. 230).

Bulley (1934) studied the aesthetic judgments of children and adults by rating their responses to nine pairs of pictures of "contrasted objects of household or domestic use, each contrast representing a better and worse example from the point of aesthetic value" (p. 162). She found that aesthetic taste followed a developmental pattern. She felt the children rated well because of their ability to share the artists' vision of an imaginative life. Taste declined at 10 and was lowest between age 11 and 13 years. After age 13, it steadily improved to the level of adult taste. The taste of the oldest elementary school children was similar to adults with an elementary education; secondary students' scores were comparable to adults with a secondary education.

Cameron (1938) felt that an artistic decline occurs because children's interests shift from visual and verbal to social activities. Lowenfeld (1947) felt that adolescents' previous modes of expression are no longer suitable. "This period in which the youth has neither an unconscious childish nor a conscious approach of self-expression is marked

by a very profound crisis, which sometimes shakes the whole self-confidence. This is the reason why so many individuals stop their creative work at this period." (p. 257).

Lorge, Tuckman, and Dunn (1958) found consistency in drawings of young adults up to the age of the late 30s and then a decline. Eisner (1967) rated drawings of children on their spatial syntax, using the horizon line and figure placement as criteria. The drawings were rated from 1 to 14 on points described as no horizon line; and figures floating; figures on the bottom edge of the paper and a horizon line included; figures standing on the horizon line; to figures overlapping the horizon line. Eisner found reduced variability in drawings as children mature and speculated that the decline reflected the lack of instruction in drawing. If "children had instruction in drawing specifically, it would be reasonable to expect variability in performance to behave in ways similar to variability in patterns found in other areas" (p. 32). Since instruction generally has been absent from public school education, achieving mastery of complex drawing skills has been minimal among U.S. adults.

Lewis and Livson (1967) studied first through sixth graders' abilities to represent a three-dimensional object as a two-dimensional drawing. Four stimulus objects were used: a cube, a pyramid, a pentagon, and a cylinder. The drawings were grouped according to similarities; an example for each group of similarities was used to compare the drawings. Through series of drawings, the child progressed from drawing the object incorrectly to an accurate rendering of the object. Accuracy increased from grades one through six; rapid improvement

occurred during early elementary school years; and accuracy declined at grade six. Lewis and Livson felt the decline was due to children's ability to recognize the structure of an object. "The developmental course for a group of children is more like a set of spirals than a line, with naturalistically correct views as the common starting and end points with individual paths between these two points." (p. 50).

Richards and Ross' detailed study (1967) of five to fourteen year old children's drawing of a cat and kittens showed differences in renderings of younger children compared to older children. They measured the following items: number of colors used, the use of unrealistic colors, the size of the drawing area, inclusion of a background, whether strips represented the sky and ground, and whether figures were outlined. The number of colors used peaked at age 7 or 8, declined slightly, peaked again at age 11, then declined sharply. Early ages used a wide range of unrealistic color; color became more true-to-life as children grew older. Younger and older children used about the same sized drawing area on their papers.

The percentage of children drawing cats with backgrounds increased to the age of 11 years, and then declined. Children ceased representing ground and sky by horizontal strips after age 10. Outlining decreased until age 10 and then increased slightly to age 14. Richards and Ross suggested that artistic regression in adolescence is caused by critical and realistic attitude that accompanies adolescence. An additional hypothesis is that color use may contribute to high ratings of younger children's art performance, since judges may consider unrealistic colors a sign of originality.

Rosenstiel and Gardner (1977) studied first, third, sixth, and tenth graders to see if an observed decline in artistic skills related to the beginning of Piaget's formal mental operations, specifically a rise in critical abilities. Children were exposed, after the completion of their own first drawing, to drawings that were more proficiently executed. Older children who viewed more proficient drawings spent more time on their own second drawing. They often made negative statements about their own work, even though their actual competency (skill level) increased with age. The authors suggested that critical awareness hindered the productivity of adolescents. The decline observed by Gardner and his associates, it should be noted, was not in competency but in flavorfulness, a criterion defined by Gardner et al. as the elaborative and expressive use of elements within an artwork. Flavorfulness may also describe the idiosyncratic use of color observed by Richards and Ross, a phenomenon whose significance in children's art may be misunderstood because of its role in adult artistic expression. It is not yet clear that a decline in flavorfulness indicates a regression in artistic development, and the conclusion that "artistic sensitivity may attain a high point in our society in the pre-adolescent years" (Rosenstiel and Gardner, 1977, p. 42) seems premature, given the arbitrary nature of the criterion and the training effects observed in this study.

Developmental Growth Patterns

Papalia and Olds (1979) described major theories on developmental stages in children. In Freudian thought, humans go through several

different stages of psychosexual development. Piaget explained children's behavior in terms of stages of increasingly complex mental operations. Erikson's eight stages of psychosocial development allow for society's influence on the personality being developed. His stages each have a crisis or turning point, the adolescents' crisis being identity vs. role confusion. The works of developmental psychologists provide many useful insights into the development of graphic expression, a point of view only recently enunciated by Gardner (1973) and still not an area of expertise for most art educators.

When children enter school, productivity becomes important. They learn to channel the creative energy that formerly went into un-directed play, they become workers, they learn cultural skills, and they win recognition for their success and efforts. This reinforces a positive self-concept and is crucial in development of self-esteem. If specific aspects of growth are overemphasized or overlooked, it causes an imbalance in the child's psychological development.

Adolescent artistic decline could be the result of natural or psychological aspects of growth. Adolescence begins with a period of rapid physiological growth of primary and secondary sex characteristics. Artistic decline may occur because of biological changes or pressures the not-yet-adult has to face (Eisner, 1965). Adolescents of past generations had less trouble conforming to society than they do today. There were opportunities for people to work at a young age, thus identifying with the role of adulthood. Because of the passing of labor laws, children now are required to stay in school and cannot have full time jobs. The role of adulthood and of the working class is far removed

from present studies; they are no longer children, but they are not yet adults. Progressive societies have created a new class of people, the adolescent.

Margaret Mead found adolescence is not a universal trait. Her study of Samoan and New Guinean adolescents showed that there was no storm or stressful period as in our culture. There was a "serene and gradual transition from childhood to adulthood...and an easy acceptance of the adult role" (Papalia and Olds, 1979, p. 517). Our society considers children to be different from adults. Our shift from childhood therefore is more discontinuous and consequently more stressful. Bandura and Walters (1959) interviewed families of teenage boys and found if the adolescent feels independent, has parental support and communication, and has some adult responsibilities, he will have less trouble in transition towards adulthood.

The artistic decline in adolescent creativity is comparable to that found in girls' motor development. Espenschande studied jumping, throwing, and running in children from age 5 to 7 years (Papalia and Olds, 1979). As boys matured, their motor coordination increased up to the age of 17. In the jump and reach test, adolescent boys showed a slight decline at the age of 13 years, but then increased. The girls improved until the age of 13 and then performance in physical activities declined or leveled off.

As children mature, they question adult performance. Erikson (1950, 1965, 1968) saw the danger of adolescents' identity confusion. He found identity confusion caused the adolescent to act impulsively to "commit themselves to poorly thought-out courses of action or by regressing into childishness to avoid resolving conflicts" (Papalia and

Olds, 1979, p. 522). The adolescent's attempt to make sense of the world and himself is a vital process for ego strength in adults.

Intelligence tests rate mental abilities. When an intelligence test is given to the same person throughout life, the rate of mental growth is rapid through adolescence and levels off in adulthood. Horn and Cattell (1966) measured two mental abilities: fluid intelligence, which depends on neurological functioning, healthy brain maintenance, sense receptor activity, and motor responses necessary for intellectual functioning; crystallized intelligence, which is the accumulation of information and problem solving strategies. Crystallized intelligence rose steadily through adulthood, but fluid intelligence (memory span, thinking speed, and recall ability) declined at the end of adolescence or the beginning of adulthood. The period of early adolescence is a time of growth in both fluid and crystallized intelligence (Horn, 1970). During early adolescence, memory span and memory skills increased. Lehman and Goodnow found adolescents are more skilled than children in "imposing memory strategies, or mnemonic devices to help them organize and retrieve large amounts of information (Newman and Newman, 1979, p. 180).

Long, Ziller, and Henderson (1968), in rating sixth through twelfth graders for personal relation to social systems, found self-esteem increased with age. Dependency, the ability of seeing oneself as a member of a group rather than as an individual, increased until ninth grade and then declined.

The organismic world view of human development "sees people as active organisms who, by their own actions set in motion their own

development. They initiate acts...the whole is greater than the sum or its parts, we cannot break behavior down into separate elements to predict cause-and-effect relationships" (Papalia and Olds, 1979, p. 10). Jean Piaget is the most important advocate of the organismic view. He found developmental stages to be fixed, though the rate of development is not. He ranks human cognitive development in stages; each is a unique result of interaction between maturation and environment. Formal operational skills occurred from around 12 to 15 years of age through adulthood. When this thought process prevails, the individual thinks in abstract terms and deals with hypothetical situations, imagining many possibilities for the answer to situations (Papalia and Olds, 1979).

McCall, Applebaum, and Hogarty (1973) evaluated IQ pattern over a period of $14\frac{1}{2}$ years from age $2\frac{1}{2}$ to 17. They identified five patterns of change, which they grouped into three clusters. Some adolescents experienced slow, steady rise in competence; other declined after an earlier rise in competence; and others' competence increased after an earlier decline. Intellectual development, rather than having a set rate of growth, showed gains and losses in functioning through-out the ages tested. The fluctuation in IQ patterns related to "opportunities, motivation, psychosocial expectations...and personal competence" (Newman and Newman, 1979, p. 188).

Getzels and Jackson (1962) compared intelligence and creativity in gifted high school students. The highly creative group, scoring in the top 20% on creativity tests, scored in the lower 20% on intelligence tests. The highly intelligent group, while in the top 20% on

intelligence tests, rated in the lower 20% on creativity tests. The creativity group also chose unconventional jobs when asked their desired occupation. "Creativity appears to be a personal, inner resource that permits students with average intelligence to make highly effective responses in the academic setting" (Newman and Newman, 1979, p. 195). Creative students have been known to have difficulties in schools they attend (Eisner, 1965). Torrance found a decline in creativity at the 7th grade level. Anxiety increase, "academic expectations, peer pressure, and social roles all serve to decrease the nonevaluative approach" that is the reciprocal of divergent thinking (Newman and Newman, 1979, p. 195).

Effects of Teaching on Graphic Development

Art education seems to influence drawing behavior and attitudes toward art. Lowenfeld (1939) found that each child possesses a capacity for creative development. Creativity exposes children through all their senses to the qualities of life, through direct experiences with tactile, visual, and auditory phenomena. Graphic ability:

will not develop unless the individual is in a social and educational setting which places considerable importance on drawing... and encourages the individual to achieve... Techniques can and must be learned if the individual is to continue to grow in his graphic effort past childhood (Harris, 1963, p. 235).

Henry Schaefer-Simmern (1948) felt that artistic activity was independent of conceptual thoughts and abstract thinking. Artistic activity should function naturally and incentive for artistic growth is in the desire for clearer visual cognition. He felt that it was impossible to "attain the artistic form by advising students to compose a

pictorial work according to special rules of outwardly predetermined pictorial effects" (p. 198). Inherent artistic abilities take place only if its execution is suited to the individual's specific mental capacities and interests.

Psychologists have accumulated a body of experimental work in visual perception that has been helpful to art education researchers. Attneave (1954) studied the concentration of essential information in contour line drawings with reference to visual cues in the line. The cues included change of line direction, peaks or curves, and line intersection. Eighty students were asked to place 10 dots around a shape that would resemble that shape as closely as possible. Attneave found that cueing on the line changes increased the amount of visual information of child used in his own drawings.

Experimenters in art education have found Attneave's methods to have a positive effect on teaching contour drawing to children. Salome (1965) asked children to draw a table lamp, model truck, or armadillo. Various examples were given to the experimental group in locating points of maximal contour information by using silhouettes, yarn glued to objects, or an actual drawing of a two-dimensional silhouette. The control group was given conventional instruction in drawing the same objects. Salome concluded that perceptual training increased the child's ability to render representational drawings. As a child gets older, habitual ways of perceiving the environment develop and without special instruction, deficiencies in the children's visual perception may occur (Salome, 1966).

Rush, Weckesser, and Sabers (1980) built on Salome's work in teaching third grade students to draw a tricycle. They compared the effects of two methods of teaching contour drawing, modeling the drawing process, and using pre-drawn examples. The drawings were evaluated on Salome's scale of closure-clarity, proportion, differentiation, and line quality. The pre-drawn example, as an instructional method, proved to be a better teaching aid for contour drawing.

Personal Adjustment and Artistic Merit in Figure Drawings

Sherman (1958) rated human figure drawings by psychiatric patients and nursing assistants according to artistic abilities and personal adjustment. These drawings were ranked by psychologists and art students in order of artistic excellence. A separate group of psychologists also rated the same group of drawings for level of personal adjustment. Sherman found that psychologists could not distinguish patient from non-patient drawings. There was a significant relationship between judgments of artistic merit and judgments of personal adjustment.

To evaluate the extent that artistic merit of human figure drawings is related to personal adjustment, Whitmyre (1953) rated figure drawings of psychiatric and non-psychiatric cases. One group of psychologists ranked a set of drawings for artistic merit, another group ranked the same set of drawings for adjustment, and a group of art students ranked the drawings according to artistic merit.

The drawings ranked by personal adjustment were similar to rankings by artistic merit. Whitmyre concluded that the artistic excellence of a drawing is highly related to personal adjustment.

Sherman (1958) and Swenson (1955) studied the relationship of artistic ability to the amount of sexual differentiation observed in human figure drawings. Swenson and Newton (1955) administered the Draw-a-Man Test to elementary students and college students. The drawings were rated for sexual differentiation from little or no sexual differentiation to excellent sexual differentiation. Results showed that girls tended to differentiate the sexes significantly better than boys until age 13, when the boys caught up. It was also found that sexual differentiation increased with age. Sherman (1955) ranked human figure drawings from hospitalized psychiatric patients and a group of nursing assistants by sexual differentiation and artistic ability. He concluded that there was a significant relationship between the two scores; sexual differentiation evaluation apparently measured artistic ability rather than personality variables.

Methods for Rating Human Figure Drawings Used in This Study

Goodenough and Harris Draw-a-Man Test

Florence Goodenough (1926) first developed a scale for rating children's drawings of the human figure. The Goodenough Draw-a-Man (DAM) Test attempted to determine intellectual merit through drawings of the human figure. She demonstrated that drawing had a cognitive as

well as an aesthetic meaning. The test has been used widely to study the intellectual level of children, their personality and adjustment problems, and delinquency. Harris (1963) modified the DAM scale by extending it into adolescent years, exploring new items to increase reliability and developing a scale for the drawing of a woman and of one's self. The Draw-a-Woman Scale proved reliable, while the self-drawing did not.

The Goodenough-Harris Draw-a-Person (DAP) Test measures drawings on the basis of the number of details included. The validity of the DAP can be shown by three criteria: "(1) a regular and (2) a fairly rapid increase in percentage of children succeeding with the points at successive ages, and (3) a clear differentiation between the performance of children who were of the same age and different school grades" (Harris, 1963, p. 69). The increase in points at successive ages correlates with developmental drawing stages. The more advanced the child's stages of drawing the figure, the higher his score is on the DAP. To find the standard score equivalents for subjects, their age and score of total points is converted to a standard table. This represents the child's relative standing in relation to his own sex and age group.

Adult scores on DAP. Harris (1963) found the DAP test was reliable as a measure of mental maturity only to the age of 15 years. Goodenough (1926) found that the test ceased to discriminate intellectual differences at age 11 or 12. Researchers have successfully used the DAP to rate adult drawings (Berdie, 1945). Murphy (1956)

found that the Goodenough scale did not establish validity for the DAP test beyond the 10 year age level. This leveling off about the age of puberty occurs on all kinds of intelligence tests.

Berdie (1945) found a correlation of +.62 between test scores on Stanford Binet IQ test and scores in the DAP with adults. The test given used 20 of the 51 points used in the original scale. The DAP test was useful "with adults of limited intelligence" (p. 294). The test does not indicate whether it is appropriate for adults of normal superior intelligence. In older adults, Berdie felt that the test rated artistic ability rather than intellectual maturity. Kincaid (1961) found that in adults, aesthetic quality surpasses creative ability while in children, creative ability passes aesthetic ability.

Studies on actual measurement of DAP. Harris (1963) found the DAP test was not suitable for testing artistic aptitude. The ability to form concepts is an intellectual ability requiring the child to recognize similarities and differences among a group of particulars. Harris hypothesized that a child's concept of a frequently experienced object, such as the human figure, becomes a useful index to the growing complexity of his concepts.

Goodenough (1926) and Harris (1963) believed that their test did not measure artistic ability and that normal art instruction would not influence the scores on the DAP. Burns and Velicer (1977) concluded otherwise when they studied the effect of ordinary art instruction in the human figure on the score on the Goodenough-Harris Drawing Test. Using fourth and fifth grade students, they found that

significant improvement occurred in the posttest in the group that received art lessons than in the group who lacked instruction.

Hullett (1975) studied the effects of putting together a puzzle of the human figure before taking the test. He found that the DAP scores increased in the group who practiced with the puzzle before taking the test.

Smith (1937) studied the DAP test and its validity by comparing it to the California Mental Maturity Test and other intelligence tests. He found that Goodenough's results deviated from IQ scores, suggesting that the test measured specialized abilities and mental maturity rather than general intelligence.

Phatak (1959) modified the scale to study the relationship between artistic merit and intelligence. Judges rated drawings on whether they were pleasing, appealing, interesting. The artistic drawings exceeded the non-artistic ones on the representation of arms, the development of the hip joint or crotch, and the use of a sketching technique; the non-artistic drawings exceeded on three points pertaining to finger and hand detail. This study added that the method of scoring the drawings was independent of artistic abilities.

Golomb (1973) studied drawings and sculptures of 3 to 7 year olds in nursery school, kindergarten, and first grade. She used a point scale and structure scale. Golomb's point (detail) scale credited "each graphically represented body part with one point, regardless of the organizational quality of the representation...." (p. 211). The final score was the total of all parts represented.

Her structural (artistic merit) scale was a "qualitative scale designed to assess the formal, organizational aspects of the representation...." (p. 212). In most of the 12 drawing and sculpting tasks there was no significant difference between scores on the two scales when they were used in combination to score the same work.

Artistic Merit Scale

The Artistic Rating Scale is a modified version of the instrument developed by Paul Mussen and Hilda Lewis. The test is constructed from their final report to identify creativity in pre-adolescents. The Mussen-Lewis Scale is a modified form of the Rouse Scale (1965) that uses a five-point rating scale ranging from excellent to very poor. Fourteen components of artistic merit in the graphic depiction of the human figure are measured. These items are: originality, asymmetry, size, unity, gradation, mass, texture, proportion, line, movement, craftsmanship, context, spontaneity, and artistic merit.

CHAPTER 3

DATA COLLECTION METHOD AND ANALYSIS

Subjects

Three groups of subjects were examined: 124 male and female public school eighth grade students enrolled in 6 general art classes; 121 male and female university students enrolled in 7 beginning drawing classes; and 112 male and female non-art major university students enrolled in 6 classes of visual arts for elementary education.

The eighth graders were junior high school students in schools where art was an elective subject; their median age was 13. The drawing students were freshman and sophomores, some of whom were declared art majors and some of whom were not; they were taking a class required of all beginning art students in which they drew from still life or models. The non-art college students were juniors and seniors whose last formal art instruction occurred no later than eighth grade. This group had no experience in drawing from real life. All university students participated in the study early in the semester, that is, no later than one week after the beginning of classes, in order to minimize the effects of current instruction. Completed questionnaires will be culled by random selection from all groups to provide equal numbers of male and female participants at each level for data analysis.

Procedure

Data Collection

Students drew both a male and female human figure on forms provided by the experimenter. All drawing was done in classroom situations. Students were given the option of not participating, but almost all members of each group tested chose to join in. The test was given in a manner similar to procedures in the Goodenough-Harris Test Manual (Harris, 1963). The instructions were as follows:

On the following two pages I want you to make, from memory, pictures of a man and a woman. On page #2 make a full-length (whole body) drawing of a man. On page #3 make a full-length (whole body) drawing of a woman. Work as carefully as you can.

You have 20 minutes to complete both drawings. Make the very best pictures you can in the time available.

You may draw either the man first or the woman first, whichever you prefer. Circle the words number one at the top of the page for the first drawing you do. When you complete the first drawing, go on to the second one. You do not need to work the entire 20 minutes, but be sure to complete both drawings.

I will keep track of the time and will tell you, every five minutes, how much time you have left. When you are finished, sit quietly at your desk. After the entire 20 minutes have passed, I will collect all of the papers.

Participation in this study is completely voluntary. It has nothing to do with this class. Your teacher will not see the drawings that you make.

Tests and sharpened pencils, with eraser tips, were distributed by two experimenters. Each test booklet contained three $8\frac{1}{2}$ " x 11" pages. Page number 1 held the instructions described above; pages two and three each held a linear rectangle approximately $6\frac{1}{2}$ " x 8", with instructions to draw a man on page 2 and a woman on page 3. The students were instructed to circle number one or number two on each page containing a drawing, depending on whether it was completed first or second.

The experimenter read the instructions aloud, signalled the beginning of the test, and kept track of the time. At the end of 20 minutes, she collected all papers and pencils, thanked the students and their teacher for their help, and left the classroom. Only drawings in which students had shown most of both figures, even if the figures were incomplete, were scored. Consistency between the two drawings was the criterion used in deciding to include or exclude drawings. Some students spent most of their time on one drawing, rather than making two figures as instructed. Pairs composed of one drawing completed with great detail and one blank page, or one page containing only a rudimentary head, were eliminated. Incomplete drawings, those missing some features, were left in the study if both the man and the woman drawings were judged comparable in quality.

Rating

Because there is some disagreement in the literature over whether the DAP measures artistic qualities, the drawings were rated according to two different scales, a detail or elaboration measure and a measure of artistic merit or structure. The Detail (elaboration) scale was constructed by modifying the Draw-a-Man and Draw-a-Woman scoring scales from Harris (1963). The Artistic Merit (structure) scale was formed from a version of the Rouse Scale used by Mussen and Lewis (1967) and Lewis and Mussen (1969), (see Appendix A and B).

Detail Rating Scale. The Detail Rating Scale is a shortened version of the published point scales for scoring the Goodenough Draw-a-Man and Draw-a-Woman Tests revised and extended by Harris in 1963. These scales measure the amount of detail in each drawing and therefore may be considered an elaboration measure, one of the four characteristics of creativity (fluency, flexibility, elaboration, and originality) identified by Guilford and used by Torrance.

Harris' Man Point Scale contains 73 items and the Woman Point Scale 71 items. For the present study, which used only older children and adults, the number of items was reduced to 48 by restricting the list to those that identified the most detail. The reduction was made to facilitate scoring by reducing the time spent on each drawing. Since the purpose of the test was not to ascertain mental maturity (IQ), there was no need to convert raw scores to standardized scores and thus no need to follow the Harris point scales exactly.

We selected 41 items that applied to both the man and woman drawings; 7 items that specifically applied to man drawings only; and 7 different items that applied to woman drawings only. Each drawing therefore could receive a maximum score of 48. Items were scored according to the Harris-Goodenough method as being either present or absent; each item received one point when a detail was present and zero when absent. No half-credits were given. The score for each drawing was the sum of the number of details observed.

Artistic Merit Rating Scale. The Artistic Merit Scale is a modified version of the instrument developed by Paul Mussen and Hilda Lewis to identify creativity in preadolescents. Our test was constructed from their reports, "Criteria for Evaluation of Children's Artistic Creativity" (1967) and "The Development of an Instrument for Evaluating Children's Artistic Creativity" (1969). The Mussen-Lewis scale was itself a modified form of the Rouse Scale (1965).

The artistic merit test uses a five-point rating scale ranging from excellent to very poor to assess 14 components of artistic merit in the graphic depiction of the human figure. These items are as follows: originality, asymmetry, size, unity, gradation, mass, texture, proportion, line, movement, craftsmanship, context, spontaneity, and artistic merit. For purposes of scoring, each value judgment category on the rating scale will be assigned a numerical value: excellent, 5; good, 4; fair, 3; poor, 2; very poor, 1. The higher the score on any

item, the greater the perceived strength of that quality in a drawing. A high score on the test will indicate high artistic merit in the figure drawing being rated.

Data Analysis

All drawings will be rated by two independent judges, with a correlation matrix used to determine inter-rater reliability. Drawings will be examined according to two sets of criteria, one for amount of detail and one for artistic ability.

Scores derived from both of the measures will be examined by analysis of variance to compare performance between the three groups (eighth graders, university non-art majors, and university beginning art students) and between males and females at each level. A correlational study will be made to determine whether or not there is any relationship between performance on the DAP and artistic merit scales. If such a relationship exists, a multiple regression analysis will be used, with the DAP measure of detail as the dependent variable and the items on the artistic merit scale as the independent variables, to define the interaction in more detail.

CHAPTER 4

DISCUSSION

At present, data analysis in the study is incomplete.

Two independent judges have rated all of the drawings according to the Detail (elaboration) point scale. None of the drawings as yet has been scored according to the Artistic Merit (structure) scale. This is due to the size of the study. There are 357 sets of drawings, or 714 individual drawings, to be rated. So far, while using the point scale, the judges have spent approximately 3 minutes on each drawing.

Judges knew in advance the ages of the three groups being rated, but not which drawings or how many came from each group. All of the drawings were assigned code numbers for identification and then randomly mixed. As a result, we cannot report at this time on the comparative performances of the groups under observation. We can and shall report, however, on general characteristics observed by the judges in the collected drawings. We shall approach this by describing performance on some individual items of the Detail scale and discussing what it has revealed about both the student artists and the test.

Scoring

The Detail scale measured the presence or absence of specific features of the body or clothing. The Goodenough-Harris point scales, which we used as a guide, included over 70 points for each of the man and woman scales. It was clear from preliminary examination of the drawings that the majority of all students, older children and adults alike, drew figures that contained most basic body parts. When we trimmed the Goodenough-Harris scale to 48 items, therefore, we omitted points obviously designed for young children such as head present, arms present, feet present. On our scale no points were given for the presence of eyes, for example, but points were given for items such as eyebrow or eyelash, pupil, and eye dimension. Each of these three items would score one point. If the eyes were missing, the effect on the final score would reduce the total by three points instead of one.

While most of the older children and adults studied drew completed figures with all limbs and facial features present, many did not. The scores awarded by the raters ranged throughout the available 48 possible points. The highest score given to any drawing was 40; the lowest was 6. This spread indicates that our modified DAP scale was sufficient for our purposes, that of discrimination between rudimentary and advanced drawings on the basis of the amount of detail they contained. No subject's score hit the top of the scale, so it wasn't too easy; no subjects score hit bottom, so it wasn't too hard.

Drawings receiving low scores were quite rudimentary. Arms and legs represented by rectangles lost a point because of the lack of an elbow; eyes represented by circles could not be credited for having the width longer than the length. Drawings awarded high scores contained very complete figures with considerable facial, finger, feet, and clothing details.

Item Analysis

Man and Woman Items

1. Neck. Contrary to our expectations, we found that some drawings had only a rectangle, square, or two parallel lines for the neck. These students drew parts of the body separately, concentrating on one part of the drawing at a time. Considering the body as a unit is a characteristic of later drawing stages in children's representation of the figure. This item proved to be a useful criterion for the separation of good and poor drawing concepts.

2, 3, 4. Eye Detail (brow or lashes, pupil, horizontal dimension greater than vertical). The majority of the drawings had most eye details. It was hard to distinguish the pupil in many cases, but rarely were eyelashes and eyebrows omitted. The horizontal dimension was usually longer than the vertical length.

5, 6. Nose. Most people represented the nose correctly but much fewer included the bridge of the nose. The bridge of the nose was another criterion that differentiated between good and poor drawing.

7. Lips. Because of small drawings, details of the face were hard to see. The point originally designated that lips be clearly shown in two dimensions, but for this study, it was changed to any attempt to draw lips using more than one line; smiley faces and pumpkin mouths were not credited.

8. Chin and forehead. According to Harris, to receive a point for this feature the mouth and the eyes had to be drawn. Drawings without facial features did not receive this point. Some drawings received credit even though the mouth was placed close to the bottom of the chin and the eyes too close to the top of the head. In retrospect it did not seem appropriate that these drawings received the same credit as well-proportioned facial features. It would be more equitable for the forehead and chin to have a measurement or proportion from the eyes to the top of the head and from the mouth to the bottom of the chin.

9. Line of jaw. This scored in many drawings. The use of a square or two parallel lines for the neck instead of a continuous neck (#1) tended many times to decrease the possibility of receiving credit here. These drawings usually had thin necks or circular heads. This item turned out to be a good differentiation for more advanced drawing concepts.

10. Hair: shaded. All hair was credited unless there was only a single line to indicate it. Since this point related to most drawings, it did not differentiate between skill levels and could be omitted.

11. Hair: definite hairstyle. This was the hardest criterion to score. It was hard to tell in many of the drawings whether the artist was thinking of a particular style or whether he or she was carelessly placing something on top of the head. Harris credited sideburns and forelocks, but since current hairstyles are now different, scribbles for curly hair and parts in the hair were credited. The artist who may have simply scribbled received a point indistinguishable from the one given to a well-executed hairstyle. The judging criteria should have explained style in more detail in order that well-executed drawings only received the point. A scribbling style should have been counted only if it conformed to the face; sloppy styles should not have received credit here.

12. Hair: directed line. Harris stated that this should not be credited unless #11 was also credited. Shaded hair did not count. There was a wide range of quality in attempts to show hair strands. In many cases, judges felt that they gave credit for this point to undeserving drawings. This item would have been more definitive if rated strictly on the line quality in the hair.

13. Shoulders. Many of the drawings did not score on this point, not because they did not have square shoulders but because the line was not continuous with the neck (#1). Round, droopy shoulders did not score. This was a good criterion for separating good from poor drawings.

14. Elbow joint. This criterion was effective; many of the poor drawings had no indication of elbows, or the elbows were curved.

15. Fingers: correct number. The number of fingers had to be correct on both hands, although sketchy attempts were credited. In general this was a good item. There should be an added description for showing of hands from the side view, where only a few fingers and the thumb are seen. Profile drawings usually were well drawn, but many did not receive a point here because of the criteria in the book.

16. Fingers: detail correct. This was a good criterion and was scored strictly.

17. Thumb. There should have been a clear opposition of the thumb in order to score here. Both well-executed drawings and poorly-executed drawings showed sketchy attempts at the hand, and the thumb was hard to distinguish from the rest of the fingers. Drawings like this were not credited.

18. Hip. The only drawings that did not score here on the man scale were those where the legs were not continuous with the hips. In woman drawings, this point usually was not credited if a shirt was represented since it was difficult to trace the legs to see if they came to a point for the crotch. Drawings where a long shirt was represented, even if well-drawn, usually did not get credit here since only a small part of the legs can be seen. In the female drawings, this should be omitted in the future or additional scoring methods for different skirt length should be better defined.

19. Feet: proportion. Almost all drawings rated here, but there were some clubbed feet that did not score, making it necessary to keep this point.

21. Feet: perspective. This is a good criterion since only well-executed drawings attempted to foreshorten.

22. Clothing: no transparencies. Almost all drawings rated on this feature. For this reason it could be omitted in future studies of advanced drawings.

23. Clothing: neckline. Because of the wide variety of contemporary clothing styles, this criterion should be changed to credit any attempt to draw a neckline unless it is just a single line separating the head from the chest. To further differentiate good drawings, the collar should be counted when it is separate from the neck and not part of the neck.

24. Clothing: sleeve. We observed this item only in advanced drawings. The sleeve line should be separate from the line of the arm.

25. Clothing: costume complete. This was credited unless a neckline, sleeve line, or pantline was omitted. Practically any type of clothing may be scored because of the wide selection of clothing that is available today, making the item of little use. Many men and women were drawn topless, and these drawings were credited although this may not have been Harris' original intention.

26. Nude figure. Nude drawings seemed to be more advanced, in general, than clothed figures. Nudes that were not drawn well seemed to be drawn as a joke. Most nudes rated well in proportion and body contours. In some cases it was difficult to distinguish a nude figure because of a line that could indicate clothing.

27. Genitals. Genitals were usually included in male drawings but not as often in drawings of female nudes. In some cases this part had been erased or redrawn.

28. Head proportion. In almost half the pictures rated, the head was too large for the rest of the body. This may be because the head was the first part drawn and space was limited for the rest of the body.

29, 30. Trunk proportion, limb proportion. These two features were credited in all of the drawings. These features could be eliminated on future tests.

31. Profile. Profile drawings in advanced work seemed to show the same skill level as front views of the face. Perhaps this criterion should be changed to 3/4 view. Many poor drawings, on the other hand, were quite awkward in profile: the nose was witchlike and breasts and hips looked unnatural.

32. Arm movement. This was credited if hands were behind the back or in pockets. Over half the drawings rated showed hands hidden in this way. It appeared to be an escape from drawing the hands and judges felt that motion should not be credited unless the

arms were showing actual movement or hands were visible. Any figure with its hands behind its back did not get the three points of credit dealing with finger detail.

33. Leg movement. This was a relatively rare phenomenon, and thus a good criterion.

34. Head outline. This point was scored in most profiles since an obvious careful line outlined the nose and lips while in frontal views, oval shapes were more common. This seemed to be scored more often in male figures than female figures because the cheekbones were noticeable.

35. Facial features. This also seemed to be more noticeable in man figures than woman figures. The features were more symmetrical and lifelike than in the female figures.

36. Tapered arms. The majority of the drawings did not have a noticeable difference in arm thickness, even in many well-executed drawings.

37. "Sketching" technique. The majority of the drawings used the sketchy technique. While Harris thought that it characterized more advanced drawings, the judges in this study felt that smooth lines seemed to be a better indication of drawing competence.

38. "Modeling" technique. This was a good criterion both for the man and woman. On drawings of women it was scored if the creases were anywhere other than the breasts and skirt, since these features were credited in #44 and #46.

39. Background objects. This was credited if there were any objects in the hand as well as in the background. This seemed to be a good criterion because it appeared in the better drawings.

40. Superior motor coordination. This was found rarely and was strictly rated. Drawings of males received the credit more than drawings of females.

41. Eye: glance. A glancing eye was rare in the drawings. The figures showing a glance did not exhibit increased artistic ability. Some of the drawings looked as if they were glancing because of other facial features were out of proportion.

Man Only Items

42. Projection of chin. This was displayed in the more advanced drawings.

43. Ears. Many drawings did not score here because of the hairstyle.

44. Wrist or ankle. Many of the immature drawings were drawn so that the pant line and the shirt line blended with the ankles and wrists. The separation shows advanced planning in the drawing.

45. Knee joint. This was very hard to judge when pants were on the figure.

46. Feet: heel. Profiles of the feet were drawn many times with no instep. This was a good criterion.

47. Clothing: four articles. It was rare that four well-executed pieces of clothing were shown on one figure.

48. Directed line and form. All the drawings displayed this to some extent. It could be omitted since it apparently pertains to younger children's drawings.

Woman Only Items

42. Cheeks. Many of the drawings had the cheeks indicated.

43. Necklace or earrings. Figures with clothing often had jewelry; nudes do not.

44. Skirt: modeled. Many of the skirts had a plaid design that was hard to distinguish from pleats. This was scored only if the stripes on the cloth were vertical or had some type of obvious shading or folding.

45. Shoe: feminine. This item seemed outdated. Many drawings did have heels but many had sandals or boots. All were credited.

46, 47. Breasts and hips. More advanced drawings showed these feminine characteristics.

48. Calf of leg. The calf was shown in advanced drawings only.

General Analysis

Judges felt that many of the points in our scale distinguished poorly executed from well executed drawings. This assessment is based both on the range of final scores and on the expertise of the raters both of whom were MA students in art education, one with teaching experience in art. The judges found themselves informally

rating the drawings according to artistic merit or degree of competence as they were engaged in scoring for detail. This informal quality assessment forms the basis of our evaluation.

Nude figures were generally well drawn, with body parts in good proportion. We have assumed that more nudes appeared in the group enrolled in an art class, which may have had some previous experience with drawing nude models. Drawings of nudes could not receive as many points as clothed figures because of the way our scale was constructed. Our scale had seven clothing points available for man drawings and nine for woman drawings, but there were only two points specifically for nude figures. Nudes often received more points for correct proportion and body details like elbow joints, foreshortening of one foot, and facial contour. There was a tendency for nudes to have less facial features than clothed figures, however. Because the point scale emphasized and rewarded facial and clothing details, judges found that nudes, while representing a more advanced drawing competency, received less points. Their superiority therefore was not reflected in their total score. Perhaps this could be adjusted in future studies by having a separate scale for nude figures based on the contour of specific body parts.

All of the man drawings were rated first. While rating the woman drawings, judges speculated that they recognized some of these drawings by personal style of the artist, and could easily have paired man and woman drawings by style, given the opportunity to do so.

We had not planned to investigate the characteristics of style in this study, but it is a phenomenon that should be evaluated in the future.

One of the judges questioned use of the frame in which students placed their drawings. Some of the drawings lacked parts of the body because the artist stopped at the border. Others ignored the borders altogether. While size limitation of the students' responses probably did not confound the analyses in any serious way, it remains a variable to be examined at some future time.

Clothing and hair styles have changed considerably since Harris' update of the point scales.; The judges observed several instances of incorrect point attributions due both to students' use of contemporary fashion or their own inability to accommodate to the changes. Long dresses, for example, which appear in many of the woman drawings, sometimes invalidated up to seven of the items on which they could have obtained points because the feet and hips were not revealed.

Many of the drawings appeared to have been done by competent artists. Just as many drawings were poorly executed. The majority of drawings were in between: neither good nor bad. Judges hypothesized that the drawings showing proportion and other characteristics of artistic merit belonged to the students in the beginning drawing classes. They felt that the figures most poorly rated probably belonged to the junior high school students.

The good drawings showed a definite progression past the preadolescent stages that a child goes through when drawing the figure. Many had a unique style, and judges believed that they would probably rate very well on the Artistic Merit scale. Many features that identified the good drawings were not identified by our Detail scale, confirming Harris's conclusion that the DAP did not measure artistic ability. The wide range of drawing quality evident in pictures collected showed that the subjects ranged from poor to competent artists. The competent drawings did not seem to be the result of development as much as of experience with drawing the figure far beyond that encountered by an average person.

APPENDIX A

DETAIL RATING SCALE

Man and Woman Point Scale Scoring Guide

1. Neck: Outline continuous with that of head, trunk, or both.
2. Eye detail: Brow or lashes.
3. Eye detail: Pupil.
4. Eye detail: Horizontal dimension greater than vertical.
5. Nose: Two dimensions.
6. Nose: Bridge of nose.
7. Lips: Two dimensions.
8. Chin and forehead. Both shown.
9. Line of jaw: Indicated.
10. Hair I: Shaded.
11. Hair II: Definite hairstyle.
12. Hair III: Directed lines.
13. Shoulders: Shoulders square, continuous with neck and arms.
14. Elbow joint: Shown.
15. Fingers: Correct number.
16. Fingers: Details correct.
17. Thumb: Opposition of thumb shown.
18. Hip. Shown; if profile, buttock must be shaped.
19. Feet I: Feet and legs shown in proportion; not clubbed.
20. Feet II: Details of shoe.
21. Feet III: Perspective; foreshortening attempted in at least one foot.
22. Clothing I: No transparencies in figure.
23. Clothing II: Neckline; collar indicated. Neckline must be "V'd" or definitely shaped in some other manner.

24. Clothing III: Sleeve; must show button, cuff, puffed sleeve (long or short), or sleeve definitely wider than arm. Credit strap or strapless gown. Be careful not to confuse bracelet or wristwatch with sleeve.
25. Clothing IV: Costume complete without incongruities; may be a "type" (cowboy, etc.) or everyday dress.
26. Nude figure: No clothing.
27. Genitalia: Shown.
28. Head Proportion: Head approximately one-fourth trunk area.
29. Trunk Proportion: Length of trunk greater than breadth.
30. Proportion of Limbs: Limbs longer than they are wide.
31. Profile: Figure shown in true profile, without error or transparency.
32. Arm movement: Shown.
33. Leg movement: Shown.
34. Directed Lines and Form-Head Outline: Must show contours of head and/or face. Face contour developed as a unit, not by adding lines. Simple circle or ellipse to which projecting features have been added does not score.
35. Directed Lines and Form-Facial Features: Features must be symmetrical in all respects. Eyes, nose, and mouth must all be shown in two dimensions. Profile: Eye must be seen from side; nose must form an obtuse angle with the forehead. Scoring should be strict.
36. Directed Lines and Form-Tapered Arms: Wrist and/or forearm distinctly narrower than upper arm.
37. "Sketching" technique: Lines formed by well controlled short strokes. Repeated tracing of long line segments is not credited.
38. "Modeling" technique: "Lines" or shading must indicate one or more of the following: garment creases, wrinkles, or folds, other than trouser press; fabric; hair; shoes; "coloring in"; or background features.

39. Background objects: Shown.
40. Superior Motor Coordination: Good pencil work on details as well as on major lines. All lines should be firmly drawn, with correct joining. Fine detail on facial features, small items of clothing, etc. Scoring should be quite strict. Erasures and/or redrawing invalidate this item.
41. Eye Detail: Glance.

Man Points Only

42. Projection of chin: Shown; chin clearly differentiated from lower lip.
43. Ears: Present; proper proportion and position.
44. Wrist or ankle: Shown.
45. Knee Joint: Shown.
46. Feet III: Heel shown.
47. Clothing IV: At least four articles of clothing indicated.
48. Directed Lines and Form: Outlines drawn without irregularities; body developed as a unit; contours define forms.

Woman Points Only

42. Cheeks: Shown.
43. Necklace or earrings: Shown.
44. Skirt: "modeled" to indicate pleats or draping.
45. Shoe: "feminine" in shape; high heel, open toe, etc.
46. Directed Lines and Form-Breast: Any attempt, by modeling or by contour, to indicate the feminine breast. Credit strapless gown if top is curved.
47. Directed Lines and Form-Hip Contour: Distinct convexity below waistline. Wide, uniformly curved bell-shaped flaring skirt does not count.
48. Directed Lines and Form-Calf of Leg: Leg shaped better than a taper. Definite calf must be shown. Score strictly.

DRAW-A-PERSON RATING SHEET

Rater Number _____	Man	Complete
Drawing Number _____	Woman	Incomplete
1	17	33
2	18	34
3	19	35
4	20	36
5	21	37
6	22	38
7	23	39
8	24	40
9	25	41
10	26	42
11	27	43
12	28	44
13	29	45
14	30	46
15	31	47
16	32	48

Instructions: Each item on the Scoring Guide either will or will not appear on each drawing. If it appears, circle the appropriate number on the Rating Sheet.

APPENDIX B

ARTISTIC MERIT RATING SCALE

Artistic Merit Test

Rater Number _____

Picture Number _____

Man _____

Woman _____

1. Originality. Figure as a whole is unique, inventive, imaginative.

_____ Originality is excellent

_____ Originality is good

_____ Originality is moderate

_____ Originality is poor

_____ Originality is very poor

2. Asymmetry. Figure is not symmetrical or is not positioned in the middle of the box, or both.

_____ Asymmetry is excellent

_____ Asymmetry is good

_____ Asymmetry is moderate

_____ Asymmetry is poor

_____ Asymmetry is very poor

3. Size. Height of figure is at least half of the distance between the top and bottom lines of the box.

_____ Size is excellent

_____ Size is good

_____ Size is moderate

_____ Size is poor

_____ Size is very poor

4. Unity. Figure works as a whole; integration of parts; no unintentional irregularities; contours developed as a unit, not by adding parts.

_____ Unity is excellent

_____ Unity is good

_____ Unity is moderate

_____ Unity is poor

_____ Unity is very poor

5. Gradation. Parts of figure are represented by one or more values of solid gray.

_____ Gradation is excellent

_____ Gradation is good

_____ Gradation is moderate

_____ Gradation is poor

_____ Gradation is very poor

6. Mass. Volume is represented by shading at edges of forms.

_____ Mass is excellent

_____ Mass is good

_____ Mass is moderate

_____ Mass is poor

_____ Mass is very poor

7. Texture. Indication of real or apparent surface quality.

_____ Texture is excellent

_____ Texture is good

_____ Texture is moderate

_____ Texture is poor

_____ Texture is very poor

8. Proportion. Size of limbs, head, and torso are lifelike in relation to the whole figure.

_____ Proportion is excellent

_____ Proportion is good

_____ Proportion is moderate

_____ Proportion is poor

_____ Proportion is very poor

9. Line. Lines vary from thick to thin depending upon the contour of the form described.

_____ Line is excellent

_____ Line is good

_____ Line is moderate

_____ Line is poor

_____ Line is very poor

10. Movement. Figure is displayed in active rather than stationary pose or in profile, or both.

_____ Movement is excellent

_____ Movement is good

_____ Movement is moderate

_____ Movement is poor

_____ Movement is very poor

11. Craftsmanship. Careful pencil work on details as well as on major lines; displays a range of graphic techniques.

_____ Craftsmanship is excellent

_____ Craftsmanship is good

_____ Craftsmanship is moderate

_____ Craftsmanship is poor

_____ Craftsmanship is very poor

12. Context. Inclusion of background objects or other figures; indication of depth by overlapping, perspective, etc.; cartoon words indicating speech.

_____ Context is excellent

_____ Context is good

_____ Context is moderate

_____ Context is poor

_____ Context is very poor

13. Spontaneity. Figure is handled with freedom and without undue constraint.

_____ Spontaneity is excellent

_____ Spontaneity is good

_____ Spontaneity is moderate

_____ Spontaneity is poor

_____ Spontaneity is very poor

14. Artistic Merit. Figure is graphically expressed in an artistically skillful way.

_____ Artistic Merit is excellent

_____ Artistic Merit is good

_____ Artistic Merit is moderate

_____ Artistic Merit is poor

_____ Artistic Merit is very poor

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