A NORMATIVE STUDY OF SEXUAL DIFFERENTIATION IN D-A-P DRAWINGS OF CHILDREN

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By

Cheryl J. Normington

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ABSTRACT

A NORMATIVE STUDY OF SEXUAL DIFFERENTIATION
IN D-A-P DRAWINGS OF CHILDREN

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In a normative study, three aspects of children's figure drawings were studied. These were: (1) development of sexual differentiation; (2) the relationship between the increasing ability to differentiate, and increasing mental age; and (3) male and female emphasis of the figures. Data is reported for 312 seven-through twelve-year-old children. At each age level, there were approximately 50 children, with the proportions of boys and girls being similar.

The pairs of drawings were scored for the degree of sexual differentiation present, as measured by Haworth's Sexual Differentiation Scale for the Draw-A-Person test. This test consists of four levels of differentiation, which are:

1. Figures nearly the same, no apparent sex.
2. Similar body configuration and facial features, minimal differentiation.
3. One figure more clearly differentiated as to sex.
4. Each figure well differentiated as to sex.

Sexual differentiation, as measured by this scale, was found to improve as a function of age, with the growth curve for both

boys and girls being moderately smooth. Girls tended to show somewhat more differentiation of the figures than did boys.

The higher levels of sexual differentiation on the scale do not seem merely to reflect increased mental age, for when chronological age was held constant by correlating level of differentiation and I. Q. scores at each of four age levels, the correlations were low and non-significant.

Male or female emphasis was determined by noting sex of the first drawn figure, sex of the larger figure, and sex of the more clearly differentiated figure at level three. Relationships between these measures of emphasis were considered.

Boys and girls were found to differ significantly in their treatment of figures at level three, with girls showing greater tendency to emphasize their own sex figure more (or to show equal emphasis of the figures). Both boys and girls tended to draw their own sex figure first, and their own sex figure larger, with girls showing a greater tendency to do so than boys, except at the older age levels, where boys showed equal, or greater tendency than girls to draw their own sex figure first.

A significant relationship between the measures, sex of the first drawn figure, and sex of the larger figure, was found to exist, whereas no significant relationship was found between the treatment of the figures at level three and either of the measures, sex of the first drawn figure, or sex of the larger figure.

Level three merits further investigation, especially in light of the significant sex differences in treatment of the figures at this level, and the independence of this measure from the measures of sex of the first drawn figure and sex of the larger figure.

Cultural factors which may be pertinent to the understanding of the sex differences existing both in ability to differentiate, and in proportions emphasizing their own sex figure were discussed.

The scale utilized in the study was found to be appropriate for use with children's drawings as a measure of the development of sexual differentiation.

Approved Cheryl R. Hammett
Major Professor

Date November 21, 1960

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I. INTRODUCTION

Differential treatment given to the male and female figures in the Draw-A-Person test has been the source of extensive research. One approach to the exploring of the meaning of the differential treatment has involved testing the hypotheses that the sex of the first drawn figures, and the sex of the larger figure may provide clues to sexual identification and sexual inversion.

A newer approach concerns the degree of differentiation, or lack of it, between the male and female figures, and the extent to which both figures are adequate representations of their sexes. A progressive development of the ability to increasingly differentiate the essential features of maleness and femaleness is theoretically expected in the drawings of children, and drawings in which the two sexes are clearly and correctly differentiated is theoretically expected to indicate an individual whose sexual identification is well established.

The development of sexual differentiation in seven- through twelve-year-old children, as it is revealed in their human figure drawings, is being traced in the present study. The question of the degree of relationship between increasing ability to differentiate between sexes, and increasing mental age is being explored. Male or female emphasis of the figures will also be determined by noting sex of the first drawn figure, sex of the larger figure, and sex of the more differentiated figure within a given level of sexual differentiation. These measures will be related to children's development of sexual differentiation.

As an introduction to the present study, literature concerning the meaning of identification, and the use of drawings in the assessment of identification and sexual differentiation will be reviewed.

A. The Concept of Identification

Since the time of Freud (1922) the concept of parental identification has been liberally used as an explanatory principle in interpreting general personality development, and sex appropriate behavior. Freud describes the process of identification in the following way: For both boys and girls, the first object is the mother, who provides both nourishment and pleasure to the child. However, at about the age of two or three, the child discovers his genital zone as a source of pleasure, and at this time the boy desires his mother and wishes to get rid of his father, who is his rival for the mother's love. The girl, on the other hand, takes her father as her love object, after she has given up her wish for a penis and substituted in its place a wish for a child from him.

The threat of castration brings about, in the boy, repression of his desire for his mother, and a strengthening of his identification with the father. Identification of the girl with her mother takes place more gradually. Her original identification with the mother, who was her first love object, is strengthened as she becomes a "little woman" in an attempt to gain her father's love.

Since the time of Freud, the concept of identification has been in a prominent position on the stage of personality theorizing, and has an important place in other psychological theories (Cave and

Rausch, 1952; Lazowick, 1955; Martin, 1954; Mowrer, 1953; Sanford, 1955; Stoke, 1950; Tolman, 1943) as well as in psychoanalysis.

Sanford (1955) suggests that a term which can be employed in so many different theories can hardly mean anything very precise, and he proposes that the term be given up, or that, "what kind" of identification be specified.

Lynn (1959) has attempted to comply with Sanford's latter suggestion, rather than throwing out the term "identification" altogether. He feels that such widespread use of the term suggests its potential utility with adequate clarification. A differentiation is made by Lynn among the concepts of sex-role preference, sex-role adoption, and sex-role identification.

Sex-role preference is defined by Lynn as the desire to adopt the behavior associated with one sex or the other, or the perception of such behavior as more desirable. It has been measured by simply asking Ss whether they have ever desired to be of the opposite sex, and by having children state their preference for objects, or pictures of objects, which are characteristic of one sex or the other (Benjamin, 1932; Brown, 1956; Fauls and Smith, 1956; Rabban, 1950).

Sex-role adoption refers to overt behavior and is the actual adoption of behavior characteristic of one sex or the other, not just the desire to adopt such behavior.

Sex-role identification refers to the actual incorporation of the role of a given sex, and to the unconscious reactions characteristic of that role. While sex-role adoption refers to overt behavior, sex-role identification refers to a more basic process characteristic

of a given sex, Lynn feels. In clarifying the distinction between the latter two concepts, he points out that a person may be identified with the opposite sex, yet adopt much of the behavior characteristic of his own sex for expediency. On the other hand, a woman who occasionally adopts aspects characteristic of the male-sex role is not necessarily identified with the male role.

Lynn holds that the early closeness of the girl to the same-sex parent gives her an initial advantage in progressing toward appropriate identification. This initial advantage, he suggests, is counterbalanced by later learning experiences in a masculine-oriented culture. The prestige and privileges afforded males but not females, and the lack of punishment for adopting aspects of the masculine role, Lynn feels, have a slow, corrosive, weakening effect on the girl's feminine identification.

Boys, it is postulated, must shift from initial identification with the mother to identification with the masculine role. However, a conventional masculine role is clearly spelled out for the boys. And the prestige and privileges accorded the male, the rewards offered for adopting the masculine role, and the punishment for not doing so, are predicted by Lynn to have a strengthening effect on the boy's masculine identification.

The concept of identification is difficult both to define and to measure. Attempts to define it have been indicated above, and attempts to measure it through the projective technique of human figure drawings will now be discussed.

B. The Application of Drawings in the Assessment of Identification and Sexual Differentiation

Historically, the use of drawings in understanding child development is of long standing. Early interest was directed primarily at the study of the mental development of the child, and Goodenough (1926) points out that this interest dates back to Cooke in 1885 and Ricci in 1887.

Techniques for modern quantitative treatment of drawings were first applied by Florence Goodenough (1926) who utilized the figure drawings of children in developing a non-verbal measure of intelligence. Interestingly, she found that drawings of a male figure presented marked sex differences of a qualitative nature. She presented a table of characteristics most often drawn by boys and girls, and found that some children included, in the male figure, characteristics more typical of those drawn by the opposite sex. Current interest in differentiation between two figures had its origins in her work.

Recent interest in drawings has shifted to their use as projective devices. Goodenough's focusing on the human figure led to Karen Machover's (1949) development of the Draw-A-Person test, a technique for evaluating personality through drawings of the human figure, the basic key to analysis being projection of the body image in its functional implication. Rather than utilizing just the male figure as in the Goodenough test, Machover used both the male and female figures, and attempted to explore the significance of differential treatment accorded the two figures.

An early assumption of Machover (1949) was that the sex of the first-drawn figure, and the relative size of the figure, might provide clues to sexual identification and sexual inversion. Machover (1949) and Schilder (1935) made explicit the hypothesis that the sex of the first drawn figure reflects the individual's sexual identification, sexual orientation, and sex-role preference.

Many studies have been carried out to investigate this hypothesis, and Brown and Tolor (1957) reviewed studies by Morris (1955), Weider and Noller (1950, 1953), Knopf and Richards (1952), Jolles (1952), and Tolor and Tolor (1955). Of the total number of children in these studies, 82% of the 1677 boys, and 83% of the 1700 girls drew like-sex figures first. Contradictory results, however, were obtained among the studies.

Morris (1955) using a sample of 25 boys and 25 girls with a median age of 13, from a seventh grade class, reported that 96% of the boys and 76% of the girls made like sex drawings first. Five years later 38 of the Ss, plus 12 new Ss were examined, and when 92% of the boys and 76% of the girls still drew their own sex first, Morris concluded that differences resulting from age were negligible.

Weider and Noller's (1950) sample was composed of younger children. One-hundred fifty-three children, ages 8-10, 73 male and 80 female, were selected from the upper, middle, and lower socio-economic classes in Louisville. Ninety-seven percent of the girls and 74% of the boys drew the figure of their own sex first, and 80% of the girls compared to 52% of the boys drew their own sex larger in size. These findings were interpreted by Weider and Noller as indicating that during latency period, "girls . . . 'identify' more with their own sex than the boys do. . . ." (p. 324)

The interpretation given by Weider and Noller is based on the writings of Machover (1953) who, in tracing the personality development of the child, states that at the age of five and six the girl draws the opposite sex first. During the latency period, though, she ". . . retains a solid and consistent identification with the female role, with considerable confidence and price in this role. . . ." (p. 89) After ages 10 and 11 ". . . there is a steady deterioration of self-esteem and efficiency. . . ." (p. 88). In adult life the female is said to express ambivalence in sex role, shifting in the sex drawn first. Machover suggests that in the case of boys, latency period is accompanied by weak sexual differentiation, whereas previously at the age of five and six the boy compares favorably with the girl in sexual maturity. At five and six the boy frequently draws his own sex first, she says, but during latency often draws the opposite sex first, which, Machover believes, demonstrates a pattern of feminine identification. Machover suggests that in our culture the latency period is more conducive to the role played by girls than by boys.

Continuing their work, Weider and Noller (1953) confirmed their previous findings, using a larger sample of 438 Ss, 210 male and 228 female third grade children in the Louisville public schools. Ninety-four per cent of the girls and 70% of the boys drew their own sex first, and 69% of the girls compared to 38% of the boys drew their own sex larger.

Contrary results to those of Weider and Noller were reported by Knopf and Richards (1952) who studied very small samples of 10 male and 10 female Ss at age level six and age level eight, from a public school in Illinois. At both age levels 80% of the boys drew

their own sex first, while at age six, 50% of the girls drew female figures first compared to 70% at the age of eight years. Knopf and Richards interpreted their results as suggesting girls are generally more ambivalent in their sex-role preference than boys, although this tendency was thought to decrease from age six to eight. Their small sample size, however, suggests that their results may not be highly reliable.

Of a sample of 1282 male school children between the ages of five and 12, enrolled in public schools in Illinois, Jolles (1952) found 85% drew the male figure first, while 80% of 1278 female Ss drew the female figure first. Although at all ages the same-sex drawings predominated both for boys and girls, younger males tended to draw the opposite sex figure more frequently than did the older boys, whereas girls at the 11- and 12-year-old level displayed a preference for drawing the opposite sex more frequently than did the boys at the same age.

Tolor and Tolor (1955) found results consistent with those of Weider and Noller. Eighty-two per cent of 67 boys in a Brooklyn public school drew figures of the same sex first, compared to 91% of the 69 girls. Age ranged from nine to 12 for the sample.

Further studies with children were carried out by Butler and Marcuse (1959), and Bieliauskas (1960). Butler and Marcuse (1959) obtained drawings from 810 boys and 734 girls, ages five through 18. At the younger years of five through seven, boys showed a greater tendency than at later ages to draw the opposite sex figure first. At year eight and after, the proportion of boys drawing their own sex figure first was found to have increased, and was greater than for girls.

Bieliauskas (1960), with a sample of 1000 children, ages four through 14, also found that it was at the younger ages boys showed the least tendency to draw their own sex figure first. The boys' tendency to draw the male figure first seemed to show a continuous increase with the advancement in age, Bieliauskas reports, while the girls' developmental line showed some slight instability.

Although the results from the studies are somewhat contradictory, it does appear that both boys and girls do prefer to draw a person of their own sex first. This preference seems to be less strong for boys at the younger than at the older year levels.

Findings concerning sex of the larger figure are reported only by Weider and Noller (1950 and 1953). From their results, the tendency to draw one's own sex figure larger appears to be less strong than the tendency to draw one's own sex figure first, for both boys and girls. Boys appear to show less tendency than girls to draw their own sex figure larger.

A newer approach to the study of differential treatment given to figures is concerned with the differentiation, or lack of it, between the male and female figures drawn, and the extent to which both figures are adequate representations of the respective sexes. Machover (1949) has emphasized the differential treatment of male and female figures by boys and girls throughout the latency years, and points out that "the attitudes of the subject toward the sexes is . . . the basic determinant in the differential treatment" (p. 102). She also states, "the particular type of treatment . . . accorded the pair of figures drawn by a subject may be associated with the degree of identification with the male and female figure that is characteristic of the subject" (p. 101).

An early attempt to assess developmental aspects by pairs of drawings was made by Modell (1951) who studied changes in the D-A-P's of 28 hospitalized regressed psychotics as they improved in adjustment. Their consecutive pairs of drawings were rated using a scale devised by him for "body image maturation" and "sexual maturation." As patients recovered from regressed states, the "sexual maturation" and "body image maturation" of their D-A-P's improved significantly. Modell's "sexual maturation" score was based on the number of characteristics which differentiate between the male and female figures. He suggested that the loss of sexual differentiation of the body image "is related to an almost complete return to a pregenital stage of development" (p. 595).

Fisher and Fisher (1952) developed a four-point scale for rating the femininity of the female figure drawn by 76 female psychiatric patients. The score on their scale was related to the sexual adjustment of these patients,

Swensen (1955) devised a scale for assessing sexual differentiation, with pairs of drawings. This scale, developed in order to investigate the relationship between sexual differentiation on the D-A-P and various behavioral characteristics, consists of nine points, which are as follows:

1. Little or no sexual differentiation
   There is little or no difference between the two figures, and what difference exists between them does not particularly suggest sexual differentiation.

3. Poor sexual differentiation
   Longer hair on the female than on the male. There may be a slight suggestion of difference in body contour and/or clothing.

5. Fair sexual differentiation

   The female definitely has longer hair then the male. The female clearly has different body contour, with either rounded hips or breasts, or both present. There may be a suggestion of difference in the clothing of the pair.

7. Good sexual differentiation

   The female has longer hair than the male. The female has rounded body contour, the male has angular contour. Breasts and/or rounded hips present. There is a clear difference in clothing, with the female wearing feminine apparel, although the apparel may be copied after that of the male, e.g. slacks. There may be the suggestion of differentiation in minor details, such as eyelashes or fuller lips on the female.

9. Excellent sexual differentiation

   Female hair is longer than male hair, with definite feminine hair styling in the female. The male body has angular contour, the female body has rounded contour with both breasts and rounded hips present. The male wearing clothing that is definitely masculine, the female wearing clothing that is clearly feminine. Minor details, such as eyes, mouth, earrings, bracelets, etc., clearly appropriate for the sex of the figure on which they are drawn. (Swenson, 1955, p. 38)

Points 2, 4, 6, and 8, are to be used for rating drawings that appear to fall midway between those listed above.

Drawings of the patients of two Veterans Administration Mental Hygiene Clinics were used in developing this scale, and significant discriminations between the scores of an adult out-patient population and a psychiatric in-patient group were obtained. The scoring reliability reported by Swensen is .84 for two independent judges. This scale has been used by Sipprelle and Swensen (1956), with college students in psychotherapy; by Cutter (1956) with sexual psychopaths, to distinguish between persons with general deficits and

those with specific sexual disturbances, and by Murphy (1957) with male and female job-applicants.

Swensen and Newton (1955) applied the Swensen scale to the study of the development of sexual differentiation in children. Sets of drawings of 163 children (grades one to eight) were rated for sexual differentiation using the scale, and the sex of the first drawn figure was also noted. Swensen found sexual differentiation to improve in a negatively accelerated curve, as a function of age. At the younger ages, girls tended to differentiate between the sexes significantly better than boys, but boys' sexual differentiation caught up with that of the girls at about age 13, and beyond this age, there was no significant difference between the sexual differentiation of boys and girls. Although Swensen found a fairly regular increase in sexual differentiation with increased age, there was no comparable increase found in per cent drawing their own sex first.

A modification of Swensen's scale was used by Limuaco (1959) in a cross-cultural study comparing American and Filipino children by means of the D-A-P test. The scale was reduced from nine to five points, so as to be more easily applied to the simple, less complicated drawings of children. Filipino children were found to show a greater degree of sexual differentiation than American children. The major role of the mother in the American home and the diminishing role of the father, especially as a disciplinarian, the permissiveness of American parents concerning their childrens' choice of a sex role, and the overlapping of masculine and feminine roles in the American culture, are discussed as factors influencing the American children's lower sexual differentiation scores.

Using Goodenough scale scores as a measure of identification, Limuaco found Filipino boys to identify more with the male figure

than American boys. American and Filipino girls showed no significant difference in degree of identification with the female figure. The dominant role of the mother in rearing children in the American family, Limuaco suggests, facilitates the identification of the girl, whereas it results in confusion of the boy's sex identity.

In attempting to apply the Swensen scale to drawings of nine- and ten-year-old Israeli and American children, Haworth and Rabin[1] encountered difficulty. Although many of the drawings indicated clear awareness of sex differences, the children were not emphasizing the characteristics necessary for being classified at advanced stages of sexual differentiation. Also, there seemed to be a need for a stage at which one figure was portrayed with more sex appropriate characteristics than was the other, and this was not provided for by the Swensen scale.

A modification of the Swensen scale was developed by Haworth,[2] in an effort to provide a measure more appropriate for use with children. The four descriptive levels of the scale are:

1. Figures nearly the same, no apparent sex.
2. Similar body configuration and facial features, minimal differentiation.
3. One figure more clearly differentiated as to sex.
4. Each figure well differentiated as to sex.

This scale will be used in assessing the degree of sexual differentiation displayed by children in their human figure drawings, and normative data for the scale will be provided.

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[1]Unpublished data.

[2]Mary R. Haworth, "Sexual Differentiation Scale For the Draw-A-Person Test" (in preparation for publication).

An important question in the use of the scale is the effect of drawing skill and intelligence on the ability to differentiate the figures. Machover (1949, 1953) points out the wide discrepancy frequently found in the drawing of the male and female figures, and interprets this as indicating that skill in drawing is unrelated to sexual differentiation. Swensen (1955) found that sexual differentiation did not correlate significantly with another similar visual-motor test, the Bender-Gestalt. Murphy (1957) found no significant sex differences in Goodenough scores, which were used as measures of drawing ability, although the males and females differed significantly on the Swensen scale of sexual differentiation. Rabin and Limuaco (1959) also found that differences with respect to degree of sexual differentiation could not be accounted for by differences in Goodenough scores, which were used as a measure of drawing ability. Elimination of the factor of drawing ability did not affect the significant differences found between degree of sexual differentiation shown by American and Filipino children.

There are eleven items used in scoring the male figure in the present scale, and only four of these are in any way similar to Goodenough items, so it does not seem likely that a high correspondence would be found between level of differentiation and mental ability, even when using Goodenough scores as criterion. In the present study, the relationship between mental age and degree of sexual differentiation is being investigated through the use of an external measure of mental ability. Mental ages, obtained from scores on a group intelligence test, are being correlated with level of differentiation, to determine the degree of relationship.

Within each of the four levels of differentiation, there may be greater emphasis upon one figure than the other, and this emphasis

within levels will be of interest. The sex of the more emphasized figure within a level, the sex of the first drawn figure, and the sex of the larger figure will be given consideration, and possible interpretations of the findings will be discussed.

II. METHOD

In a preliminary study, drawings of 441 first through sixth grade normal school children were obtained from the Psychological Clinic at Michigan State University. These drawings had been collected from public school groups in previous studies using the D-A-P as a group test. The original sources of the drawings were six schools located in the communities of East Lansing, Lansing, Hickory Corners, and St. Johns. Both the grades sampled and the test administrator differed at the various schools. No information, such as I.Q., or social-economic level, was available for any of the children.

These drawings were scored for level of sexual differentiation, using Haworth's Sexual Differentiation Scale for the Draw-A-Person Test. The findings suggested that sexual differentiation did increase with age. Fluctuations in the growth curve occurred, however, and it was felt that these fluctuations might be due to extraneous factors such as differences in the socio-economic backgrounds of the children from the various localities, or differences in the personality of the test administrator.

It was decided that in establishing norms for the scale being studied, a sample would be drawn from one community and tests administered to all children by the same examiner. In selecting a community, the need for obtaining I.Q. scores of the children, and information concerning the occupation of the children's parents, was kept in mind. Owosso, a community of approximately 18,000, located in lower Michigan, was chosen for the normative study.

A. Subjects

Sets of figure drawings were collected from 326 first through sixth grade children from four public schools in Owosso, Michigan. One first, third, and fifth grade class was selected from both the Bryant and the Emerson schools, and one class of second, fourth, and sixth graders were selected from both the Central and the Washington schools. At each of these schools, there were two or more sections of children at each grade level. The selection of the section to be visited was made by the school principal. Basis for selection is unknown, and no attempt to control for this factor was made, other than that an "average" class at each grade level was requested.

TABLE I. Subjects by School and Grade

School and Grade	Number of Boys	Number of Girls	Total
Bryant, 1st Grade	10	13	23
Emerson, 1st Grade	13	13	26
Central, 2nd Grade	15	11	26
Washington, 2nd Grade	15	12	27
Bryant, 3rd Grade	11	9	20
Emerson, 3rd Grade	12	18	30
Central, 4th Grade	15	17	32
Washington, 4th Grade	16	16	32
Bryant, 5th Grade	6	23	29
Emerson, 5th Grade	18	12	30
Central, 6th Grade	11	13	24
Washington, 6th Grade	15	12	27
Total	157	169	326

B. Data Collected Concerning the Subjects

Date of birth and father's occupation for each child were obtained from the school records, and I.Q. scores from a group administered test, the California Test of Mental Maturity, were obtained for children in the third through sixth grades. Information concerning the amount of art instruction each group received was provided by the classroom teachers.

1. Age

Date of birth for each child was obtained, and the age of each child was found, to the nearest month. The number of children at each age level is indicated in Table II.

TABLE II. Number of Children at Each Age

Age in Years and Months	Number of Boys	Number of Girls	Total
5-6 to 6-5	2	4	6
6-6 to 7-5	22	28	50
7-6 to 8-5	29	22	51
8-6 to 9-5	25	26	51
9-6 to 10-5	29	35	64
10-6 to 11-5	20	29	49
11-6 to 12-5	24	23	47
12-6 to 13-5	6	2	8
Total	157	169	326

Because of the small number of children at years six and thirteen, only the drawings of seven through twelve year olds are being included in the present study. This lowers the total to 312, the number of boys to 149, and the number of girls to 163.

There are approximately 50 children at each of the age levels being studied, with the distribution of boys and girls being fairly even.

2. Parental Occupation

The occupations of the children's fathers were obtained from the school records and the occupations were classified, using the groupings of the U. S. Census of Population for 1950. Because parental occupations for 41% of the six grade children either were not reported in the school records, or were not reported in sufficient detail to be classified, information concerning parental occupations of 6th grade children could not be used. The proportions for grades one through five, the proportions for these grades combined, and the national norms, are given in Table III.

In sampling, the four schools were paired, with two schools being sampled from at each grade level. The schools were paired in the way that they were, with the Bryant and Emerson schools being combined, and Central and Washington schools being combined, in an attempt to maintain a similar distribution of occupational groupings at each grade level. This attempt was fairly successful.

In comparison to the national norms of 1950, the three top levels of the present sample of parental occupations correspond closely. The major discrepancy between the present sample and the national norms is a shift from rural to industrial, which may reflect a present trend in the distribution of occupations in the country during the decade.

TABLE III. Occupational Groupings

	Grades						National
	1st	2nd	3rd	4th	5th	Combined	Norms[1] 1950
Professional, technical, and kindred workers	.08	.11	.08	.05	.03	.06	.073
Managers, officials, and proprietors, except farm	.10	.09	.06	.09	.08	.09	.107
Clerical and kindred workers, and sales workers	.20	.08	.16	.19	.16	.16	.128
Craftsmen, foremen, operatives, and kindred workers	.52	.58	.54	.46	.58	.53	.387
Private household workers and service workers	.02	.04	.06	.05	.01	.04	.061
Farmers and farm managers, laborers, and foremen of farms	.00	.02	.00	.00	.03	.01	.151
Laborers, except farm and mine	.04	.04	.00	.00	.03	.02	.081
Occupation not reported	.04	.04	.10	.16	.08	.09	.011
Total	1.00	1.00	1.00	1.00	1.00	1.00	1.00

[1]U. S. Census of Population, 1950, U. S. Department of Commerce Bureau of the Census, Special Report P. E. No. IC, Occupation by Industry, p. IC-8.

3. I.Q. Scores

Shortly before the collection of the present data, the California Test of Mental Maturity had been administered to the third through sixth grade children attending all four schools. Scores from this group administered intelligence test were available for 182 of the 211 children between the ages of nine through twelve. Mean I.Q. for the group of 182 children was 108.46, with a standard deviation of 15.7. Table IV indicates the mean I.Q. for the children at each of four age levels, as well as the mean score for the total group.

TABLE IV. Mean I.Q. Scores for Nine- Through Twelve-Year-Olds

Age	Number	Mean I.Q.
9 years	41	107.58
10 years	56	111.26
11 years	47	105.36
12 years	38	109.10
Total	182	108.46
		SD = 15.7

4. Art Instruction

Weekly time spent in art activities varies from one hour per week to two-and-a-half hours per week in the classrooms of the children in this study. All of the classrooms have a half hour of supervision every three weeks by the visiting art supervisor, who rotates among the various schools and grades. The classroom teachers supplement this art instruction with varied activities.

C. Test Administration

The Draw-A-Person test was administered to each of the twelve sections of children by the author. Sheets of plain white paper ($8\frac{1}{2}$" x 11") and pencils were distributed, and instructions were given to "Draw a person." Further directions to draw the entire person, and to draw any type of person they wished, were given to the groups, if more clarification was needed. After the members of a group had completed one drawing, and had labeled it number one, the drawings were collected. In the early grades, the children were also asked to indicate on their first drawing whether the figure was a boy or girl, since it was not always possible to tell from the drawing itself. Then, second sheets of paper were distributed, and the groups were asked to draw a girl if they had previously drawn a boy, or to draw a boy if they had drawn a girl. These drawings were collected.

D. The Scale Being Used and Scoring of the Drawings

After the Draw-A-Person test had been administered, the sets of drawings were scored, using Haworth's Sexual Differentiation Scale for the Draw-A-Person Test, as an index of sexual differentiation. This scale consists of four descriptive levels, which are:

1. Figures nearly the same, no apparent sex.
2. Similar body configuration and facial features, minimal differentiation.
3. One figure more clearly differentiated as to sex.
4. Each figure well differentiated as to sex.

Rather than scoring by use of the descriptive categories, types of items to be scored and criteria to be met at each level of differentiation were established empirically. Haworth found that an item by item tabulation revealed which items seemed to appear earlier in the developmental process and which items characterized the drawings which had been globally ranked at the highest level. For example, guns, pipes and pockets were found to appear on otherwise fairly primitive male figures, while mustaches, pocket handkerchiefs, and coat lapels were rarely found until both figures were drawn in clearly sex appropriate terms. This provided a basis for classifying the items into types. The type of items, and number of items on each figure determines the score for the figure, and the pair of scores for the two drawings establishes the level of differentiation. See TABLE A in the Appendix.

All pairs of drawings were scored for level of differentiation in the way described. In addition, sex of the first drawn figure, and sex of the larger figure were recorded for all sets of drawings.

E. Reliability of the Scale

To determine the scorer reliability for the scale being used, 100 pairs of drawings from the present sample were scored for level of differentiation by two independent judges.[1] These drawings were selected by choosing each third set from the total number of sets. The drawings were arranged by grades, so that in the sample drawn, all grades were represented in the appropriate proportion. Eighty-eight of the 100 pairs of drawings were classified as being in the same level by both independent judges, resulting in agreement of 88%.

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[1]Dr. Mary Haworth in addition to the author.

III. RESULTS

Results concerning the following aspects of the drawings will be discussed: (A) level of sexual differentiation, (B) correlation of mental age with level of sexual differentiation, and (C) male or female emphasis of the figures, as determined by sex of the first drawn figure, sex of the larger figure, and sex of the more differentiated figure within a given level of differentiation.

A. Levels of Differentiation

Each set of drawings was scored for level of differentiation, and the mean level of differentiation for each age was found, for boys, for girls, and for the total group. Graphically, these means at each of the age levels are pictured in FIGURE I.

From the graph it can be seen that sexual differentiation improves as a function of age. Slight but consistent sex differences do occur, with girls tending to differentiate between the sexes better, except at age 11.

Graphs showing the proportions of children, by age, scoring at each of the four levels of sexual differentiation, are pictured in FIGURE II.

It can be seen that, at seven years, considering the total group, the majority of the children are at level two, with some being at both levels one and three. Level three gains, and is almost equal to level two, at age eight. Level four is first represented at age nine; the largest proportion of the children, however, are still at the second level.

FIGURE I. Mean Level of Differentiation

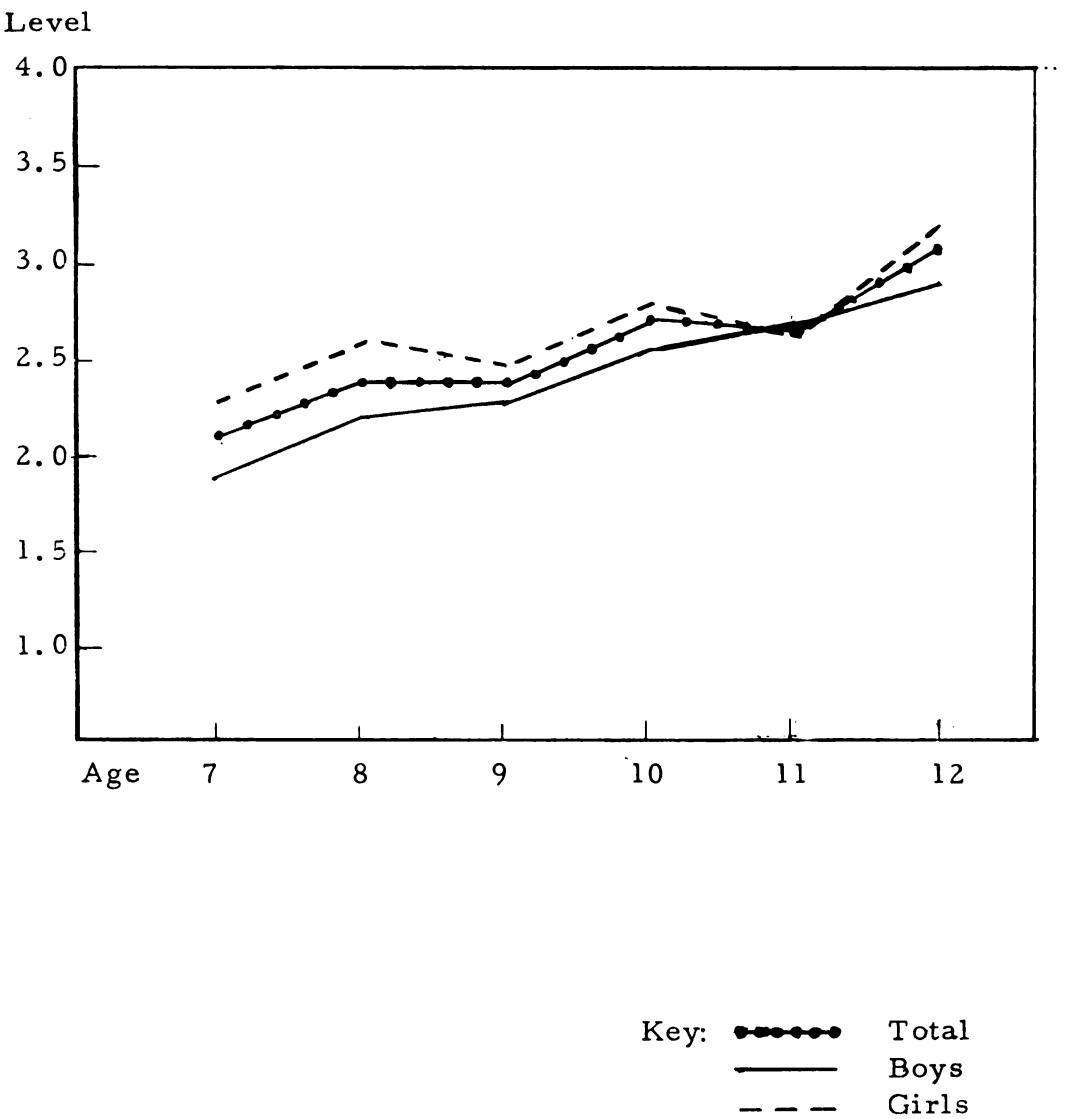


FIGURE II. Proportion of Children at Each of the Four Levels of Differentiation, by Age.

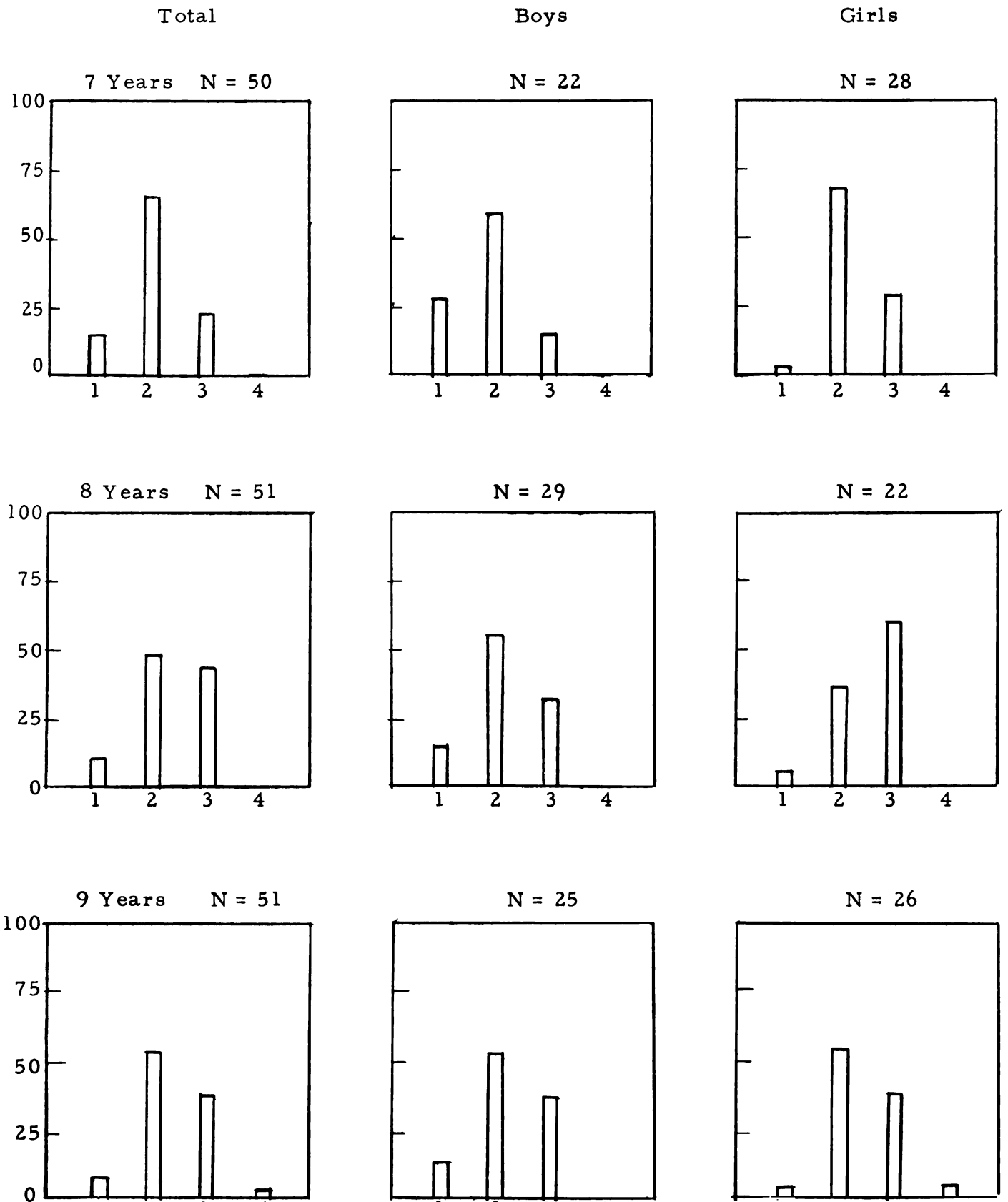
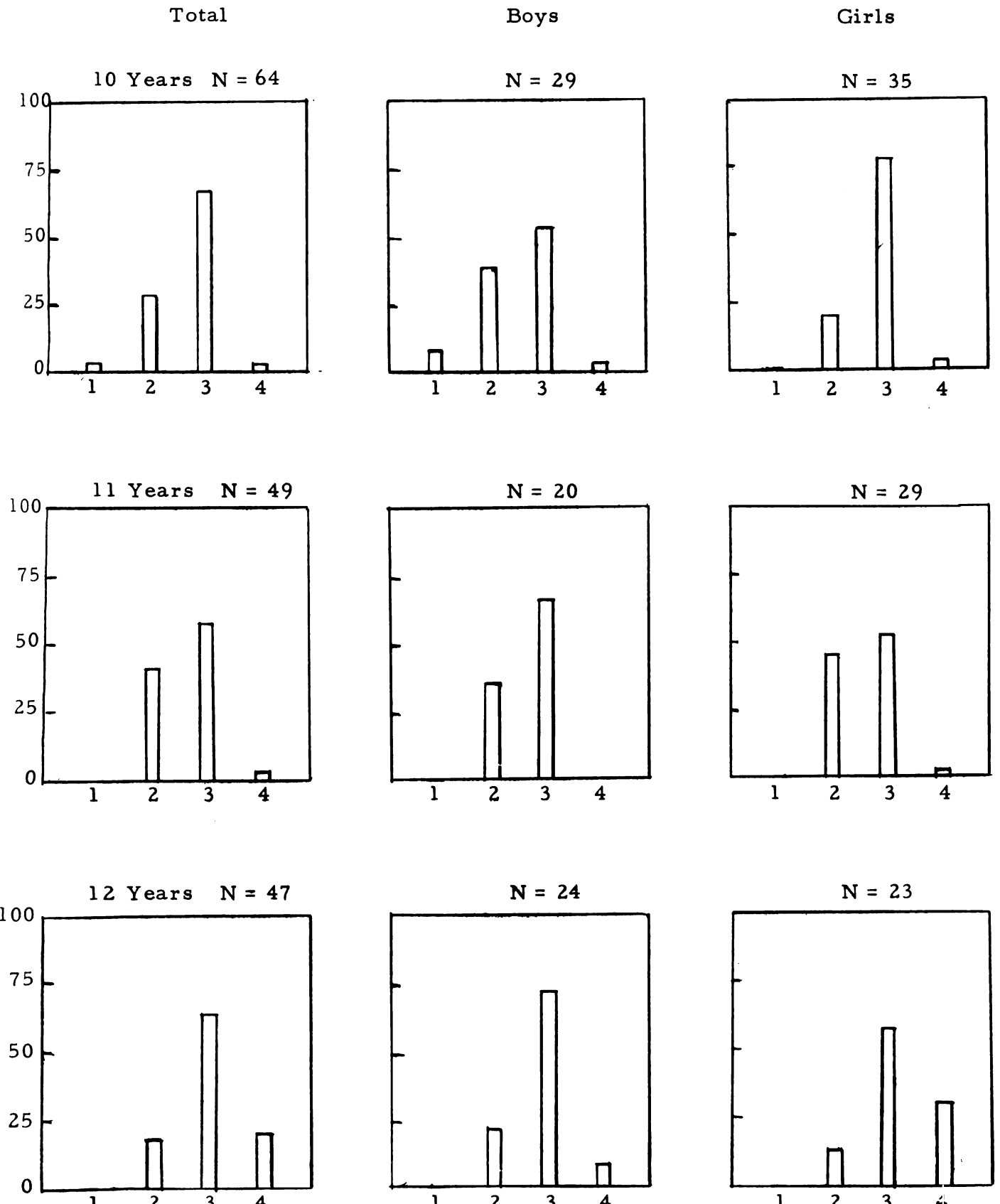


FIGURE II, Continued



Level three is clearly the most characteristic at age ten, and continues to be so through the years eleven and twelve. At age eleven, level one drops out. At twelve years, level four is gaining, but level two is still represented, and the largest proportion of the children continue to be at level three.

A slight sex difference can be seen, as to proportions at the various levels, with the girls tending to be slightly more advanced than the boys.

B. Relationship Between Level of Differentiation and Mental Age

It can be seen from the growth curves that as children grow older, they tend to show increasing differentiation of their figure drawings. An important question is the degree of relationship between the level of sexual differentiation and intelligence. Does the advance in ability to differentiate the figures merely reflect increasing mental age? To investigate this, I. Q. scores for 182 nine- through 12-year-olds were available from the California Test of Mental Maturity.

In order to hold constant chronological age, bi-serial correlations between I. Q. scores and level of differentiation were computed at each of the four age levels. Level of differentiation was dichotomized between levels two and three, with simpler drawings of levels one and two being combined, and the more advanced drawings of levels three and four being combined. The correlations obtained are shown in Table V.

With chronological age held constant, the correlations between intelligence and level of differentiation are low and non-significant.

TABLE V. Degree of Relationship Between Level of Differentiation and I.Q. Score, by Ages

Age	N	Bi-serial Correlation	p
9	41	.06	N.S.
10	56	.20	N.S.
11	47	.08	N.S.
12	38	.14	N.S.
Total:	182		

To obtain a second estimate of the degree of relationship between level of differentiation and mental age, the I.Q. scores of the 182 nine- through 12-year-olds were converted to mental ages. A bi-serial correlation was computed between these mental age scores, which spanned eleven mental years, and level of differentiation. Level of differentiation was dichotomized, with levels one and two being combined, and levels three and four being combined. The bi-serial correlation obtained between mental age and level of differentiation was .261, which is significant at the .003 level.

A bi-serial correlation between chronological age in months, and level of sexual differentiation was also computed. Here, the span of chronological age was four years, in contrast to the span of eleven years of mental age in the correlation above. For the correlation, level of differentiation was dichotomized, as in the previous case. The bi-serial correlation obtained was .271, which is significant at the .002 level.

The restriction in age range was thought to perhaps be lowering the correlation obtained between chronological age and level of differentiation. Information concerning the chronological age, although not the mental age, of seven and eight year old children was available, and

in an effort to lessen the restriction of range in the correlation between chronological age and level, a further bi-serial correlation was computed, utilizing all of the children in the study, ages seven through twelve. Again, level of differentiation was dichotomized, between levels two and three. This bi-serial correlation between chronological age and level of differentiation, when utilizing more subjects in an effort to lessen restriction in range, was .452, in contrast to the correlation of only .261 obtained between mental age and level of differentiation.

C. Male or Female Emphasis of the Figures

Within each of the four levels of differentiation it is possible that one of the figures will have a greater number of sex appropriate items than the other, and thus one figure may be more emphasized within any given level. At levels one and two, both figures are still relatively immature, and the possible discrepancy between the two figures is not as marked as at the later levels. At level three, where one figure is usually more clearly differentiated, several points difference may exist between the figures. At level four, although both figures are well differentiated as to sex, it is still possible for figures to differ in number of items present. However, it is particularly at level three where a marked discrepancy seems to occur. In view of this, and also because of the small number of drawings available at level four, it is level three which will be given particular attention in the present study.

The drawings of 66 boys, and 86 girls could be classified as being at the third level of sexual differentiation. At this level, one's own sex figure may be more emphasized, one's opposite sex figure may be more emphasized, or the figures may show equal emphasis.

All drawings at level three were scored as to which of these possibilities had occurred, with a figure considered to show greater emphasis if it received a larger number of points than the other figure. In a few cases, the figures received an equal number of points, but a "D item," the most advanced type, was among the points on one of the figures, whereas the other figure was without the more advanced type of item. Although both figures had the same number of points, the figure with the more advanced item was considered more emphasized.

The findings concerning treatment of figures at level three, and the proportions of children drawing their own sex figure first, and larger, will be presented. Relationships between these measures will be discussed.

1. Treatment of Figures at Level Three

The proportions of the 66 boys and 86 girls emphasizing their own sex figure, emphasizing the opposite sex figure, or emphasizing the figures equally at level three, are shown in TABLES VI and VII.

TABLE VI. Treatment of Figures at Level Three (Boys)

Age	N	Own Sex Emphasis	Equal Emphasis	Opposite Sex Emphasis
7	3	67%	33%	0%
8	9	45	33	22
9	9	32	11	57
10	15	13	67	20
11	13	39	15	46
12	17	53	6	41
Total	66	38%	27%	35%

TABLE VII. Treatment of Figures at Level Three (Girls)

Age	N	Own Sex Emphasis	Equal Emphasis	Opposite Sex Emphasis
7	8	75%	12.5%	12.5%
8	13	46	31	23
9	10	70	20	10
10	27	67	15	18
11	15	67	13	20
12	13	92	0	8
Total	86	69%	15%	16%

Only slightly over one-third of the boys emphasized their own sex figure, whereas two-thirds of the girls emphasized their own sex figure. The boys showed a greater tendency than the girls both to emphasize the opposite sex figure, which they did about as frequently as emphasizing their own sex figure, and to treat the figures equally.

These differences between boys and girls are significant, as indicated in TABLE VIII (Age levels were combined in computing the chi square value. This was possible, since no significant relationship was found between age and treatment of figures at level three, for either boys or girls.)

TABLE VIII. Comparison Between Boys and Girls as to Their Treatment of Figures at Level Three

	Boys	Girls	X^2	p
Own Sex Emphasis	25	59		
Equal Emphasis	18	13		
Opposite Sex Emphasis	23	14	14.4	.001

2. Proportions Drawing Their Own Sex Figure First

For each set of drawings, the sex of the first drawn figure was noted. TABLE IX indicates the proportions of seven- through twelve-year old boys and girls drawing their own sex figure first.

TABLE IX. Proportion of Boys and Girls Drawing Their Own Sex Figure First, At Each Age

Age	Boys N	Boys Own-Sex First	Girls N	Girls Own-Sex First
7	22	45%	28	68%
8	29	69	22	86
9	25	92	26	65
10	29	90	35	89
11	20	85	29	76
12	24	87.5	23	78
Total	149	79%	163	77%

Both boys and girls tend to draw their own sex figure first, and the overall tendency seems to be of similar strength for both. Fluctuation at the various age levels is slightly greater for the boys. At the younger ages, boys seem to show less tendency to draw their own sex figure first then at the older age levels. A significant difference ($p = .001$) does exist in the proportions of boys drawing their own sex figure first at the varying age levels. (See Table B in the Appendix.) This is not so with the girls, who show less fluctuation.

3. Proportions Drawing Their Own Sex Figure Larger

The sex of the larger figure, as well as of the first drawn figure, was recorded for each set of drawings. TABLE X indicates the proportions of boys and girls drawing their own sex figure larger. Two boys and nine girls drew figures of equal size, and the drawings of these eleven children have been omitted from these and all later tables.

TABLE X. Proportion of Boys and Girls Drawing Their Own Sex Figure Larger, At Each Age

Age	Boys N	Boys Own-Sex Larger	Girls N	Girls Own-Sex Larger
7	22	59%	28	64%
8	29	55	21	71
9	25	60	24	62
10	29	76	33	79
11	20	50	28	75
12	22	68	20	60
Total	147	62	154	70

Both boys and girls tend to draw their own sex figure larger, with the tendency being slightly stronger in the case of the girls. The proportions of children drawing their own sex figure larger are less than the proportions drawing their own sex figure first. Fluctuations at the various age levels are not significant for either boys or girls.

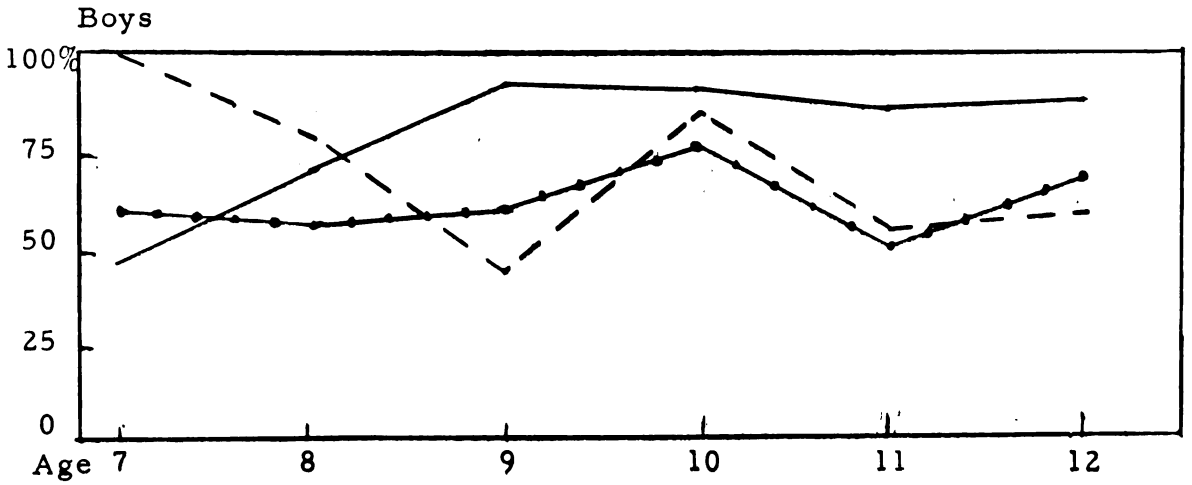
4. Relationship Between the Measures

In studying the relationship between the three measures, emphasis at level three, sex drawn first, and sex drawn larger, it was decided, for ease of presentation and statistical analysis, to combine equal emphasis of figures at level three with emphasis upon one's own sex figure, in order that there would be only two, rather than three groupings. Clinically, emphasis upon the opposite sex figure would seem to be a more deviant response than emphasizing one's own sex figure, or emphasizing the figures equally, and therefore, the dichotomy of emphasis upon the opposite sex figure vs. emphasis of one's own sex figure (or equal emphasis) was utilized. Sixty-five per cent of the boys and eighty-five per cent of the girls emphasized their own sex figure, or emphasized the figures equally. Thirty-five per cent of the boys and sixteen per cent of the girls emphasized the opposite sex figure.

The relationship between sex of the more (or equally) emphasized figure at level three, sex of the first drawn figure, and sex of the larger figure can be seen in Figures III and IV. It should be noted that at age seven, there are only three boys whose drawings are at level three, so the results indicating that 100% of seven-year-old boys show own sex (or equal) emphasis, is misleading.

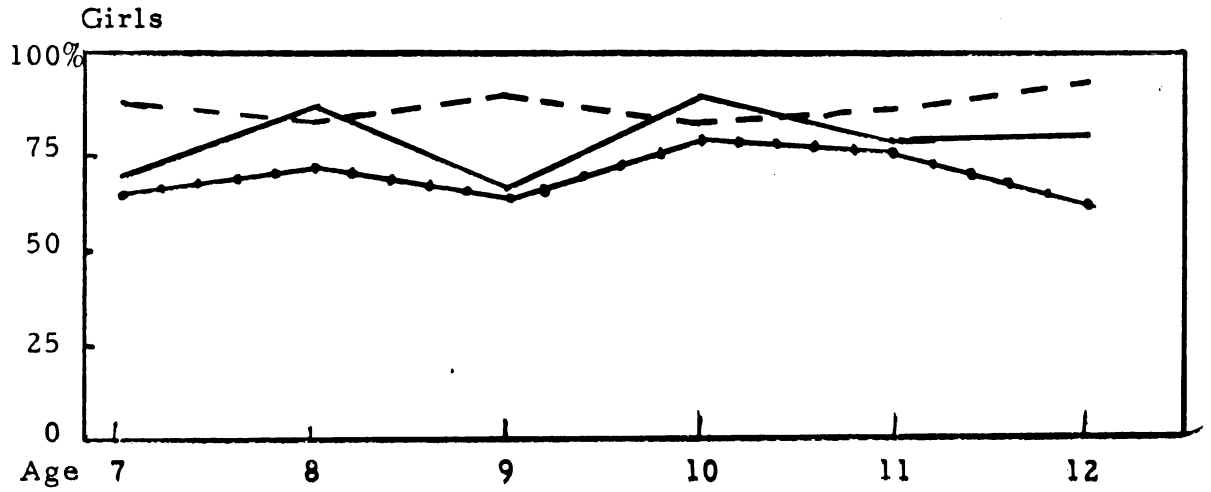
For both boys and girls, analysis by chi square indicates that a significant relationship does exist between sex of the first drawn figure, and sex of the larger figure (See TABLES C and D in the Appendix), with the degree of this relationship, as estimated by phi coefficients, being .26 for boys, and .30 for girls. No significant relationship was found between sex of the more (or equally) emphasized figure at level three and sex of the first drawn figure, or between

FIGURE III. Sex of the More (or Equally) Emphasized Figure at Level Three, Sex of the First Drawn Figure, and Sex of the Larger Figure



Key: (N=66) — — — Own Sex (or equal) Emphasis
(N=149) ——— Own Sex Figure First
(N=147) ●●●●● Own Sex Figure Larger

FIGURE IV.



Key: (N=86) — — — Own Sex (or Equal) Emphasis
(N=163) ——— Own Sex Figure First
(N=154) ●●●●● Own Sex Figure Larger

sex of the more (or equally) emphasized figure at level three and sex of the larger figure, for either boys or girls. In the latter tests involving treatment of the figure at level three, the number of cases available was, of course, smaller than the number available for the tests of independence between sex of the first drawn figure and sex of the larger figure.

5. Combinations of the Measures, Sex of the Larger Figure, Sex of the First Drawn Figure, and Sex of the More (or Equally) Emphasized Figure at Level Three

Boys and girls were found to be highly similar both in the proportions drawing their own sex figure larger, and in the proportions drawing their own sex figure first. In combinations of these two measures, they are also closely alike, as shown in TABLE XI.[1]

TABLE XI. Patterns Between Sex of the Larger Figure, and Sex of the First Drawn Figure

	Boys N = 147	Girls N = 154
Own Larger, Own First	55%	60%
Own Larger, Opposite First	11	10
Opposite Larger, Own First	20	17
Opposite Larger, Opposite First	14	13

The majority of both boys and girls draw their own sex figure first and larger. Slightly over one-tenth draw the opposite sex figure first and larger.

[1]The eleven children drawing figures of equal size are not included in the table.

Combinations between sex of the larger figure and sex of the more emphasized figure at level three are shown in TABLE XII.[1]

TABLE XII. Patterns Between Sex of the Larger Figure, and Treatment of Figures at Level Three

	Boys N = 64	Girls N = 83
Own Larger, Own Emphasized (or Equal Emphasis)	45%	59%
Own Larger, Opposite Emphasized	17	12
Opposite Larger, Own Emphasized (or Equal Emphasis)	22	23
Opposite Larger, Opposite Emphasized	16	6

Approximately half of both the girls and boys drew their own sex figure both larger and more emphasized, with girls tending to do so to a somewhat greater extent than boys. A small proportion of the girls drew the opposite sex figure both larger and more emphasized, indicating that this, for girls, is a rarely occurring response. For boys, this response occurred more frequently.

Combinations between sex of the first drawn figure and sex of the more emphasized figure at level three are shown in Table XIII.[2]

[1]Five children whose drawings were at level three drew figures of equal size, and these five cases are not included in the table.

[2]As in the previous table, the five children whose drawings were at level three, but who had drawn figures equal in size, are not included.

TABLE XIII. Patterns Between Sex of the First Drawn Figure, and Treatment of Figures at Level Three

	Boys N = 64	Girls N = 83
Own First, Own Emphasized (or Equal Emphasis)	55%	71%
Own First, Opposite Emphasized	25	11
Opposite First, Own Emphasized (or Equal Emphasis)	12	11
Opposite First, Opposite Emphasized	8	7

Over half of both the boys and girls draw their own sex figure both first and more emphasized, with the tendency being stronger in the case of girls. For both boys and girls, drawing the opposite sex figure both first and more emphasized, appears to occur rarely.

Slightly over half of the boys draw their own sex figure first and larger, and the same proportion of boys draw their own sex figure first and more (or equally) emphasized at level three. These are the most characteristic combinations for boys.

A large proportion of girls, 71%, draw their own sex figure first, and more (or equally) emphasized at level three; for girls, this is the more characteristic combination.

It appears to be unusual for either boys or girls to draw the opposite sex figure both first and more emphasized. It is also a rarely occurring event for girls to draw the opposite sex figure both larger and more emphasized.

Combinations of the three measures are shown in Table XIV.[1]

TABLE XIV. Patterns Among Treatment of Figures at Level Three, Sex of the First Drawn Figure, and Sex of the Larger Figure

	Boys N = 64	Girls N = 83
Own (or Equal) Emphasis, Own First, Own Larger	39%	53%
Own (or Equal) Emphasis, Own First, Opposite Larger	16	18
Own (or Equal) Emphasis, Opposite First, Own Larger	6	6
Own (or Equal) Emphasis, Opposite First, Opposite Larger	6	5
Opposite Emphasis, Own First, Own Larger	17	8
Opposite Emphasis, Own First, Opposite Larger	8	2
Opposite Emphasis, Opposite First, Own Larger	0	4
Opposite Emphasis, Opposite First, Opposite Larger	8	4

The most characteristic grouping for both boys and girls is own (or equal) emphasis, own first, and own larger. Girls, more than boys, group in this way.

Second, in frequency for girls, is the grouping own (or equal) emphasis, own first, and opposite larger. And third in frequency

[1]The five children at level three drawing figures equal in size are not included.

is the grouping, opposite emphasis, own first, and own larger. For boys, the second and third groupings of girls occur about equally in frequency.

Seventy-one per cent of the girls and fifty-five per cent of the boys are included within the two classifications of own (or equal) emphasis, own first, own larger, and own (or equal) emphasis, own first, opposite larger.

IV. DISCUSSION

The present study provides normative data concerning the sexual differentiation of seven- through twelve-year-old children, as measured by Haworth's Secual Differentiation Scale for the D-A-P test. Sexual differentiation appears to increase with age, and the growth curve for both boys and girls progresses fairly evenly. Girls tend to differentiate slightly, but consistently, better than boys, except at age eleven. This trend seems to be in agreement with the previous findings of Swensen (1955) who reports that girls differentiate between the sexes significantly better than boys, through about age twelve.

The fairly even progression, and similarity between the growth curves of the boys and girls, suggests there may be a gradual increase in ability of boys and girls to differentiate between the sexes, during the years seven to 12. This increasing ability is thought to reflect a progressive awareness of sex differences. Well established sexual identification may be implied by the obtainment of level four. The age and universality of the attainment of level four needs to be investigated through research with children older than those in the present study.

The higher levels of sexual differentiation on the scale do not seem merely to reflect increased mental age. The correlation of .261 between mental age and level of differentiation was significant, but low. In contrast, a correlation of .452 was obtained between chronological age and level of differentiation (with restriction in range being lessened by including seven- and eight-year-olds, as well as nine- through twelve-year-old children). In order to hold chronological

age constant, I.Q. scores at each of the age levels where they were available (ages nine through twelve) were correlated with level of differentiation, and these correlations were non-significant.

The scale does appear to be a developmental index, with the findings being applicable to children similar to those in the present study.

Level three of the scale being used was given particular attention, because it was here that differential treatment of figures within a given level could most readily be observed. Significant sex differences as to the figure emphasized at level three were found, and these sex differences were also present in the pilot study made previously to the collection of data for the present thesis. Both in the present and in the preliminary study[1] approximately 65% of the boys, in contrast to 85% of the girls emphasized their own sex figure, or emphasized the figures equally. And when considering emphasis upon one's own sex figure and equal emphasis of the figures separately, in both studies two-thirds of the girls, in contrast to approximately one-third of the boys, emphasized their own-sex figure.

Larger samples of drawings at level three need to be collected and a longitudinal approach utilized so that the possibility of developmental trends may be investigated. Questions such as whether most children may emphasize first one, and then the other figure at level three before progressing to level four, whether children will emphasize the figures equally at some time, and whether emphasis on one's own or opposite sex does indeed reflect identification, need to be investigated.

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[1]This preliminary study is described on page 16, and TABLES E through H in the Appendix indicate the treatment of the figures at level three by children in this group.

Proportions of children drawing their own sex figure first in the present sample are similar to the proportions for the combined sample of 1677 boys and 1700 girls from the studies reviewed by Brown and Tolor (1957). The studies by Jolles (1952), Butler and Marcuse (1959) and Bieliauskas (1960) give indication that at the younger age levels, boys show less tendency than at later ages to draw a person of their own sex first. Swensen (1955), however, reports he found no tendency for the proportion of children drawing their own sex figure first to increase with age, for either boys or girls. In the present study, it was at the younger ages that boys showed least tendency to draw their own sex figure first, and a significant relationship was found between age, and sex of the first drawn figure by boys.

As was found by Weider and Noller (1950, 1953), the tendency to draw one's own sex figure larger appears to be less strong than the tendency to draw one's own sex figure first, for both boys and girls, and boys seem to show less tendency than girls to draw their own sex figure larger.

A significant relationship was found between the measures, sex of the first drawn figure, and sex of the larger figure, for both boys and girls, whereas no significant relationship was found between sex of the more (or equally) emphasized figure at level three and sex of the first drawn or larger figure, for either boys or girls.

Its independence from the other measures, and the significant differences found between boys and girls in their tendency to emphasize their own sex figure more (or equally) at level three, indicate that the occurrence and meaning of this level deserve further exploration.

At all ages except 11, girls show more advanced differentiation than boys, and girls also show a greater tendency to emphasize their own sex figure more (or equally) and to draw their own sex figure first, and larger. At the later ages, the tendency of the boys to draw their own sex figure first seems to be equal in strength, or greater than that of the girls. The data available indicate that girls are more consistent in all aspects being studied.

Machover (1953) suggests that in our culture, the latency period is more conducive to the role played by girls than by boys. Lynn (1959) feels that the early closeness of the girl to the same-sex parent gives her an initial advantage in progressing toward appropriate identification. However, he predicts that the prestige and privileges accorded the male, the rewards offered for adopting the masculine role, and the punishment for not doing so, have a strengthening effect on the boy's masculine identification. Limuaco (1959) suggests that the dominant role of the mother in rearing children in the American home and the diminishing role of the father, especially as a disciplinarian, may be factors which adversely influence the sexual differentiation and identification of the boy.

The findings in this study are consistent with these formulations. Definite interpretation of the sex differences found in children's development of sexual differentiation, and interpretation of the meaning of emphasis upon one's own sex figure at level three, and the drawing of one's own sex figure first and larger must await further research, however. The validity of each of these measures as indicators of identification must be more fully investigated.

V. SUMMARY AND CONCLUSIONS

The Draw-A-Person test was administered to 326 first through sixth grade public school children, and from this sample, normative data concerning sexual differentiation is reported for the 312 seven- through twelve-year-old children. At each of these age levels, there are approximately 50 children, with the proportions of boys and girls being similar.

The pairs of drawings were scored for the degree of sexual differentiation present, as measured by Haworth's Sexual Differentiation Scale for the Draw-A-Person test. This test consists of four levels of differentiation, which are:

1. Figures nearly the same no apparent sex.
2. Similar body configuration and facial features, minimal differentiation.
3. One figure more clearly differentiated as to sex.
4. Each figure well differentiated as to sex.

Sexual differentiation, as measured by this scale, was found to improve as a function of age, with the growth curve for both boys and girls being moderately smooth. Girls tended to show somewhat more differentiation of the figures than did boys.

The higher levels of sexual differentiation on the scale do not seem merely to reflect increased mental age, for when chronological age was held constant by correlating level of differentiation and I. Q. scores at each of four age levels, the correlations were low and non-significant.

All pairs of drawings at the third level of differentiation were classified as to whether the own sex figure or the opposite sex figure

showed greater emphasis. Sex of the first drawn figure, and sex of the larger figure, were also recorded for each set of drawings.

Boys and girls were found to differ significantly in their treatment of figures at level three, with girls showing greater tendency to emphasize their own sex figure more. Both boys and girls tended to draw their own sex figure first, and their own sex figure larger, with girls showing a greater tendency to do so than boys, except at the older age levels, where boys showed equal, or greater tendency than girls to draw their own sex figure first.

A significant relationship between the measures, sex of the first drawn figure, and sex of the larger figure, was found to exist, whereas no significant relationship between the treatment of the figures at level three and either of the measures, sex of the first drawn figure, or sex of the larger figure, was found.

Level three merits further investigation, especially in light of the significant sex differences in treatment of the figures at this level, and the independence of this measure from the measures of sex of the first drawn figure and sex of the larger figure.

Cultural factors which may be pertinent to the understanding of the sex differences existing both in ability to differentiate, and in proportions emphasizing their own sex figure more at level three, and drawing their own sex figure first and larger, were discussed.

The scale utilized in the study was found to be appropriate for use with children's drawings as a measure of the development of sexual differentiation.

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APPENDIX

TABLE A

Sexual Differentiation Scale for the Draw-A-Person Test (for use with children)

Mary R. Haworth

Criteria	Level	Scores	Male Items	Female Items
1. Figures nearly the same, no apparent sex	#1	0 - 0 0 - 1 1 - 1	**Type A** Belts Buttons Collars	Cuffs Eyelashes Stripes or solid fill-in
Disregard A items throughout May have one B item on one or both figures No C or D items			(These items are disregarded throughout and receive no score.)	
2. Similar body configuration and facial features, minimal differentiation	#2	2 - 0 2 - 1 2 - 2	**Type B** Pants Short hair (or none)	Skirt Long hair
Lack of B items may be compensated by C items		3 - 0 3 - 1* 3 - 2*		
No D items				
3. One figure more clearly differentiated as to sex (except 3 - 3, 4 - 4)	#3	3 - 1* 3 - 2* 3 - 3 4 - 1 4 - 2 4 - 3 4 - 4** 5 - 2 5 - 3 5 - 4**	**Type C** Man's hat Necktie Pockets or patches Insignia or athletic letters Accessories: Spade Cane Gun Cigar	Woman's hat or tiara Barrette or bows Elaborate hair style Patterned or flowered dress Tucks, pleats or hem ruffles Puffed sleeves Heels higher than male's Heart-shaped lips Accessories: Flowers Purse Baby Apron
Use maximum of two C items per figure (after compensation for lack of B items)				
May have one D item on one figure only				
4. Each figure well differentiated as to sex	#4	4 - 4** 5 - 4** 5 - 5	**Type D** Mustache or whiskers Pant fly Lapels Pocket Hdchf. (even if erased) Occupational uniform	Breasts (even if erased) Heart-shaped neckline Nipped waist Sleeveless dress Jewelry
Must have at least one D item on each figure				
If no C item, must have two D items				

* Level 2 - if no D items
Level 3 - if one D item

** Level 3 - if no D items, or D item on one figure only
Level 4 - if one D item on each figure

Directions for scoring the Sexual Differentiation Scale

1. Count the number of items present on each figure according to the criteria.

2. Locate corresponding scores on the scale to determine level of differentiation.

3. Lack of B items may be compensated by C items, otherwise count maximum of two C items per figure.

4. In the final count, 5 is the maximum score attained and in most cases is distributed as follows: two B items, two C items, and one D item.

5. Always consider specific items in terms of the differentiation between the two figures. For example:

   Type B: Pants - skirt. Do not credit either figure if both have pants.
   Hair length. Do not credit either figure if hair is same length in both. Give 1 credit to each figure if female hair longer than male's; or if hair present on female and absent on male.

   Type C: Heels. Credit female if heels present only on female figure, or higher than on male.
   Heart-shaped lips. Must be more prominent on female figure, if present on both.

   Type D: Nipped waist. Credit female only if contours more pronounced than on male.

6. Female items needing clarification:

   Type C: Elaborate hair style. Must be more than simple fill-in or continuous loops hugging head. Credit if braids, definite bangs, upswept, pony-tail, long ringlets, etc.

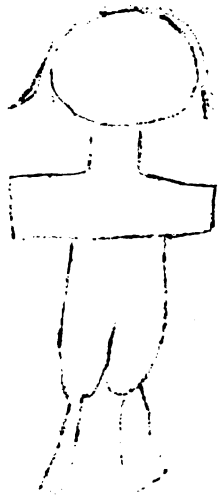
   Type D: Breasts. Not always accompanied by "nipped waist" and vice versa. Most often found on profile figures. Credit if indicated on front view by circles, shaded undercurves, etc. Credit if originally drawn and then erased.
   Nipped waist. Must be continuous in-curving line (i.e., not triangular skirt attached to triangular oval torso).

7. Male items needing clarification:

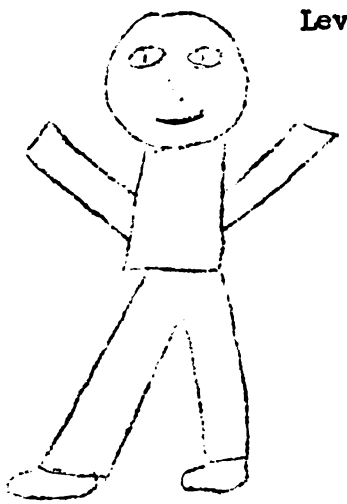
   Type C: Man's hat. Assume hair is under hat even though not shown (i.e., 2 points credited).

   Type D: Lapels. Shirt collars not credited; only definite lapels on coat or jacket.
   Pocket handkerchief. Credit even though subsequently erased. (Due to the current style of rectangular pocket handkerchiefs for men, it is sometimes difficult to distinguish from pocket flaps or bands. Credit if entire upper section was added on after the main pocket area, rather than an additional line drawn across the pocket.)
   Occupational uniform. Cowboy uniforms credited if complete (hat, high-heeled boots, guns, etc.) and mature in treatment (i.e., representing a man rather than a child "dressed up" for play).

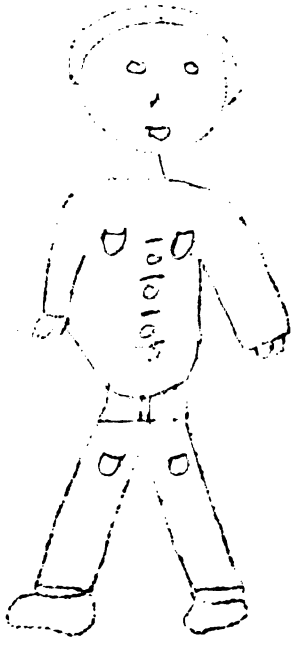
Level 1

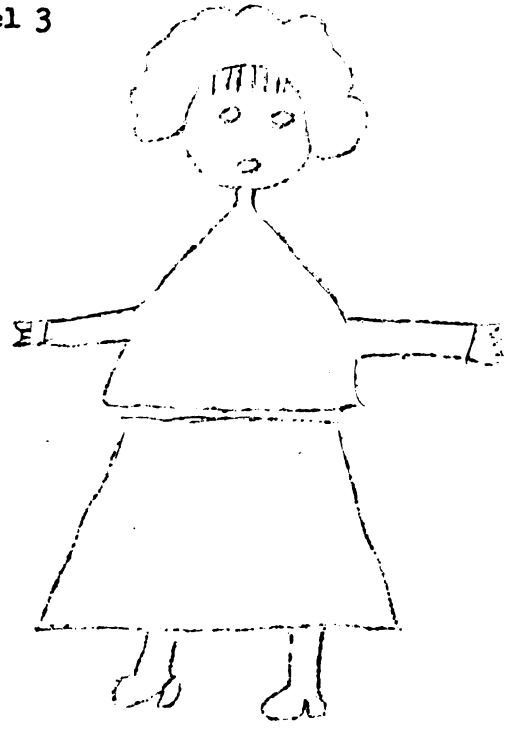


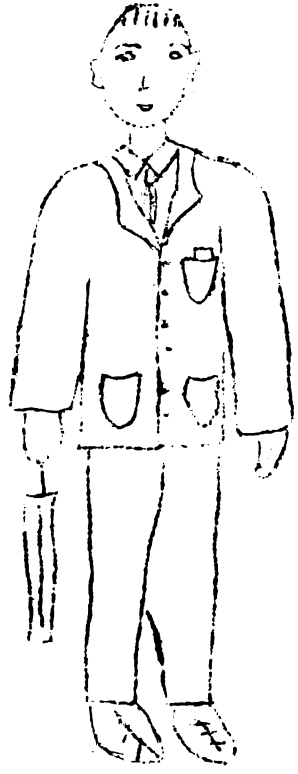
Level 2



Level 3







Level 4

TABLE B. A Comparison of the Boys Drawing Their Own Sex Figure First at the Varying Age Levels

Age	Own First	Opposite First	X^2	p
7	10	12		
8	20	9		
9	23	2		
10	26	3		
11	17	3		
12	21	3	22.3	.001

TABLE C. A Test of Independence of Sex of First Drawn Figure and Sex of Larger Figure (Boys)

	Own Larger	Opposite Larger	X^2	p
Own Sex Figure Drawn First	81	29		
Opposite Sex Figure Drawn First	16	21	10.1	.005**

**Yates correction applied.

TABLE D. A Test of Independence of Sex of First Drawn Figure and Sex of Larger Figure (Girls)

	Own Larger	Opposite Larger	X^2	p
Own Sex Figure Drawn First	92	27		
Opposite Sex Figure Drawn First	15	20	13.6	.001**

**Yates correction applied.

TABLE E. Figure More Emphasized at Level Three by Pilot Study Boys

Grade	N	Own (or Equal) Emphasis	Opposite Emphasis
1	1	0%	100%
2	4	75	25
3	7	100	0
4	19	53	47
5	12	50	50
6	11	64	36
Total	54	61%	39%

TABLE F. Figure More Emphasized at Level Three by Pilot Study Girls

Grade	N	Own (or Equal) Emphasis	Opposite Emphasis
1	2	50%	50%
2	4	75	25
3	4	75	25
4	22	91	9
5	6	83	17
6	14	93	7
Total	52	86%	14%

TABLE G. A Further Breakdown of Figure More Emphasized at Level Three by Pilot Study Boys

Grade	N	Own Emphasis	Opposite Emphasis	Figures Equally Emphasized
1	1	0%	100%	0%
2	4	25	25	50
3	7	57	0	43
4	19	37	47	16
5	12	25	50	25
6	11	55	36	9
	54	39%	39%	22%

TABLE H. A Further Breakdown of Figure More Emphasized at Level Three by Pilot Study Girls

Grade	N	Own Emphasis	Opposite Emphasis	Figures Equally Emphasized
1	2	50%	50%	0%
2	4	50	25	25
3	4	75	25	0
4	22	68	9	23
5	6	83	17	0
6	14	71.5	7	21.5
	52	69%	14%	17%