THE RELATION OF DRAWING TO BEHAVIOR PROBLEMS
IN CHILDREN

APPROVED:

[Signatures]

Major Professor

Minor Professor

Director of the Department of Education

Chairman, Graduate Council
THE RELATION OF DRAWING TO BEHAVIOR PROBLEMS
IN CHILDREN

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By

Martha Jewell Thomas, B. S.

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CHAPTER I

INTRODUCTION

Purpose

This study was made to determine to what extent behavior problems in fourth grade children in the Palo Pinto Common School, Palo Pinto, Texas, were revealed in their drawings.

Explanation of the Problem

The following definition by Olson of what constitutes a behavior problem will be used throughout this paper:

"The term behavior problem will be used to represent the discrepancy between the capacities of the individual to adjust and the demands of the environment."¹

The development of various tests and rating scales for diagnosing maladjustment in children has been based upon careful study of the individual child. A number of approaches to the study of the whole child have been used.

One of the avenues of approach has been through the drawings of the child. It was said by Barnes, one of the pioneer investigators in this field, that his study was "undertaken in the belief that through a child's drawings

¹Willard C. Olson, Problem Tendencies in Children, p. 3.
we could learn something of the way in which he thinks and feels."2

One of the first indications that drawing might be used to screen out maladjusted children from adjusted children was proposed by Goodenough after specimens of drawings by children in public schools showed some of the same characteristics discovered by writers interested primarily in the abnormal individual.

To discover whether or not a classroom teacher can use the drawings of her pupils to contribute to a better understanding of their difficulties in adjustment is the object of this study.

Review of Related Research

In order to understand the drawings of children it is well to review the various stages set forth by investigators as characteristic of the drawings of normal children. Goodenough reminds us that these stages are constant "both as regards the method of indicating the separate items in a drawing and the order in which these items tend to appear."3

She presents the stages described by Rouma in the drawing of the human figure:

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2 Earl Barnes, "A Study on Children's Drawings," Pedagogical Seminary, II (1893), 455.

3 Florence L. Goodenough, Measurement of Intelligence by Drawings, p. 12.
I. The preliminary stage.
   1. Adaptation of the hand to the instrument.
   2. The child gives a definite name to the incoherent lines which he traces.
   3. The child announces in advance that which he intends to represent.
   4. The child sees a resemblance between the lines obtained by chance and certain objects.

II. Evolution of the representation of the human figure.
   1. First tentative attempts at representation, similar to the preliminary stages.
   2. The "tadpole" stage.
   3. Transitional stage.
   4. Complete representation of the human figure as seen in full face.
   5. Transitional stage between full face and profile.
   6. The profile. ¹

O'Shea states that when a child sees an object he "gives relatively little conscious attention to their visual aspects, using sight knowledge simply as a means to reviving other associated knowledge" and that, furthermore, there is the "tendency to be always inferring and putting down what has become known from former experiences rather than what is immediately evident to the sense of sight." ² This accounts for the error of transparency where a child shows a whole man, for example, even though he is lying in a boat and cannot be seen.

The suggestion that the child's subjective world is disintegrated and fragmentary is made by Barnes:

This leads to many combinations which one might be tempted to explain as lack of reason, or as imperfect seeing; but a careful study will, I believe, convince any one that the fault is due to the fact that the child sees a fragment, a detail, and executes it, then sees another fragment and executes that, and so on, never seizing the whole as a whole.⁶

Psychologically the child does grasp wholes, but they are not so extended in scope at first; hence their fragmentary character. As he gradually matures, his horizon broadens. Wheeler and Perkins explain the process as follows:

Show to a three-year-old child a picture composed of a kitchen scene, and ask him to describe it. He will see a chair, a table, a cat, a woman, a window... The perception of single objects was precisely what occurred earlier in the life of the child... but complicated situations... are too intricate in detail to be grasped all at once. Consequently, the child sees what he can and ignores the rest. What he sees and understands is figure; the rest is ground.

When a child matures sufficiently to grasp larger and more complicated situations in their totality objects then emerge in patterns of knowledge differentiated with respect to their logical inter-relationships.

Children often draw the parts of the picture most interesting to them much larger than they actually are, while the items that are insignificant to them are drawn small or omitted entirely. This propensity is marked by Werner, who proposes the concept of emotional perspective to explain it. He declares that "emotional bias" causes a child to draw his first figures nearly all face with only

⁶Barnes, op. cit., pp. 455-463.

⁷Raymond H. Wheeler and Francis T. Perkins, Principles of Mental Development, p. 149.
a small trunk. The arms may be extraordinarily long at one time and barely indicated the next. Sometimes he may give the face more than the required number of eyes or the trunk more than two legs.\textsuperscript{8}

The development of the child's drawing from stage four, full face drawing, through the transitional stage to stage six, profile drawing, as outlined above is traced by Burt in this quotation:

Nearly 70 per cent. of the human figure, drawn by children at the age of 6, are shown full face, and how, by the age of 11, nearly 70 per cent. are drawn in profile facing (with right-handed children) to the left.\textsuperscript{9} But all the parts of the body do not turn at the same stage or even in the same direction. Hence, during the transition, the drawing may for a while show incompatible aspects incongruously combined. The face may turn to the left, the feet perhaps to the right, while the trunk—and sometimes the eyes and mouth as well—are still displayed in full view. A child of normal intelligence soon perceives the inconsistency; but the dull often adhere to the same hybrid representation for a year or more. And, if my statistics can be trusted, the left-handed especially those who have recently been required to write and draw with the right hand, or who are given to mirror writing, seem more prone to these confusions.\textsuperscript{10}

After the consideration of the characteristics of normal children's drawings it is well to observe the irregularities noted in the drawings of subnormal children.

Another quotation from Houma summarizes these peculiarities:

\textsuperscript{8}Heinz Werner, \textit{Comparative Psychology of Mental Development}, pp. 149-150.


\textsuperscript{10}Cyril Burt, \textit{The Backward Child}, p. 351.
The spontaneous drawings of subnormal children show: (1) a marked tendency to automatism, (2) slowness in the evolution from stage to stage, and (3) frequent retrogression to an inferior stage. (4) There are numerous manifestations of the flight of ideas. The drawings which cover a sheet of paper are not finished, and they have to do with a number of disparate subjects. (5) Certain drawings by subnormal children taken singly, are very complete; but when we examine them more closely we find that the child has confined himself to a series of sketches which have evolved slowly, and by slight modifications have gradually reached a certain degree of perfection. . . . (6) Many subnormal children show a great anxiety to represent an idea in its totality, or to reproduce all the details in a given sketch. . . . (7) Subnormal children prefer those drawings in which the same movement frequently recurs, and (8) they do meticulous work.11

Still other features characterize the drawings of abnormal children. Before discussing these signs of maladjustment shown in children's drawings, we may distinguish between the neurotic tendencies and the psychotic tendencies.

[Neuroses] have in common a substitutive character; they represent methods of escape from, of avoidance of, unpleasant situations. . . . While the behavior may interfere with entirely adequate adjustment, the person's contact with his environment remains real and relatively intact. . . .

The psychoses are personality disturbances of so severe a nature that not only is the person's behavior affected, but he is quite decidedly out of touch with environmental realities.12

Goodenough enumerates four classes of drawings which may disclose psychopathic tendencies. These are "verbalist" drawings which have a great deal of detail but few ideas; "individual response" type which have features unintelligible to all but the child; drawings showing a flight of

ideas already mentioned in the quotation from RouMa; and combination of primitive and mature features in the same drawing.\textsuperscript{13}

Although Goodenough does not list drawings which show a predominance of traits of the opposite sex as denoting personality disturbances, she does declare that this type of drawing was found mainly among the drawings of children who had been diagnosed as psychopathic.\textsuperscript{14}

Perrien found that post-encephalitis drawings seem to show a reversal of sexual characteristics, but that for psychopathic personality and children with border-line deficiency the trend is normal.\textsuperscript{15}

He also discovered that the children tested on the Goodenough Draw-A-Man Intelligence Test had varying degrees of success on particular items depending upon their disorder. The group characterized by the greatest emotional instability showed the widest variation in scores. There were very few specimens of the verbalist type or individual response type which had impressed Goodenough.\textsuperscript{16}

One of the conclusions reached by Brill while also

\textsuperscript{13}Goodenough, op. cit., p. 63.

\textsuperscript{14}\textit{Ibid.}, pp. 65-66.


\textsuperscript{16}\textit{Ibid.}
using the Goodenough test as a means of investigating that boys in his study who made more on the Goodenough than they did on the Binet test were generally better adjusted. He proposed an Abbreviated Scale of only twenty items as compared with the fifty-one items on the original scale. He stated that he differentiated between the adjusted and maladjusted by using this scale.\(^{17}\)

The relation of certain form elements rather than content to personality problems was expounded by Schmidt-Waehner. The formal criteria which he used to analyze the drawings of children are: the size of the picture; the format, that is, the proportions and shape of the paper; feeling for the relation of size of the single form elements in regard to the whole picture; the distribution of form elements in the picture; symmetry; balance and rhythm; the preference of drawing or painting; and motion elements.\(^{18}\)

In the first criteria, preference for small sizes was found among neurotic, depressive, anxious children while psychotic children sometimes preferred both extremes. The psychotic child preferred a long format or a fancy one. Depressive neurotics showed a preference for rigid symmetry.


They use mixtures of color and black in most of their pictures. Blue and pure white are used more by this group than by normal children. Little red and almost no yellow are used. 19

It will be noticed that Rouma lists a tendency to automatism as one of the characteristics of the subnormal child. Automatism has been defined by Goodenough as "when the same object or partial feature in a drawing will be repeated many times, apparently for the sheer pleasure of repetition." 20

In abnormal children Despert notes a tendency to repeat a subject of a theme: "The child seems absorbed in almost only one subject and the one form which he gives it. Perseveration of a 'theme' . . . is encountered in children with unresolved emotional conflicts. . . ." 21 He also mentions oral aggressiveness in which the mouth and teeth are prominent as a part of the regression referred to in the quotation by Rouma. He found little evidence of regression, however, in the drawings of neurotic children. 22

Despert recounts the drawing experiences of a hyperkinetic child whose pictures were filled with action:

19 Ibid.


21Despert, op. cit., p. 61.

22Ibid., p. 66.
destruction of ships and planes by fire, shooting, and a
truck wreck. He explains this aggressiveness as a compensa-
tion for fear. That the drawing is more beneficial to rest-
less children whose "unconscious fears are underlying the
apparent aggressiveness and overactivity," than to inhibited
children is Despert's viewpoint.23

Method of Investigation

The subjects for this study were nine fourth grade
children in the Palo Pinto Common School. A collection of
253 drawings and 17 specimens of the Goodenough-Draw-A-Man
Intelligence Test made by these children were examined,
making a total of 270 drawings.

These drawings were made either spontaneously or in
connection with the regular art periods. During the first
semester two twenty-minute periods a week were devoted to
art. A change of schedule for the second semester eliminated
the regular period for art, but drawing was used in story
illustration in reading, in social studies, and as a free
period activity.

The children had Creative Art for Graded Schools,
Book 3; 24 and Art Appreciation Textbooks, Book 1, My
Brownie Art Book; Book 3, My Indian Art Book; and Book 4.

23Ibid., pp. 72-73.

24Louise D. Tessin, Creative Art for Graded Schools,
Book 3.
My Pinnochio Art Book available. Copying was discouraged although some children persisted in doing so.

The first text was used as a reference. A list of the subjects developed in class instruction that were taken from the Art Appreciation series is as follows: animal drawing, Indian writing and design, color values, illustration, a study of Mount Vernon, early American clothing, and clothing selection. These are enumerated in order that their possible effect upon the drawings collected may be considered.

Three drawings from each child, each having one of these subjects: (1) a house, (2) a man, a lady, a little boy, or a little girl, and (3) a picture with some trees, were rated by the McCarty Scale. They were selected from the total group of each child's drawings after they had been collected as most representative of the three classes.

McCarty gives a formal method of procedure to stimulate the child and to make it possible to obtain the drawings in a short period of time. She comments, however, that the most valuable drawings would be spontaneous. Although to be strictly comparable to the McCarty Drawing Scale they

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25 Cora E. Stafford and Pearl Rucker, Art Appreciation Textbooks.
28 Stella A. McCarty, Children's Drawings, p. 92.
should also have been done in brown or black crayon on a uniform size paper, it was believed that a more objective judgment of the technic of the children's drawing could be reached by using the scale as an approximation.

The Goodenough Draw-A-Man Intelligence Test was administered in December and again in May. It is well to review any formal instruction in figure drawing which the children might have had since Goodenough finds that direct instruction in drawing the human figure does affect the test scores. During the first week of school each child was asked to draw a man. The paper was folded to indicate the proportions, but no child observed them. There was no further discussion of the drawings. Several children became interested in making a Pinnochio toy from oak tag board, but since the parts were traced, it is improbable that the exercise influenced them in subsequent drawings. Figures for the sand table were drawn for a unit in social studies on Cave People, and on several other units. However, there was no further formal study of the drawing of human figures. One result from these lessons was a method of representing the hands which failed to show the fingers; only the hand and thumb were drawn.

29 Goodenough, Measurement of Intelligence by Drawing, p. 54.


These tests were scored according to the Brill Abbreviated Scale. The items which Berrien found that psychopathic children failed and the items which post-encephalitis children failed were also noted in the tests taken by this group. They were scored on the fifty-one items of the original scale constructed by Goodenough.

Success or failure on the twenty pairs of items selected by Berrien were noticed. These items were paired on the basis of similar "points of origin and termination and whose characteristics were as nearly alike as possible." Since these items were similar in time of origin in normal children, each pair was approximately equal in so far as being primitive or mature. If a child passed several paired items and failed the other members of the same pairs, it may be said that he had a combination of mature and primitive characteristics in the same drawing. These items were taken from the Goodenough Draw-A-Man Intelligence Scale. This was one of the indications of psychopathy mentioned by Goodenough.

The masculine and feminine traits on the Goodenough tests were tallied according to the list she compiled. The relationship between the two was found by dividing the total frequency of masculine characteristics by the total

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\[32\] Berrien, op. cit., pp. 148-149.

\[33\] Goodenough, op. cit., p. 63.

\[34\] Ibid., p. 61.
frequency of feminine characteristics. This was called the masculine-feminine quotient by Berrien.\textsuperscript{35}

A line-analysis test suggested by Harms was used.\textsuperscript{36} The children were asked to draw by lines how they felt when they were angry, happy, sad, sick, tough, and tired. The words were written on the board. The purpose of the test was to reveal neurotic patterns.

A tabulation of the different stages of transition from the full face drawing to the profile drawing was made in order to determine the normalcy of this group in that direction. The stages of left-handed and right-handed children in making the transition are observed.\textsuperscript{37}

The drawings were analyzed by Schmidl-Waehler's formal criteria. The colors the child employed in his pictures were observed.\textsuperscript{38}

The degree of adjustment of each child was estimated by the Haggerty-Olson-Wickman Behavior Rating Schedules A and E. One rating was made in March and one in June.\textsuperscript{39} The children were also rated on An Evaluation of Personality.

\textsuperscript{35}Berrien, op. cit., p. 146.

\textsuperscript{36}Ernst Harms, "Child Art as Aid in Diagnosis of Juvenile Neuroses," American Journal of Orthopsychiatry, XI (April, 1941), 191-209.

\textsuperscript{37}Burt, op. cit., p. 351.

\textsuperscript{38}Schmidl-Waehler, op. cit.

\textsuperscript{39}M. E. Haggerty, W. C. Olson, and F. K. Wickman, Haggerty-Olson-Wickman Behavior Rating Schedules, 1950.
Form A,\textsuperscript{40} in June. Anecdotal records were kept for each child from September 14, 1942, to November 6, 1942.

The Kuhlmann-Anderson Intelligence Test\textsuperscript{41} was given in May. At mid-term the Stanford Achievement Test, Primary Battery, Form D,\textsuperscript{42} was administered. Two forms of the Harlow Achievement Test\textsuperscript{43} were given at the end of the school year.

Limitations

Some of the limitations of the use of the McCarty Scale in this study have already been seen, such as lack of uniformity in directions and specifications in drawing.

One child of the group failed to take the Goodenough Draw-A-Man Intelligence Test in December. Two other children did not take the test when it was given in May.

Since the children in this group had only been in school three years, all of the tests were on the third year level except the final Harlow Achievement Test.

The line-analysis would have been more nearly complete had the children been asked to write their own list and

\begin{footnotesize}
\begin{enumerate}
\item T. L. Kelley, G. M. Ruch, L. M. Terman, Stanford Achievement Test, Primary Battery: Form D, 1940.
\item The Harlow Achievement Tests for Third Grade, Form F, 1941, and The Harlow Achievement Tests for Fourth Grade, Form G, 1942.
\end{enumerate}
\end{footnotesize}
line-analysis of the words they suggested on the back of their tests. Only six pupils of this group were included on this test.

Standard directions of giving instructions, timing, and scoring were closely followed in the other tests. The testing and scoring was done by the writer.

In rating the personality of the pupils, an attempt was made to eliminate bias and prejudice. The ratings of Pupils B and C were somewhat influenced by the occurrence of an outstanding behavior incident a short while before the June rating on the Haggerty-Olson-Wickman Behavior Rating Schedules A and B. It is likely that the rating of Pupil C on these scales was most affected by the "halo effect"; that is, his avid interest in everything about him and his ability to play well in group games over-shadowed his emotional instability and temper tantrums.

Another source of error in rating mentioned by Strang\textsuperscript{44} which would materially influence the scores on Division I, Mental Traits, of the Haggerty-Olson-Wickman Behavior Rating Schedule B is the tendency to underrate the bright and to give the dull a rating that is too high on scholastic aptitude. Pupil F was rated higher than his ability would justify.

The Haggerty-Olson-Wickman Behavior Rating Schedule

\textsuperscript{44}Ruth Strang, \textit{The Role of the Teacher in Personnel Work}, pp. 193-194.
tends to emphasize aggressive behavior and fails to disclose "certain non-aggressive types of nervous or emotional disorder the correction of which may be as important for the mental hygiene of the child as the correction of aggressive behavior which is more apparent." This tendency may account for the unusually low score of Pupil D, who was rated the best adjusted child in the class on all ratings except the March rating on Schedule B. He was very timid and reticent.

CHAPTER II

BEHAVIOR PROBLEMS REVEALED IN THE STUDY

The concept of needs which come from the innate physical organism of the child, his experience, and the demands of society gives a functional basis for the understanding of all behavior of children.\(^1\) This concept is dynamic rather than static. It implies the necessity for making continual adjustment. Olson suggested this point of view when he declared that to varying degrees all children are problem children, that is, children with problems in adjustment.\(^2\)

When these needs are not met, there is tension or conflict between the child and his environment which takes the form of overt behavior to resolve the tension. This behavior may be asocial or antisocial according to Prescott.\(^3\) Although Strang does not use these terms, she outlines two types of maladjustment: "that involving behavior that is individually satisfying but not socially acceptable, and that involving behavior that is socially approved but a

\(^1\)Daniel A. Prescott, Emotion and the Educative Process, pp. 111-112.
\(^2\)Olson, op. cit., p. 3.
\(^3\)Prescott, op. cit., p. 110.
source of excessive, long-continued, disturbing conflict to the individual.\textsuperscript{4}

Comparison of Ratings Made on the Haggerty- Olson-Wickman Behavior Rating Schedules A and B by Children in This Study in March, 1943 and June, 1943

Scores of children in this study on the Haggerty- Olson-Wickman Behavior Rating Schedules A and B in March and in June are shown in Table 1. As a rule, the scores on the rating made in June are higher than those on the rating made in March.

Pupil G's score on Schedule A increased 25 points due to the fact that he displayed more overt behavior problems; namely, more temper outbursts, more defiance, truancy, and writing obscene notes.

On the other hand, Pupil A's score indicated a decrease in the number of overt problems by dropping 17 points on Schedule A. The fact he was isolated from the group much of the time because he disturbed others may account for the lower score. The score in this instance then may not mean that the child became better adjusted. The variance in scores on Schedule A were not so extreme in the case of the other children.

Although there are no cases of such wide variation in scores on Schedule B, there is considerable increase in


### Table 1

Differences in ratings on problem behavior of nine pupils as revealed by the use of Schedules A and B of the Haggerty-Olson-Wickman behavior rating schedules in March and June

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<th>June Rating of the Haggerty-Olson Wickman Behavior Rating Schedules</th>
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<td>52</td>
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</tr>
<tr>
<td>F</td>
<td>34</td>
<td>95</td>
</tr>
<tr>
<td>G</td>
<td>57</td>
<td>110</td>
</tr>
<tr>
<td>H</td>
<td>48</td>
<td>88</td>
</tr>
<tr>
<td>I</td>
<td>74</td>
<td>116</td>
</tr>
</tbody>
</table>

Median:       53  88        49  97
Mean:         48  92        51  99

In most instances, the suggestion that Pupil A still has difficulties in adjustment seems to be borne out by the fact that his score on Schedule B increased 14 points. A like increase for Pupil F demonstrates the fact that while problems of a regressive nature may not show up on Schedule A the presence of certain traits on Schedule B as being dispirited, apprehensive, suspicious, and negativistic may indicate this type of behavior.

Pupil D, who was rated with the lowest score on all ratings except the March rating on Schedule B, was shy and
withdrawing. Few undesirable traits of a regressive nature which he had were measured since it has been pointed out that these scales emphasize aggressive types of behavior.

The median scores for this group on Schedule A are 53 on the March rating and 49 on the June rating. According to the norms for this scale, these scores would indicate a percentile rank of 92 and 93, respectively. On Schedule B the median scores for the group are 88 on the March rating and 97 on the June rating. This would indicate a percentile rank of 64 and 97.\textsuperscript{5} It will be remembered that a high score on the scales means a high degree of maladjustment while a low score means that the child is well adjusted.

Olson warns that the significance of a score is relative to the mean score of the group studied.\textsuperscript{6} Therefore, while such high percentile rank probably indicates a higher than average number of behavior problems in this group, a better understanding of each child's rank can be had by comparing his score with the others.

Discussion of Scores Made on Schedule A of the Haggerty-Olson-Wickman Behavior Rating Schedules

The frequency of occurrence of behavior problems listed on Schedule A is shown in Table 2 for this group of children. This Schedule consists of problems listed in the


\textsuperscript{6}Ibid., p. 2.
### Table 2

The frequency of behavior problems of nine pupils as revealed by the use of schedule A of the Haggerty-olson-Wickman Behavior Rating Schedule

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Disinterest in Work</th>
<th>Cheating</th>
<th>Unnecessary Tardiness</th>
<th>Lying</th>
<th>Defiance to Discipline</th>
<th>Maladjustment</th>
<th>Unpopular with Children</th>
<th>Temper Outbursts</th>
<th>Bullying</th>
<th>Speech Difficulties</th>
<th>Imaginative Lying</th>
<th>Sex Offenses</th>
<th>Stealing</th>
<th>Truancy</th>
<th>Obscene Notes, Talk, or Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>FT</td>
<td>NN</td>
<td>NN</td>
<td>TT</td>
<td>F</td>
<td>C</td>
<td>FT</td>
<td>NN</td>
<td>TC</td>
<td>FT</td>
<td>NN</td>
<td>NN</td>
<td>NM</td>
<td>FT</td>
<td>FT</td>
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<td>NM</td>
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<td>C</td>
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<td>D</td>
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</tr>
</tbody>
</table>
order in which they most frequently occur in elementary school children.

It will be seen from Table 2 that the most persistent problem in this group is that of disinterest in school work. This was also the problem noted most often by Haggerty in his study of eight hundred Minneapolis school children.7

Five of the children who manifested the trait were boys with intelligence quotients of 76, 72, 69, 64, and 61 on the Kuhlmann-Anderson Intelligence Test. Since Pupil D and E, who have an I. Q. of 76 and 64, respectively, transferred from another school there are no records of scholastic failure. Pupil I, whose I. Q. was 72, was retained in the second grade for two years and was promoted to the third only when the twelve-grade plan was introduced in the schools. He did the same level of work as he had done in the second grade. The same procedure was followed in the promotion of Pupil B. He was classified at the third grade level for three years. He was a high grade moron with an I. Q. of 69. Pupil G was retained one year in the second grade. He made the lowest score on the intelligence test, 61.

In cases such as these disinterest in school work usually follows because most of the curricular material is

too difficult for them. This was not true for Pupil A, who
had normal intelligence. He was very meticulous in the
work which he did. It took a very long time for him to
finish a task, however, and many times he refused even to
begin because he did not want to do the work assigned.

Marked over-activity rated as the next most frequent
trouble among children in this group. Pupil C, who also
manifested disinterest in school work, was restless and
frightly. Pupil C, on the other hand, was interested in
almost everything, but he seemed to have a physical basis
for his hyperkinetic reactions. Pupil A continually moved
around. Pupil H's overactivity seemed to stem from a
superabundance of natural energy.

Defiance to discipline was shown by three boys who
took this method of circumventing authority. Unnecessary
tardiness, bullying, and speech difficulties were moderately
prevalent problems.

It might be well to examine the problems found in this
group in the light of Wickman's study to determine the rela-
tive seriousness as rated by mental hygienists. In the
report published in 1928 lack of interest in work was said
to be of considerable importance, ranking twenty-sixth in
the list of fifty problems. Restlessness was rated of
little more than slight importance and was fortieth on the
list. Disobedience was rated the same as restlessness.
Tardiness was rated slightly less important than disobedience.
The mental hygienists rated bullying along with cruelty in sixth place and of considerable importance.  

There have been some changes in the attitude of mental hygienists toward these problems since Wickman's study was first published. Restlessness was considered more serious by 1940 mental hygienists than by their colleagues in 1927. They agreed that tardiness was still only slightly undesirable.  

Discussion of Scores Made on Schedule B of the Haggerty-olson-Wickman Behavior Rating Schedules

There are four sections to Schedule B: Division I, mental traits; Division II, physical traits; Division III, social traits; and Division IV, emotional traits. All of the traits are qualified by five descriptive phrases which have different weightings according to their relation to overt behavior problems. The score is one in problem tendencies.  

The diagnostic use of the schedules is outlined by Olson:

Schedule A is designed to locate problem children through a record of overt behavior problems. Schedule B attempts to get at personal characteristics on a variety

\[\text{REFERENCES}\]

\[8\] E. K. Wickman, Children's Behavior and Teacher's Attitudes, pp. 126-128.


\[10\] Willard C. Olson, op. cit., p. 8.
of traits regardless of whether or not the behavior described would be called a behavior problem. It appeared that the latter device would yield scores that would be indicative of problem tendencies and have diagnostic significance, providing the relationship of each amount of each trait to overt behavior problems could be determined. Such information would aid in identifying problem children in the absence of any observed misbehavior or in pointing out such children as are potential problems.\(^{11}\)

Table 3 summarizes the scores on the divisions of Schedule B. The items with weightings of 4 or 5 which were checked for each child are made into a narrative form according to the "word picture" method described by Olson.\(^{12}\)

Pupil A frequently became absent-minded, and it was difficult for him to keep at a task until it was finished. His social adjustment was hindered by the fact that he talked incessantly and had a very critical attitude. Acting without thinking and impatience are traits that characterize his emotional adjustment.

Pupil B was bordering on feeble-mindedness according to the rating on Division I. Consequently, his attention span was short, and he was extremely slow and inexact in his thinking. In physical appearance he was slovenly and unkept and therefore made an unfavorable impression. He echoed things others said. When hardships became involved, he usually gave up the task.

\(^{11}\) Ibid., pp. 4-5.

TABLE 3
SCORING ON DIVISIONS OF SCHEDULE B OF THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULE MADE BY NINE CHILDREN IN THIS STUDY

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Division I: Mental Traits</th>
<th>Division II: Physical Traits</th>
<th>Division III: Social Traits</th>
<th>Division IV: Emotional Traits</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M^a</td>
<td>J^b</td>
<td>M</td>
<td>J</td>
<td>M</td>
</tr>
<tr>
<td>A</td>
<td>17</td>
<td>21</td>
<td>12</td>
<td>15</td>
<td>26</td>
</tr>
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<td>B</td>
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<td>C</td>
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<td>D</td>
<td>25</td>
<td>24</td>
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<td>11</td>
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<td>E</td>
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<td>H</td>
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<tr>
<td>I</td>
<td>22</td>
<td>25</td>
<td>14</td>
<td>17</td>
<td>42</td>
</tr>
</tbody>
</table>

^aMarch Rating  ^bJune Rating

Outstanding traits in the case of Pupil C were his hyperactivity, impatience, and talking more than his share. Sometimes he was unmannerly and saucy.

Pupil D was rated very low on all but the traits on Division I. The adjectives dull, sluggish, lethargic, and uninquisitive were applied to him.

It will be noticed that Pupil E made high scores on
Division II and Division IV. She was fairly unattractive and was handicapped by heart trouble. Her emotional adjustment was hampered by her mother's attitude toward her. She had been bathed and spoiled. She displayed a tendency to worry and a predisposition for temper tantrums when she did not get her own way.

Emotional maladjustment seemed to be Pupil F's trouble. He was frequently dispirited and contrary. He was critical of authority, rude, and rarely approved of anything done. His mental traits that were outstanding were dullness and lack of interest.

Pupil G was characterized by a general flightiness. He was easily irritated, impulsive, of a "dare-devil" type. In short, he appeared very unstable.

Pupil H was somewhat of a "tomboy." Her main traits were consistent with this type: she was meddling, bold, insistent, and rather critical.

In the case of Pupil I we find a boy who is dull, lazy, sluggish, and has difficulty keeping at a task until it is completed. Although he was rather negligent with his personal appearance, he made a favorable impression on the whole. He was bold, defiant, stubborn, and rude, rarely approving anything that was done. He was easily irritated and contrary.

The least amount of variation between the rating in March and the rating in June is found on Division II. The
range was from 2 to -1. This is to be expected since physical traits are likely to remain very much the same.

Ratings on mental traits were the next most constant with a range of from 4 to -1.

Divisions showing the emotional and social adjustment of the children in this study varied most. Ratings of traits on Division III ranged from 9 to -3; range of scores on Division IV was from 8 to -10. These traits are not so stable. They are less easily observable and more difficult to rate objectively.

Relation of Intelligence Quotients and Achievement Test Scores of the Children in This Study to Their Ratings on the Haggerty- Olson-Wickman Behavior Rating Schedules A and B

Table 4 includes the scores on Schedules A and B of the Haggerty-Olson-Wickman Behavior Rating Schedules, the intelligence quotient derived from the Kuhlmann-Anderson Intelligence Test, the scores on the Stanford Achievement Test, Primary Battery: Form D, and the average of the scores on the two Harlow Achievement tests.

A study of the table will disclose that the results for this group tend to bear out the conclusions reached by Sorenson concerning the relationship of scores on the Behavior Rating Schedules and academic success. He declares that the best single measure for predicting academic success is, of course, the intelligence test but that scores on Schedule B are second in value. From his study he
Table 4

Scores on Schedules A and B of the Haggerty- Olson- Wickman Behavior Rating Schedules Compared with Intelligence Quotients Derived from the Kuhlmann-Anderson Test for Nine Children in This Study, Their Scores on the Stanford Achievement Test, and Their Mean Scores on the Two Harlow Achievement Tests

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Haggerty-Olson-Wickman Behavior Rating Schedule A</th>
<th>Haggerty-Olson-Wickman Behavior Rating Schedule B</th>
<th>Intelligence Quotient Kuhlmann-Anderson Test</th>
<th>Chronological Age</th>
<th>Mean of the Two Harlow Achievement Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
<td>f</td>
</tr>
<tr>
<td></td>
<td>Ma</td>
<td>Jb</td>
<td>M J</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>66</td>
<td>49</td>
<td>83 97</td>
<td>100</td>
<td>9-5</td>
</tr>
<tr>
<td>B</td>
<td>53</td>
<td>57</td>
<td>106 115</td>
<td>89</td>
<td>11-4</td>
</tr>
<tr>
<td>C</td>
<td>32</td>
<td>36</td>
<td>74 86</td>
<td>113</td>
<td>9-3</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
<td>13</td>
<td>78 83</td>
<td>75</td>
<td>10-1</td>
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<tr>
<td>E</td>
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<td>48</td>
<td>44</td>
<td>88 85</td>
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<td>116 112</td>
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<td>51</td>
<td>92 99</td>
<td>66</td>
<td>10-3</td>
</tr>
</tbody>
</table>

aMarch Rating

bJune Rating

discovered a coefficient of correlation between academic grades and intelligence tests of .618 and that between
Schedule B and academic grades -.551. The study of Fox reported by Olson shows a correlation of -.52 between average grades and Schedule A and -.54 between average grades and Schedule B.  

The pupils with the lowest scores on Schedule B, with one exception, had intelligence quotients which were 100 or above. The possible explanation of Pupil D's low scores has elsewhere been attributed to a predominance of withdrawing traits in his personality. He did, however, have the highest intelligence quotient of the group remaining. These pupils also had the best rating on the achievement test.

The scores on Schedule A do not parallel achievement test scores and intelligence quotients quite so closely. Only Pupils C and H of the group which had average or above average intelligence made low scores on the March rating on Schedule A. Pupils B, D, F, and G of the subnormal group all have scores lower than the remaining members of the normal group, Pupils A and E.

The children in the group with normal or above normal intelligence...

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intelligence made the low scores on the June rating of Schedule A. Pupil D was also included, making the lowest score of the nine children.

Following this discussion we may conclude with Olson:

It is clear that problem behavior tends to 'go with' relatively poor school achievement. The questions are whether both are symptomatic reflections of an underlying incapacity for adjustment, whether school failure predisposes to social maladjustment, or whether social maladjustment prevents the maximum of achievement of which the individual is capable. . . . Current practice attempts to plan the educational program in terms of the needs of the whole child and to provide for successful achievement within the range of the child's abilities.15

Comparison of the Ratings on Form A, An Evaluation of Personality, with the Ratings on the Haggerty-Olson-Wickman Behavior Rating Schedules A and B

The rating of nine children in this group on the items listed on Form A of An Evaluation of Personality is shown in Table 5. In this scale all of the items are positive adjectives which the school should seek to develop.

A zero indicates that the child is average in the trait rated, a plus 1 indicates he is above average, and a plus 2 indicates that he is excellent in the trait in question. To show that he is slightly below average a minus 1 is used; to show that he is dangerously below average a minus 2 is used in scoring. The score is the algebraic sum of the ratings.16

15 Olson, ibid., pp. 353-354.
<table>
<thead>
<tr>
<th>Pupils</th>
<th>Accurate</th>
<th>Adaptable</th>
<th>Alert</th>
<th>Calm</th>
<th>Cheerful</th>
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<th>Energetic</th>
<th>Independent</th>
<th>Neat</th>
<th>Obpliant</th>
<th>Original</th>
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<th>Sincere</th>
<th>Stable</th>
<th>Sociable</th>
<th>Ethereal</th>
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<th>Total</th>
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<td>0</td>
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<td>+2</td>
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<td>+1</td>
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<tr>
<td>G</td>
<td>+1</td>
<td>-1</td>
<td>-2</td>
<td>+2</td>
<td>+2</td>
<td>+2</td>
<td>-2</td>
<td>-2</td>
<td>+2</td>
<td>-2</td>
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<td>+2</td>
<td>-2</td>
<td>-2</td>
<td>+2</td>
<td>+2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>+1</td>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>+1</td>
<td>+2</td>
<td>+2</td>
<td>+2</td>
<td>+2</td>
<td>0</td>
<td>-1</td>
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<td>+1</td>
<td>+1</td>
<td>0</td>
<td>+12</td>
<td>+2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>+1</td>
<td>-2</td>
<td>0</td>
<td>-1</td>
<td>-1</td>
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<td>+2</td>
<td>+2</td>
<td>0</td>
<td>0</td>
<td>-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>-3</td>
<td>-8</td>
<td>+2</td>
<td>-5</td>
<td>-4</td>
<td>-5</td>
<td>+3</td>
<td>-3</td>
<td>-4</td>
<td>-1</td>
<td>-2</td>
<td>-1</td>
<td>-6</td>
<td>0</td>
<td>-5</td>
<td>-3</td>
<td>-1</td>
<td>+4</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>
The children as a group appear to be much below the average in traits of accuracy, adaptability, persistence, calmness, cheerfulness, considerateness, energy, independence, and stability. They are average, or near average, on alertness, neatness, obedience, originality, promptness, and sincerity. They are above the average in courage, sociability, and thriftiness.

A comparison of their rank on Form A: An Evaluation of Personality and the Haggerty- Olson-Wickman Behavior Rating Schedules is made in Table 6.

Pupil C had the same rank on Form A: An Evaluation of Personality that he had on Schedule A of the Haggerty-

**Table 6**

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Evaluation of Personality</th>
<th>Haggerty-Olson-Wickman Behavior Rating Schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>Rank</td>
<td>M Score</td>
</tr>
<tr>
<td>A</td>
<td>-4</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>-21</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>+7</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>+2</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>-3</td>
<td>4</td>
</tr>
<tr>
<td>F</td>
<td>-13</td>
<td>8</td>
</tr>
<tr>
<td>G</td>
<td>-9</td>
<td>6</td>
</tr>
<tr>
<td>H</td>
<td>+12</td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>-11</td>
<td>7</td>
</tr>
</tbody>
</table>

*March Rating  
**June Rating
Olson-Wickman Behavior Rating Schedules on both ratings. Pupil E had the same rank on Form A: An Evaluation of Personality that she had on both ratings of Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules. Pupil A was ranked fifth on Form A and also on the June rating of Schedule A. Pupil G was ranked sixth on Form A and on the March rating of Schedule A. Pupil D ranked third on Form A, first on Schedule A and second on Schedule B for both ratings.

The pupil whose difference in rank is outstanding is Pupil H. She was rated 1 on Form A, 4 on both ratings of Schedule A, and 5 on both ratings of Schedule B. She is accurate, courageous, alert, energetic, independent, persistent, prompt, stable, and thrifty. At the same time, however, she is obstinate, complies slowly, bold, critical of authority, and markedly overactive. In general, a low score on Form A: An Evaluation of Personality will be accompanied by a low score on the Haggerty-Olson-Wickman Behavior Rating Schedules although there may be some variation within such a small group as the one here considered.

Summary

The behavior problems found in this group on Schedule A of the Haggerty-Olson-Wickman Behavior Rating Schedules in the order of the frequency of occurrence are as follows: disinterest in school work, marked overactivity, defiance to discipline, unnecessary tardiness, bullying, and speech
difficulties. Characteristics revealed by Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules are: a critical attitude, impoliteness, dullness, obstinate, over-talkativeness, impulsiveness, easily irritated, and gives up easily. The rating of the group on Form A: An Evaluation of Personality reveals that they are below average on traits of accuracy, adaptability, persistence, calmness, cheerfulness, considerateness, energy, independence, and stability.
CHAPTER III

DIAGNOSIS OF BEHAVIOR PROBLEMS THROUGH CHILDREN'S DRAWINGS

That aberrations in personality development in children are reflected to a certain extent in their drawings has been suggested by a large number of investigators. The unusual drawings made by some children on the Draw-A-Man Intelligence Test led Goodenough to note these peculiarities and to suggest that their appearance might indicate the presence of underlying behavior difficulties in children making these responses.¹

The Diagnostic Value of the Goodenough Draw-A-Man Intelligence Test

The Goodenough Draw-A-Man Intelligence Test was given December 31, 1942, to all of the children in the group except Pupil C and again May 21, 1943, to all the group except Pupils A and H.

Not any of the drawings in this group are clearly of the "verbalist type," nor are there any drawings showing the "individual response" type.²

On the May test Pupil C made three beginnings before

¹Goodenough, Measurement of Intelligence by Drawings, pp. 62-66.
²Ibid., p. 63.
he completed the fourth picture of a soldier. This example fails to show incomplete pictures of different types of persons, however, as would be the case in a true example of a drawing showing a flight of ideas.3 Pupils E and I have omitted the line which makes the shirt sleeve on the May test. The drawing of one item on one side of a figure and not on the other is indicative of the same type of error, a flight of ideas.4

Evidence of "uneven mental development"5 in the drawings of children in this group will be studied by success or failure on Berrien's paired items.6

On Table 7 is shown the success or failure of each child on each item of the pairs selected by Berrien from the Goodenough Draw-A-Man Intelligence Test. The children all succeeded on item 2, legs present; 7a, eyes present; and 7b, nose present. All except Pupil F on the December test passed item 7c, mouth present; all succeeded on this item on the May test.

None of this group succeeded on item 14f, symmetrical features; 15b, ears present in correct position and proportion; 17b, projection of chin shown; or 18b, profile free from error. Only Pupil G succeeded on item 14c, outline of head without obviously unintentional irregularities on the

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3 Rouma, op. cit. 4 Goodenough, op. cit., p. 63.
5 Ibid. 6 Berrien, op. cit., pp. 148-49.
### Table 7

Success of Nine Children on the Items Selected from the Goodenough Draw-A-Man Intelligence Test by DeRrien on the Goodenough Tests Taken by the Group in December and in May

<table>
<thead>
<tr>
<th>Paired Items on the Goodenough Scale Selected by Terrien as Indicative of Primitive and Mature Characteristics</th>
<th>Pupils Who Scores on Each Item on Each Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Da</td>
</tr>
<tr>
<td>4c.</td>
<td>1</td>
</tr>
<tr>
<td>14c.</td>
<td>1</td>
</tr>
<tr>
<td>6a.</td>
<td>1</td>
</tr>
<tr>
<td>17a.</td>
<td>1</td>
</tr>
<tr>
<td>6b.</td>
<td>1</td>
</tr>
<tr>
<td>11a.</td>
<td>-</td>
</tr>
<tr>
<td>9c.</td>
<td>-</td>
</tr>
<tr>
<td>14f.</td>
<td>-</td>
</tr>
<tr>
<td>14c.</td>
<td>1</td>
</tr>
<tr>
<td>14d.</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
</tr>
<tr>
<td>7a.</td>
<td>1</td>
</tr>
<tr>
<td>7b.</td>
<td>1</td>
</tr>
<tr>
<td>7c.</td>
<td>1</td>
</tr>
<tr>
<td>7c.</td>
<td>1</td>
</tr>
<tr>
<td>15b.</td>
<td>-</td>
</tr>
<tr>
<td>14b.</td>
<td>1</td>
</tr>
<tr>
<td>16b.</td>
<td>-</td>
</tr>
<tr>
<td>16c.</td>
<td>-</td>
</tr>
<tr>
<td>17b.</td>
<td>-</td>
</tr>
<tr>
<td>Total Pairs . . . . . . . . . . . . . . . . . . . . . . . . . . .</td>
<td>3</td>
</tr>
<tr>
<td>Total Individual Items . . . . . . . . . . . . . . . . . . . . .</td>
<td>11</td>
</tr>
</tbody>
</table>

*December Test* | *May Test* | *No scores available*
May test; none passed the item on the December test. Pupil A passed 14b, motor coordination, all lines firmly drawn with correct joining, on the December test; no one passed the item on the May test. Pupil A passed item 14d on the December test; Pupil D passed the same item on the May test. No other child passed the item. Only Pupil D on the May test and Pupil E on the December test passed item 9c, drawing free from transparencies.

The failures on the various items noted are not in themselves indicative of uneven mental development. Pupils usually pass certain items at definite chronological ages, varying according to their mental development. The percentage of the children passing the items in the accelerated, normal, and retarded groups in Goodenough's original study7 is recorded in Table 8 along with the percentage of children in this group passing the same items.

The median age for the group studied is 9-10 and the median intelligence quotient on the Kuhlmann-Anderson test is 76.8 The majority of the members in this class may be said to belong to the retarded group.

On the May test the same percentage of children passed each item in Pairs II, VI, and VII, seventy-one per cent passing Pair II and one hundred per cent passing the other two pairs. Only Pair VI on the December test was passed

7Goodenough, op. cit., pp. 24-25.
8See Table 4 in Chapter II, p. 30.
# Table 8

**Per cent of Nine and Ten-Year Old Accelerated, Normal, and Retarded Children in Goodenough's Original Group Passing Items Selected by Berrien from Goodenough's Draw-a-Man Intelligence Test as Indicative of Primitive and Mature Characteristics Compared with the per cent of Nine Children Passing Same Items on December and May Goodenough Draw-a-Man Intelligence Test**

<table>
<thead>
<tr>
<th>Paired Items on the Goodenough Scale Selected by Berrien as Indicative of Primitive and Mature Characteristics</th>
<th>Per cent of Nine Children Passing These Items</th>
<th>Per cent of Goodenough's Original Group Passing These Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December Test</td>
<td>May Test</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4c.</td>
<td>37</td>
<td>28</td>
</tr>
<tr>
<td>14c.</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>6a.</td>
<td>50</td>
<td>71</td>
</tr>
<tr>
<td>17a.</td>
<td>62</td>
<td>71</td>
</tr>
<tr>
<td>6b.</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>11a.</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>9c.</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>14f.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14c.</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>14d.</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>7a.</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>7b.</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>7c.</td>
<td>87</td>
<td>100</td>
</tr>
<tr>
<td>7c.</td>
<td>87</td>
<td>100</td>
</tr>
<tr>
<td>15b.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14b.</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>18b.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16c.</td>
<td>50</td>
<td>28</td>
</tr>
<tr>
<td>17b.</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

a: Accelerated  
b: Normal  
c: Retarded
by one hundred per cent of the children. The greatest disagreement was found on Pair VIII. One hundred per cent of the children passed item 7c while no children in this group passed item 15b on the May test. The results were the same on the December test except only eighty-seven per cent passed item 7c. The fact that only one child passed item 14b on the December test and that no child passed the item on the May test along with complete failure on item 18b on both tests is probably due to the fact that these items are rarely passed by retarded groups of this age level.

Indication of uneven mental development is found where children pass a great many individual items of the pairs but few pairs. If uneven mental development is evidence of personality maladjustment, it is possible that the child who passes the greatest number of items and at the same time, the fewest number of pairs, would make the highest score on the Haggerty-Olson-Wickman Behavior Rating Schedule. The number of single items passed and the number of pairs passed are compared in Table 9 with the scores of the pupils on the Haggerty-Olson-Wickman Behavior Schedule.

Pupil D succeeded on more individual items, meanwhile failing the corresponding paired items, than any other child in the group. He passed four on the December test and six items on the May test.

Pupils E and G each succeeded on five items, missing the other member of the pairs, on the December test, and three and four, respectively, on the May test.


<table>
<thead>
<tr>
<th>Pupils</th>
<th>Number of Single Items Selected by Berrien Exclusive of Complete Pairs Passed</th>
<th>Pairs of Items Selected by Berrien Passed by Pupils</th>
<th>Scores on Haggerty-Olson-Wickman Behavior Rating Schedules A and B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December Test</td>
<td>May Test</td>
<td>December Test</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>_c</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>_</td>
<td>4</td>
<td>_</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>4</td>
<td>_</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

*March Rating  
*June Rating  
*No available scores

Using Berrien's hypothesis, Pupil D should be the least well adjusted with Pupils E and G coming next. Pupil D, however, was the best adjusted child according to the scores on the Haggerty-Olson-Wickman Behavior Rating Schedules. Pupil D had the ability to represent and draw with good motor coordination, but at the same time, he omitted essential parts such as the neck, probably because he could not grasp all the details with the intelligence capacity he possessed.
Pupil G was next to the poorest adjusted child in the group as rated on Schedule B on the Haggerty- Olson-Wickman Behavior Rating Schedule. He was making the transition from full face to profile drawing and did not have the modeling of the face or the correct placement of the ear. His May drawing was less primitive than the December test drawing, and he passed twice as many pairs of items in May as he did in December. Since his score on Schedule B varied one point more on the June rating of Schedule B than on the March rating, his variance in the number of items passed seemed to come from development of ability to draw rather than to better personality development.

Pupil E did not draw well and missed items involving coordination. She did include most of the essential features except the ears. She ranked seventh on Schedule A of the Haggerty- Olson-Wickman Behavior Rating Schedules and fourth on Schedule B.

Berrien noticed a recurrence of failure on particular items in the Goodenough Draw-A-Man Intelligence Test in the two abnormal groups studied. Drawings made by post-encephalitis children were characterized by failure to receive credit on these items in the Goodenough test: 4c, 6a, 6b, 8a, 9a, 9c, 9d, 9e, 10b, 10c, 11b, 12d, 12e, 14c, 14d, and 17b. He found that psychotics often failed on these items: 9a, 9b, 9c, 9d, 9e, 14c, 14d, 14e, 16b, 17a, and 17b.  

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9See Appendix A for definition of items, pp. 85-87.

10Berrien, op. cit., p. 146.
Table 10 shows the number of these items which characterized the abnormal groups on which the pupils in this study failed. Their scores on the Haggerty- Olson-Wickman Behavior Rating Schedule are included in order that it might

**TABLE 10**

**NUMBER OF FAILURES BY NINE CHILDREN IN THIS STUDY ON ITEMS FROM THE GOODENOUGH DRAW-A-MAN INTELLIGENCE TEST FOUND BY BERRIEN TO CHARACTERIZE THE PSYCHOPATHIC GROUP AND THOSE THAT CHARACTERIZE THE POST-ENCEPHALITIS GROUP ON THE GOODENOUGH TESTS TAKEN IN DECEMBER AND IN MAY COMPARED WITH THEIR SCORES ON THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULES A AND B**

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Number of Failures on Items from Goodenough Test Characterizing Psychopathic Group</th>
<th>Number of Failures on Items from Goodenough Test Characterizing Encephalitis Group</th>
<th>Scores on the Haggerty- Olson- Wickman Behavior Rating Schedules A and B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December</td>
<td>May</td>
<td>December</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>B</td>
<td>11</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>C</td>
<td>-c</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>E</td>
<td>6</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>F</td>
<td>10</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>G</td>
<td>9</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>H</td>
<td>7</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>I</td>
<td>9</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

March Rating, June Rating, No score available
be determined whether or not failure on these items in a normal group of children would tend to go with a high score on these schedules.

From this group of normal children it is found that the child who made the greatest number of failures, Pupil B, ranked fifth and sixth on Schedule A and seventh on Schedule B. Pupil F ranked second in the number of failures; third on Schedule A and sixth on Schedule B. These items characterized the psychopathic group.

Pupil I, who ranked fourth on the number of failures on items characterizing the psychopathic group and third on the number of failures in the items on which the encephalitis group failed most often, also ranked ninth on all except the June rating of Schedule A when he ranked eighth.

Pupil G showed the greatest amount of variation in the number of failures of those characterizing the encephalitis group. His number of failures was 12 on the December test and 7 on the May test. His rank was third in the traits characterizing the psychopathics; that is, he made the third highest number of failures, and fifth in the traits characterizing the encephalitis group. On Schedule B his rank remained at eight, but his rank on Schedule A varied from six to nine.

In this group children who made a large number of failures on the items which Berrien found to characterize the psychopathic group also failed on a large number of items that characterized the encephalitis group.
The four children who made the highest number of failures on these items made the four highest scores on Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules. Their ranks on Schedule A varied more widely.

Drill includes the following items on his Abbreviated Scale: 4c, 5a, 5b, 6a, 7a, 7d, 8a, 8b, 9a, 9d, 10a, 10c, 12c, 12e, 13, 14a, 14c, 14d, 14e, and 14f.\textsuperscript{11}

Table 11 gives the scores of the pupils in this study on the Drill Abbreviated Form of the Goodenough Draw-A-Man Intelligence Test and their scores on the Haggerty-olson-Wickman Behavior Rating Schedules A and B.

Pupil E also made the greatest number of failures on this scale since he made the lowest score. Pupil F made the second greatest number of failures. Pupil E made the fewest number of errors since her mean score was higher than that of any other child. Pupil G made the highest score in the group on the May test, but his mean score was lower than that of Pupil E. Pupil I varied more in the number of errors made on the test than any other pupil. Pupil D made the same score on both tests. Pupils A, C, and H were not compared since they only had one test score.

When the rank of the children on this scale was compared with their rank on Schedule B of the Haggerty-olson-Wickman Behavior Rating Schedules, no relationship was found.

\textsuperscript{11}\textit{Drill, op. cit., p. 297.}
TABLE 11

scores of none children on the Brll abbreviAted form of the Goodenough Draw-a-man intelligence test on the Goodenough tests taken in december and May compared with their scores on the Haggerty Olson-Wickman behavior rating schedules A and B

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Scores on the Brll Abbreviated Scale of the Goodenough Test</th>
<th>Scores on the Haggerty-Olson-Wickman Behavior Rating Schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December</td>
<td>May</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>-c</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>E</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>G</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>H</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>I</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

March Rating  June Rating  No scores available

Berrien found that item 13 on the Goodenough Draw-a-man Intelligence Test often appeared in psychopathic drawings. Item 13 is scored successfully when a heel is indicated on the figure. Pupils G and I drew heels on their figures on both tests. Pupil D is credited with this item although his figure is drawn in full-face because the feet are shown in perspective. Pupil B on the December test and Pupil E on the May test show heels on their men. Pupils B, G, and I rank seventh, eighth, and ninth.

12 Berrien, op. cit., p. 146.
13 Goodenough, op. cit., p. 104.
respectively, on Schedule B. Pupil E ranks fourth on Schedule F but seventh on Schedule A. Again Pupil D is an exception.

In this study an indication of a heel on the drawing on the Goodenough Draw-A-Man Intelligence Test tends to go with poor adjustment as measured on the Haggerty-Olson-Wickman Behavior Rating Schedules if the foot is shown in profile.

The masculine and feminine traits listed by Goodenough\(^\text{14}\) are totaled for each child on Table 12. The number of individual items found in the drawings on the Goodenough Draw-A-Man Intelligence Test and in all other figures drawn by the children are recorded.

In this group Pupil G shows the most masculine characteristics. His drawing on the December Goodenough Draw-A-Man Intelligence Test shows four masculine traits. There were 25 masculine traits in all of his drawings. Profile drawing, drawing of accessories, and motion in the figures are the masculine traits most common in his drawings.

Thirteen, which was the most feminine traits found in any child's drawings, were shown by Pupil F, a boy, and Pupil H, one of the girls in the study. Pupil F's figures had arms and feet that were too small for the trunk. He often drew negroes with curly hair. Curly hair is classed

---

\(^{14}\)Ibid., p. 61.
# Table 12

Number of the Seven Masculine and Seven Feminine Traits Listed by Goodenough Shown in the Drawings on the Goodenough Draw-a-Man Intelligence Test and in Other Figures Drawn by Nine Children in This Study

<table>
<thead>
<tr>
<th>Sex Characteristics Listed by Goodenough</th>
<th>Pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Masculine Characteristics</td>
<td></td>
</tr>
<tr>
<td>Head and feet in profile</td>
<td>1</td>
</tr>
<tr>
<td>Accessory present</td>
<td>1</td>
</tr>
<tr>
<td>Trousers transparent</td>
<td></td>
</tr>
<tr>
<td>Heel present</td>
<td>1</td>
</tr>
<tr>
<td>Figure in motion</td>
<td></td>
</tr>
<tr>
<td>Arms below knee</td>
<td></td>
</tr>
<tr>
<td>Necktie shown</td>
<td></td>
</tr>
<tr>
<td>Total masculine characteristics</td>
<td>1</td>
</tr>
</tbody>
</table>

| Feminine Characteristics                |     |     |     |     |     |     |     |     |     |
| Pose two dots only                      |     |     |     |     | A |     | B |     |     |
| Feet less than 1/20 total body length   | 1 | 1 | 1 |     | 4 |     |     |     |     |
| Eyes showing two or more details        | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 |
| Hair very smooth or neatly parted       | 1 |     |     |     |     |     |     |     | 2 |
| "Cupid's bow" mouth                     | 1 | 2 |     |     |     |     |     |     | 2 |
| Cheeks shown                            |     | 1 |     |     |     |     |     |     | 1 |
| Trousers flaring                        |     |     |     |     |     |     |     |     | 1 |
| Head larger than trunk                  |     |     |     |     |     |     | 1 | 1 | 1 | 2 |
| Arm length less than head length        | 2 | 5 | 1 | 1 | 1 | 5 | 2 | 1 | 1 |
| Curly hair                              | 1 |     |     |     | 3 | 3 | 1 | 1 | 1 |
| Legs not more than 1/4 trunk length     |     |     |     |     |     |     |     |     | 1 |
| Total feminine characteristics          | 2 | 1 | 2 | 6 | 1 | 2 | 2 | 4 | 1 | 7 | 0 | 1 | 3 | 1 | 7 | 3 | 10 | 1 | 5 |

*Drawings on the Goodenough Draw-a-Man Intelligence Test.*

*Spontaneous Drawings.*
as a feminine trait. Pupil H's figures had curly hair, a
great deal of eye detail, and a "cupid's bow" mouth.

The total number of masculine and feminine characteristics is not so valuable until the relationship between the
two has been established as in the masculine-feminine quo-
tient derived by Berrien in which the total frequency of
masculine characteristics is divided by the total frequency
of feminine characteristics. He finds:

For the normal group taken from Goodenough's table
this procedure gives a quotient for the boys of 3.51
and for the girls of .58. Thus as the quotient rises
masculinity is indicated and conversely as it decreases
feminity is indicated.15

Table 13 shows the masculine-feminine quotients for the
pupils in this group on the Goodenough Draw-A-Man Intelli-
gence Tests and on the spontaneous drawings.

Pupil F still showed the greatest preponderance of
feminine characteristics. He was rated as slightly effemi-
nate on the June rating of Schedule B, Division II, item 13,
of the Haggerty-Olson-Wickman Behavior Rating Schedule al-
though he was rated as having average boy characteristics
on this item on the March rating.

The two girls in the study, Pupils E and H, rank second
and third, respectively, on the amount of feminity shown
since their masculine-feminine quotients are less than the
quotient of any pupil except Pupil F.

Pupil G has the highest masculine-feminine quotient

TABLE 13

MACULINE-FEMININE QUOTIENT OF DRAWINGS BY NINE CHILDREN
IN THIS STUDY ON GOODENOUGH DRAW-A-MAN INTELLIGENCE
TESTS AND ON SPONTANEOUS DRAWINGS WITH MEAN MACULINE
AND FEMININE QUOTIENTS AND CLASS MEAN

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Masculine-Feminine Quotient on Goodenough Test</th>
<th>Masculine-Feminine Quotients on Spontaneous Drawings</th>
<th>Mean Masculine-Feminine Quotients</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>.50</td>
<td>4.00</td>
<td>1.66</td>
</tr>
<tr>
<td>F.</td>
<td>1.00</td>
<td>1.16</td>
<td>1.12</td>
</tr>
<tr>
<td>C.</td>
<td>1.00</td>
<td>4.00</td>
<td>3.00</td>
</tr>
<tr>
<td>D.</td>
<td>.50</td>
<td>1.00</td>
<td>.83</td>
</tr>
<tr>
<td>E*</td>
<td>1.00</td>
<td>.42</td>
<td>.50</td>
</tr>
<tr>
<td>F.</td>
<td>3.00</td>
<td>.07</td>
<td>.20</td>
</tr>
<tr>
<td>G.</td>
<td>6.00</td>
<td>2.71</td>
<td>3.57</td>
</tr>
<tr>
<td>H*</td>
<td>.33</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>I.</td>
<td>4.00</td>
<td>.20</td>
<td>.83</td>
</tr>
</tbody>
</table>

Mean Class: 1.66 1.00 1.12
Mean Boys: 2.28 1.87 1.61
Mean Girls: .66 .61 .59

*Girls - All other pupils are boys.

thereby signifying that his drawings were the most masculine. He was rated as having average boy qualities on both ratings on Schedule B, Division II, item 12, of the Haggerty-Olson-Wickman Behavior Rating Schedule.

The mean masculine-feminine quotient of the girls of this group is nearly parallel to that found in Goodenough's group, the quotient for this group being .59 while the quotient for the girls in the Goodenough study was .58.

The masculine-feminine quotient of 1.61 for the boys
in this study is considerably less than the masculine-feminine quotient of 3.51 found for boys in the Goodenough group.

Comparison of the Intelligence Quotients on the Goodenough Draw-A-Man Intelligence Test with the Intelligence Quotients Derived from the Kuhlmann-Anderson Intelligence Test

The scores on the Goodenough Draw-A-Man Intelligence Tests, the Kuhlmann-Anderson Intelligence Test, and the scores on the Haggerty-Olson-Wickman Behavior Rating Schedules A and B are shown in Table 14.

**TABLE 14**

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Intelligence Quotients on the Goodenough Draw-A-Man Intelligence Test</th>
<th>Intelligence Quotients on the Kuhlmann-Anderson Intelligence Test</th>
<th>Scores on the Haggerty-Olson-Wickman Behavior Rating Schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December</td>
<td>May</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>102</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>B.</td>
<td>54</td>
<td>54</td>
<td>69</td>
</tr>
<tr>
<td>C.</td>
<td>-</td>
<td>81</td>
<td>113</td>
</tr>
<tr>
<td>D.</td>
<td>90</td>
<td>99</td>
<td>76</td>
</tr>
<tr>
<td>E.</td>
<td>118</td>
<td>102</td>
<td>120</td>
</tr>
<tr>
<td>F.</td>
<td>66</td>
<td>76</td>
<td>64</td>
</tr>
<tr>
<td>G.</td>
<td>73</td>
<td>87</td>
<td>61</td>
</tr>
<tr>
<td>H.</td>
<td>100</td>
<td>-</td>
<td>103</td>
</tr>
<tr>
<td>I.</td>
<td>61</td>
<td>76</td>
<td>72</td>
</tr>
</tbody>
</table>

*a* March Rating  
*b* June Rating  
*c* No score available
The greatest difference between the Goodenough Test score and the Kuhlmann-Anderson Test was in the case of Pupil C. On the Haggerty- Olson-Wickman Behavior Rating Schedule A he was rated first and on Schedule B he was rated as second best adjusted. However, from accounts given by his mother and brother he seemed to have been much better adjusted at school than at home. He was reported to have temper tantrums and to always get his way.

The day he took the Goodenough Test he had become very angry with the teacher because he could not have his money refunded from the lunchroom after his brother had turned it in. He went to the table but refused to eat. Although he did not draw especially well, the drawing on his test was inferior to his best efforts.

Pupils B and E are the other children on the May test that made lower on their Goodenough Test than on their Kuhlmann-Anderson Test. Pupil B was of subnormal intelligence; Pupil E had the highest intelligence quotient of the pupils in this group.

On the December test Pupils H and I also made less on the Goodenough Test than on the Kuhlmann-Anderson Test, making three and eleven points less, respectively.

Pupil G, followed by Pupil D, had the greatest differences in favor of the Goodenough Test. Pupil G made twelve points more on the December test and twenty-six points more on the May Goodenough Draw-A-Man Intelligence Test than he
made on the Kuhlmann-Anderson Intelligence Test. Pupil D made fourteen points more on the December Goodenough Test and twenty-three points more on the May Goodenough Test than he made on the Kuhlmann-Anderson Test.

Pupil D was the best adjusted child in the class as measured on Schedule A and the second best as measured on Schedule P. On the other hand, Pupil C ranked next to the poorest on Schedule B and sixth and ninth on Schedule A of the Haggerty- Olson-Wickman Behavior Rating Schedules.

We may conclude that, although it has been found that the child who made higher on the Goodenough Draw-A-Man Intelligence Test than on other intelligence tests is likely to be better adjusted than a child who made lower,16 it does not seem to be the case in this study.

Results of Ratings on the McCarty Drawing Scale

The ratings of a typical specimen from each of the three groups of spontaneous drawings, persons, houses, and compositions, of the children in this study on the McCarty Drawing Scale compared with their scores on the Goodenough Draw-A-Man Intelligence Tests are shown in Table 15.

Only Pupil F's mean score on the McCarty Drawing Scale ranked the same as his mean rating on the Goodenough Draw-A-Man Intelligence Tests when compared with other members

16Drill, op. cit., p. 300.
TABLE 15


<table>
<thead>
<tr>
<th>Pupils</th>
<th>Ratings on McCarty Drawing Scale</th>
<th>Scores on Goodenough Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>Houses</td>
</tr>
<tr>
<td>A</td>
<td>17.6</td>
<td>19.5</td>
</tr>
<tr>
<td>B</td>
<td>12.2</td>
<td>9.6</td>
</tr>
<tr>
<td>C</td>
<td>17.6</td>
<td>14.5</td>
</tr>
<tr>
<td>D</td>
<td>17.6</td>
<td>17.9</td>
</tr>
<tr>
<td>E</td>
<td>18.5</td>
<td>17.0</td>
</tr>
<tr>
<td>F</td>
<td>12.5</td>
<td>18.2</td>
</tr>
<tr>
<td>G</td>
<td>17.6</td>
<td>13.3</td>
</tr>
<tr>
<td>H</td>
<td>17.6</td>
<td>19.5</td>
</tr>
<tr>
<td>I</td>
<td>16.4</td>
<td>16.0</td>
</tr>
</tbody>
</table>

aTest administered in December.
bTest administered in May.
cNo score available.

of the group. Pupil A rated second on both the mean rating of the McCarty Scale and the test score of the Goodenough Draw-A-Man Intelligence Test. Pupil C ranked fifth on the same ratings as Pupil A. There was only one Goodenough Draw-A-Man Intelligence Test score available for each.

Pupil B made lowest on all of the ratings on the McCarty Drawing Scale and the lowest scores on the Goodenough Draw-A-Man Intelligence Tests.

The rank of Pupil C varied most. He was ranked eighth on the McCarty Drawing Scale and fourth on the Goodenough Draw-A-Man Intelligence Tests scores.
With the exception of Pupils E, G, and H the rank of the mean rating of pupils in this study on the McCarty Drawing Scale for persons, houses, and compositions is the same or within one rank of their mean scores on two Goodenough Draw-A-Man Intelligence Tests.

The possible explanation of these exceptions may be seen in Table 16, which gives their intelligence quotients from the Goodenough Draw-A-Man Intelligence Tests, their intelligence quotients from the Kuhlmann-Anderson Intelligence Tests.

### Table 16

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Mean Rating of Persons, Houses, and Compositions on the McCarty Rating Scale</th>
<th>Intelligence Quotients from Goodenough Draw-A-Man Test</th>
<th>Intelligence Quotients from Kuhlmann-Anderson Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>十二月</td>
<td>五月</td>
<td>十二月</td>
</tr>
<tr>
<td>A.</td>
<td>18.0</td>
<td>--</td>
<td>102</td>
</tr>
<tr>
<td>B.</td>
<td>10.9</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>C.</td>
<td>16.3</td>
<td>--*</td>
<td>81</td>
</tr>
<tr>
<td>D.</td>
<td>17.8</td>
<td>90</td>
<td>99</td>
</tr>
<tr>
<td>E.</td>
<td>17.0</td>
<td>118</td>
<td>102</td>
</tr>
<tr>
<td>F.</td>
<td>15.0</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>G.</td>
<td>14.7</td>
<td>73</td>
<td>57</td>
</tr>
<tr>
<td>H.</td>
<td>19.1</td>
<td>100</td>
<td>--</td>
</tr>
<tr>
<td>I.</td>
<td>15.2</td>
<td>61</td>
<td>76</td>
</tr>
</tbody>
</table>

*No scores available.*
Test, and their mean ratings on the McCarty Drawing Scale for persons, houses, and compositions.

McCarty quotes Kerschensteiner as saying that "graphic skill generally goes with intellectual ability, but the converse is not necessarily true: intellectual ability does not go with ability in drawing."\(^{17}\)

If we accept Kerschensteiner's hypothesis, we see that although Pupil E has the highest intelligence quotient in the group she does not necessarily rank first in drawing ability. She ranks fourth.

Pupil G, who ranks next to last on the McCarty Scale, has the lowest intelligence quotient in the group on the Kuhlmann-Anderson Intelligence Test. However, he ranks fourth in the group on the Goodenough Draw-A-Man Intelligence Tests as we have seen. This is due to the fact that he added a great mass of detail to his men on the Goodenough Tests which made his score higher since the test is scored on the completeness of a single drawing. His low score on the McCarty Scale is due to lack of organization of a similar multitude of details.

Pupil H did not necessarily, then, rank the same on the McCarty Scale as on the Goodenough Scale. She was the other exception mentioned.

Only Pupil I ranked the same on the Kuhlmann-Anderson

\(^{17}\)McCarty, op. cit., p. 84.
Test as on the McCarty Scale. Pupils F and G varied within one rank. The others varied two or three ranks.

We may conclude that the drawing ability as measured on the McCarty Scale usually goes with comparable scores on the Goodenough Test but varies more widely with the results on the Kuhlmann-Anderson Test thus bearing out Kerschensteiner's hypothesis.

**Stages of Profile Drawings Found in Drawings by Children Included in This Study**

A discussion of the transitional stages between full-face drawings and profile drawings such as can be expected in children of this age is desirable in order to see the normal growth and probable abnormal developments.

A tabulation of the drawings of children in this group with reference to direction the figure is facing along with the chronological age of the child and his hand preference is presented in Table 17.

The older children in this group should be in a transitional stage. Pupil I's age is 13-2. He had begun to make a change from full face to profile drawing. On his December Goodenough Draw-A-Man Intelligence Test his figure had its face and feet turned left but its trunk was drawn in full-view. Most of his drawings were still full-face.

The age of Pupil G was 11-8. He was also in the transition stage. He had five profile drawings with face and feet facing right and a trunk drawn from a front view. One
TABLE 17
NUMBER OF FULL FACE, TRANSITIONAL STAGES, PROFILE DRAWINGS,
CHRONOLOGICAL AGE, AND HAND PREFERENCE OF
NINE CHILDREN IN THIS STUDY

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Full Face - Feet Straight Ahead or Turned in Opposite Direction</th>
<th>Full Face - Feet Turned Left</th>
<th>Full Face - Feet Turned Right</th>
<th>Profile Turned Left</th>
<th>Profile Turned Right</th>
<th>Profile Turned Left Body Front</th>
<th>Profile Turned Right Body Front</th>
<th>Chronological Age</th>
<th>Hand Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 - 5</td>
<td>R</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>11</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>11 - 4</td>
<td>R</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 - 5</td>
<td>L</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 - 1</td>
<td>R</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>7</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>9 - 3</td>
<td>R</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>2</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>9 - 10</td>
<td>L</td>
</tr>
<tr>
<td>G</td>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>11 - 8</td>
<td>L</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td>9 - 4</td>
<td>R</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>12 - 2</td>
<td>R</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>39</td>
<td>11</td>
<td>8</td>
<td>15</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

The figure on the May Goodenough Test was facing left with a front view of the trunk. His most frequent errors were drawing the arms from the line that forms the back and not drawing the partial view of the legs from the side.

A chronological age of 11-4 would indicate the appearance of some change to profile drawing in the case of Pupil B. However, his drawings were still crude, drawn in full-face. He was a dull child with an intelligence quotient on the Kuhlmann-Anderson Test of 59.
The girls in this study showed little interest in profile drawing, which has been listed as a masculine trait by Goodenough. Pupil E drew two figures in profile, and the figure on the December Goodenough Test had its feet turned to the right. Pupil H had eleven full-face drawings, three profile drawings, and two drawings with the feet turned to the left and two turned to the right.

Only Pupil A made a profile drawing without errors. His chronological age was 9-5.

Pupils C, F, and G were left-handed. All were "hook-writers"; that is, they curved their hands around when they wrote. Pupil G often made reversals in numbers.

Burt suggested that right-handed children draw profiles facing left and conversely, left-handed children draw profiles facing right. Pupil F had no profile drawings. All were full-face drawings with rudimentary feet turned left. Pupil C drew five profile figures, four of which turned toward the left. Both were left-handed.

Pupil G, on the other hand, seems to bear out Burt's hypothesis that left-handed children draw profiles facing right. Sixteen of his profiles faced right while only three faced left.

No right-handed child drew a profile facing right. Four drew full-face drawings with the feet turned right.

---

18 Goodenough, op. cit., p. 61.

We may conclude that the data in this study substantiate the hypothesis that the profile drawings of a child face in the opposite direction of his hand preference. However, in transitional stages the body parts may turn in different directions.

Discussion of Harms' Line Analysis Method as Used in This Study

The results of this test varied from almost no response in the case of Pupil A, Figure 1, through pictorial representation by Pupils E and H, shown in Figures 3 and 5, to a good representation of feeling by the direction, width, and value of line in the case of Pupil D, Figure 2.

As it can be seen from Figure 1, Pupil A made no attempt to do anything more than underline "happy" and "tough" and draw a vertical line beside them.

Pupil D in Figure 2 wrote the words in different sizes, "angry" being the largest. "Tired" was sprawled out and written lightly. All of his lines were continuous horizontals or slight variations. An almost solid mass of lines indicated "tough" while fine, trembly lines are descriptive of "sick." "Happy" was represented by one horizontal line.

Pupils E and H, Figures 3 and 5, drew figures participating in activities appropriate to the word. Pupil H's figures are larger and fill the page better than Pupil E's. They have more elaborate hair and skirts, and each has a cartoon balloon filled with conversation. Only "sick" in
Pupil E's has any conversation to indicate the word. Pupil H's figures were like Pupil E's except "sad" and "tired." The girls omitted "tough."

Pupil G's lines in Figure 4 were somewhat erratic and seemed to have little differentiation. There are longer, heavier, and more numerous lines for "angry" than for any other word. There are lighter and shorter lines for "sad" and "sick." "Tired" was omitted.

"Angry" in Figure 6 of Pupil I has fewer and lighter lines than the representation of the word by the other pupils. The two figures after "angry" are apparently meaningless for this test. "Happy" is represented by seven horizontal lines. He had suggested that "tough" be added to the list. He drew a picture of a man with dumb-bells for "tough." He did not draw any lines after "sick" and "sad" because he declared he never felt them. He omitted "tired."

It may be concluded that where the child uses pictorial representation as in the case of Pupils E and H the activity the word calls to mind may give one an idea of the child's associations. For example, for "sad," Pupil E drew a figure lying face down on the bed while Pupil H's figure is standing, and from the conversation added, apparently worried.

In the analysis of Pupil D we see the expected reaction to each word. "Angry" is represented by heavy lines
and "sad" is denoted by light lines. It will be recalled that Pupil D was rated the best adjusted child in the group.

Pupil I's test is interesting from the standpoint of omissions and his explanation of them although the significance is not clear. The fact that he is a bully may explain his emphasis on "tough."

Examination of 253 Drawings Collected in This Study Using Schmidl-Waehner's Normal Criteria

The formal criteria listed by Schmidl-Waehner are used as the basis for analysis of spontaneous drawings by the children in this study and the results are recorded in Table 18.

The children in this study were not allowed to cut the size and shape of paper which they preferred for their drawings but usually used paper size 9 x 12 inches. Sometimes the tablet paper, 5 1/2 x 8 1/2 inches, was used.

Pupil G pasted two sheets of 8 1/2 x 11 inches together and painted a picture with water colors for a moving picture. He also used a large sheet of tracing paper given him by another child.

Pupil B used tablet sheets 3 x 5 inches. He cut a notch in the margin of one and cut another picture about the same size in a curve hexagonal shape from a sheet of theme paper.

The special format of Pupil D's drawing was cut so that it could be put in the sand table. Pupils A and C
TABLE 18

TABULATION OF FORM ELEMENTS LISTED BY SCHMIDL-WAHERNER AS FOUND IN 253 SPONTANEOUS DRAWINGS COLLECTED FROM NINE FOURTH GRADE CHILDREN DURING THE SCHOOL YEAR, 1942-1943

<table>
<thead>
<tr>
<th>Form Elements Listed by Schmidl-Waehner for Analysis of Drawings</th>
<th>Number of Times Each Form Element Occurred in Each Pupil's Drawings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Size</td>
<td></td>
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<tr>
<td>Small.</td>
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</tr>
<tr>
<td>Large.</td>
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<tr>
<td>Format</td>
<td></td>
</tr>
<tr>
<td>Long.</td>
<td>1</td>
</tr>
<tr>
<td>Square.</td>
<td></td>
</tr>
<tr>
<td>Special.</td>
<td>2</td>
</tr>
<tr>
<td>Rigid Symmetry.</td>
<td>1</td>
</tr>
<tr>
<td>Balance.</td>
<td>2</td>
</tr>
<tr>
<td>Unbalance.</td>
<td></td>
</tr>
<tr>
<td>Rhythm.</td>
<td></td>
</tr>
<tr>
<td>Motion Elements.</td>
<td>6</td>
</tr>
<tr>
<td>Line Drawings.</td>
<td>19</td>
</tr>
<tr>
<td>Colored Drawings.</td>
<td>10</td>
</tr>
<tr>
<td>Yellow.</td>
<td>3</td>
</tr>
<tr>
<td>Red.</td>
<td>8</td>
</tr>
<tr>
<td>Blue.</td>
<td>7</td>
</tr>
<tr>
<td>Black.</td>
<td>1</td>
</tr>
<tr>
<td>White.</td>
<td></td>
</tr>
<tr>
<td>Mixed.</td>
<td></td>
</tr>
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</table>

made long, slender papers. Pupils E and H used square formats.

Since the pupils were not allowed complete freedom in selecting the size and shape of format, this criterion is not so valuable in this study. The small number of examples present are not sufficient to use as a basis for determining a real preference in size and shape of format.
The only drawing showing rigid symmetry was a flower composition by Pupil E. Schmidl-Waehner declares this is a characteristic of depressive cases.20

The four children who had balance in their pictures, Pupils A, D, E, and H, also made the highest ratings on the McCarty Drawing Scale.21 The ranks of these pupils on Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules were third, second, fourth, and fifth, respectively.22 In general, we may say with Schmidl-Waehner that the best adjusted children showed a "rather vivid but well-balanced distribution of form elements"23 in their pictures.

However, Pupil C, who was rated first on Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules, had the most pictures showing unbalance. He had the lowest rating on the McCarty Drawing Scale of the group of children who had normal or above normal intelligence. There was a greater difference between his Goodenough Draw-A-Man Intelligence Test and his Kuhlmann-Anderson Intelligence Test24 than between the results of these two tests for the other children.

Pupil G had the highest number of motion elements

20Schmidl-Waehner, op. cit. 21See Table 15, p. 56.
22See Table 6, p. 34.
23Schmidl-Waehner, op. cit., p. 98.
24See Table 14, p. 53.
followed by Pupils I, C, D, H, A, and B in the order named. Pupils E and F were not credited with any motion elements. Pupil H had more motion elements in her drawings than Pupil E, the other girl in the group. Although Pupil B is credited with pictures which show motion, none of his human figures show movement.

Schmidl-Waehner finds a relationship between the intelligence of a child and the number of motion elements in his pictures, the gifted children having the highest number while the feebleminded have the lowest. There is a reverse relationship between intelligence and motion elements in this study for two pupils. Pupil G, who had the highest number of motion elements in his pictures, had the lowest intelligence quotient on the Kuhlmann-Anderson Intelligence Test. Pupil E, who had the highest intelligence quotient on the Kuhlmann-Anderson Test, had no motion elements in her drawings. The ranks of the others in regard to motion elements are either one rank higher or one rank lower than their rank on the Kuhlmann-Anderson Intelligence Test. There is, however, an exception in the case of Pupil B, whose ranks on the two are the same, and in the cases of Pupils H and I, who were low in motion elements and high in intelligence quotient and vice versa.

The normal children in Schmidl-Waehner's study had pictures with many motion elements. Depressives showed a

decrease of such elements, and psychotics showed extreme variations in the number of motion elements present.\textsuperscript{26}

Pupil G showed more than twice the number of motion elements in his drawings as did Pupil I, the child who had the next highest number. One of his problems of frequent occurrence on Schedule A of the Haggerty-Olson-Wickman Behavior Rating Schedules was marked over-activity. On Division IV, emotional traits, Schedule B, he was rated as having strong and frequent changes of mood, being impulsive, explosive, and easily amused. Despert says that such aggressiveness in the drawings of the over-active child is a compensation for fear.\textsuperscript{27} However, the behavior of Pupil G indicated no such fears.

On the other hand, Pupils E and F, who had no motion elements in their drawings, are described on Division IV, emotional traits, of Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedule as being over-anxious, very cautious, and needing reassurance; and as having rare changes of mood, being generally dispirited, negativistic, and apprehensive, respectively.

The Pupils C, D, and A, who had a moderate number of motion elements, were rated as the best adjusted on Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules.

In this study, the pupil credited with the highest

\textsuperscript{26}Ibid.

\textsuperscript{27}Despert, \textit{op. cit.}, pp. 72-73.
number of motion elements is unstable; the pupils with the lowest number are over-anxious and generally depressed. The best adjusted pupils deviate three points or less from the class mean of motion elements.

Pupil A made nearly two thirds of his drawings without color. What color he used was put on very lightly. Many of his drawings were made with ruler and pencil. He used red in more pictures than any other color, then blue, yellow, and black.

Pupil B used no other color in two drawings in which he used red. He covered three of his drawings with crayon marks of many different colors. He used five different colors on the body of one man. Pupil B used none of the colors listed.

Pupil C had more pictures in which blue was used than those in which other colors were used. The number in which red was used was next and then yellow. Pupils D and H used these colors in the same proportion. Pupil D used black in one picture. Pupil H used a number of colors mingled for the skirt of a little girl.

Pupil E declared that white was her favorite color and that pink was second choice. She used yellow in more pictures than any other color and the same number with red and blue. White was used for clouds in landscapes.

Pupil F used black in more drawings than any other color with blue about the same. He used yellow in half as many pictures as he used black, and red in fewer pictures
than he used yellow. Pupil F obviously concealed his preference for black by declaring it was his favorite for cars. In painting a picture in his favorite colors he used red and green.

At the beginning of school he painted his picture of a man all in black. He drew two black cats for his choice of animals. In another picture of three armless persons in November, he made the center figure a negro. He drew four pencil drawings and shaded them with pencil until they were black. His water color drawing in February had an inky blue sky and a brilliant red chimney, one of the few reds that he used. A flower drawing he did in January was fairly gay with yellow, green, orange, blue, and purple.

Pupil G used red in more drawings than any other color followed by blue, black, and yellow.

Pupil I has only one third of his drawings in line and the others in color. He declared that purple was his favorite color. He was the only child who used all of the colors listed in his drawings. He used black realistically for animals, smoke, wheels, and so on. He used red as much as black.

We see that in color choices Pupils C, D, and H appear to be like the normal children who, according to Schmidl-Waehner, use "yellow somewhat less than red and blue, very little black and almost no pure white."28 On Schedule A of

28 Schmidl-Waehner, op. cit., p. 98.
the Haggerty- Olson- Wickman Behavior Rating Schedules they ranked second, first, and fourth, respectively; they were ranked first, second, and fifth on Schedule B.

Pupils G and I used color in similar proportions, but they used somewhat more black. However, their use of black was for the outlines of objects or for objects of that color and was therefore not abnormal. They rank sixth and ninth, respectively, on the December rating of Schedule A of the Haggerty- Olson- Wickman Behavior Rating Schedules; ninth and eighth on the June rating. On the December and June ratings of Schedule B they ranked eighth and ninth.

Pupil B had apparently not yet learned how to use color or else became disgusted with his very limited ability to draw and used the color to cover up. Pupil A was weak in his use of color; he used it too lightly.

Pupil E's preference for white may indicate neurotic tendencies which do exist such as her worries and unnecessary fears.

Pupil F's excessive use of black seems to be abnormal. We have seen that he appears to have depressive traits.

Relation of Characteristics Found in Drawings to Personality Traits Revealed in Case Studies

Pupil A was exact in his drawings making them accurate as to detail. One third of his drawings were airplanes which are easily drawn mechanically. The light use of color grew out of his desire to make his pictures neat. He had
changed from full-face to profile drawings earlier than usual. He was ahead of the children in his group in solving problems in perspective.

His drawing lacked spontaneity and creativeness. It is probable that he consciously tried to imitate the manner of drawing which his sister, a senior in high school, used.

His desire for neatness in school papers grew, no doubt, from a wish to do well in his school work. He was always asking if this detail or the other would "count on his grade." He had done much better work in the first grade than he had done in the third and fourth grades. His father wanted his to do as well as he had formerly done. His disinterest in school work was due to his fear that he could not do as well as he should.

Most of Pupil B's drawings consisted of a stereotyped man including the figure on the Goodenough Draw-A-Man Intelligence Tests. It may have been that the form learned earlier persisted either because of little or no drawing instruction or because of lack of intelligence. This seems to be a case of automatism in a backward child as described by Goodenough.29

This arrested development on a lower level may account for his lower intelligence quotient of 54 on the Goodenough Draw-A-Man Intelligence Test compared with an intelligence quotient of 69 on the Kuhlmann-Anderson Intelligence Test.

---

The number of failures on paired items selected by Berrien was probably not significant since there was no change in the combination of primitive and mature characteristics from one picture to another.

He did not have any compositions; he seemed incapable of organizing the component parts into a whole. He lacked self-confidence and, recognizing his limited ability, he stayed with the automatic figure which he had learned and did not try to draw new figures.

Pupil C was consistently rated as being well-adjusted. The "halo effect" has already been discussed. The temper tantrum like the one he had on the day he took the Good-enough Draw-A-Man Intelligence Test points to an infantile method of reacting in order to get his own way. He may have regressed in his emotional development to gain some of the attention he would ordinarily not merit since he was a middle child in a large family. At school he received his share of attention; hence, the attacks were comparatively rare.

He could not draw well. He especially had trouble with human figures. His poor muscular coordination may have been a factor in his poor drawing.

He liked to draw airplanes and boats, but they were not as exact as Pupil A's. His over-activity showed in many of his pictures but not so much as in the case of Pupil C.
His interest in many things, especially in social studies, is probably accounted for by his rich background of travel and experiences which were superior to most of the children in the group.

Pupil D could draw fairly well, but he was not very original. His drawing ability probably accounts for his higher intelligence quotient of 90 on the December Good-enough Draw-A-Man Intelligence Test and 99 on the May test as compared with an intelligence quotient of 76 on the Kuhlmann-Anderson Intelligence Test. His ability to pass certain items while he failed others of the same maturity level may have been due to his above average ability to draw along with his lower intelligence quotient rather than to his personality maladjustment.

Although Pupil D was bashful and shy, he was not as shy as his older brothers. His shyness was apparently a family trait resulting from limited associations and isolation of farm life. His preference for animals probably came from his rural background.

Pupil E did not draw well. The static quality of her drawings may result from the inability to represent figures in motion as well as she could landscapes which she preferred to draw. She often refused to draw the subjects suggested in the art period declaring that she could not.

Three of her spontaneous drawings had such playground equipment as slides, swings, and horizontal bars as a part
of the composition. She may have drawn them to indicate a desire for more active play than was allowed her by her mother because of her heart ailment. None of the other children except Pupil B drew a similar picture.

It may have been that since her hair was straight and thin she had a desire to have extremely long, curly hair like the kind which she drew for all of her feminine figures. Pupil E was not very attractive.

Next to Pupil G, Pupil F had the lowest intelligence quotient on the Kuhlmann-Anderson Intelligence Test, 64. A case of automatism similar to that of Pupil B was noted. For instance, when he learned to draw a donkey, he used the same general outline on seven different sheets.

His feminine characteristics consisted of short arms, small feet, and curly hair, the latter characteristic being present on his drawings of negroes.

No specific basis for the use of black in his pictures is found. He was, however, generally dispirited, apprehensive, suspicious, and negativistic. He often thought that he was being discriminated against. In several pictures he logically used black to represent negroes.

His drawing of negroes may have stemmed from his past experiences with them in southeast Texas.

Pupil C drew a great deal, and his pictures were filled with action. He could not sit still long. There were ten pictures in which shooting occurred. Five were vivid battle scenes.
He was very observant and had a good memory for details which showed in his pictures of mechanical vehicles. These were usually a part of his everyday experiences such as the school bus, road grader, trucks, and airplanes.

He had as much ability to represent faithfully as did Pupil D. His lack of intelligence may account for his low score on the McCarty Scale. His intelligence quotients, 73 on the Goodenough Intelligence Test in December and 87 in May, show more variance than does any other child's with his Kuhlmann-Anderson intelligence quotient, 61.

His drawings were generally used to tell a story. He was disinterested in school work and his drawings were a means of escape to something more exciting.

Pupil H had no abnormal characteristics present in her drawings. She was not very original and probably got a number of her ideas from Pupil E. She showed some action in her pictures and her drawing ability was superior to Pupil E's, however. She was rated the highest on the McCarty Drawing Scale.

Pupil I's figures had exaggerated mouths, ears, hands, and arms. He had few drawings of machines, one airplane, a car, and two trucks. Except for the airplane picture there are no war scenes.

Since he lived on a farm, he filled his pictures with goats, chickens, and horses. His superior knowledge gained from observance of the habits and appearances of animals was shown in these pictures.
He was a good friend of Pupil D and drew several pictures similar to the ones drawn by Pupil D.

Summary

None of the drawings by children in this group on the Goodenough Draw-A-Man Intelligence Test are of the "verbalist type" or the "individual response type." The examples of drawings showing a flight of ideas seem to be due to lack of ability to draw in the case of Pupil C. In the other instances the oversight consisted of only one line.

A greater variation in success on pairs of individual items selected by Berrien as being of the same incidence in drawings than is found in this group would be necessary to indicate emotional instability. Since there are six pairs of items which fifty per cent or more of the normal children in this age group would not be expected to pass, this measure is not so valuable for diagnosis.

In this study the children who had the highest number of failures on the items Berrien found characterizing the psychopathic group also failed on a large number of items characterizing the encephalitis group. The ones who made the highest number of failures also made high scores on Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules.

Failures on the items on Brill's Abbreviated Scale correspond to the results on Berrien's items characterizing abnormal groups with the exception of Pupil D.
The drawing of a heel when the foot is shown in profile also tends to go with high scores on the Haggerty-Olson-Wickman Behavior Rating Schedules.

The drawings of children in this study show normal masculine and feminine characteristics except in the case of Pupil F.

In this study the variation between the intelligence quotients on the Goodenough Draw-A-Man Intelligence Tests and the intelligence quotients on the Kuhlmann-Anderson Intelligence Test does not necessarily indicate the degree of adjustment.

The ratings on the McCarty Drawing Scale correspond rather closely to the results on the Goodenough Draw-A-Man Intelligence Tests but not so closely with results of the Kuhlmann-Anderson Intelligence Test.

Many of the drawings were in a transitional stage, but the majority of the drawings turned in the opposite direction of the child's hand preference.

A line analysis reveals the child's associations and type of imagery.

The most valuable of Schmidl-Kahner's formal criteria for this study seemed to be balance, motion, and color.

It was found that outstanding personality characteristics are usually evident in children's drawings.
CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The study of this group of spontaneous drawings and results of the Goodenough Draw-A-Man Intelligence Test indicates the general nature of the behavior problems to be found in the child if it consists of mental or emotional traits. A few physical traits such as the masculine or feminine traits and the output of energy may be shown in the drawings, but no social traits are indicated. A knowledge of the whole child is needed to interpret these indications correctly.

Conclusions reached by this study are as follows:

1. Examples of "verbalist" and "individual response" type drawings were not found.

2. One example of the "flight of ideas" type of drawing was manifested by Pupil C.

3. Success or failure on Perrien's paired items does not indicate uneven mental development at this age level.

4. Failure on the items which Perrien found characterized the psychopathic group and those which characterized the encephalitic group does not indicate maladjustment in this group.

5. A high score made by a child on the Brill Abbreviated
Scale of the Goodenough Draw-A-Man Intelligence Test did not necessarily mean that he was better adjusted than one who made a low score.

6. An indication of a heel on a figure tends to go with poor adjustment of the child.

7. A reversal of sex characteristics in a drawing indicates maladjustment in the child.

8. The child who made a higher score on the Goodenough Test than on the Kuhlmann-Anderson Intelligence Test is not necessarily better adjusted.

9. The correlation between intelligence and artistic ability is positive but not high.

10. Transition from full-face to profile drawings in this group is normal.

11. Harms' line-analysis showed formal imagery of Pupils D, G, and I and pictorial imagery of Pupils E and H in reaction to the word list. Omissions of words are conspicuous in the case of Pupil I.

12. The size and format of drawings are not variable in this study.

13. There were not enough cases of rigid symmetry to be significant.

14. It was found that children who had balance in their pictures were better adjusted than those who did not have balance.

15. Well-adjusted children have an average number of
motion elements in their pictures while poorly adjusted children have either an extremely high or extremely low number.

16. An excessive use of black indicates neurotic tendencies while red, blue, yellow, and a little black and white are the colors used by normal children.

Suggestions for the Teacher

Art is a part of the experience of the whole child and deserves more study as an aid to understanding the child. Speaking from a mental hygiene viewpoint, Zachry said:

Their mental health and their constructive value as mature adults depend to some degree at least on how well teachers succeed in understanding the student's art product as it reveals the various needs and potentialities of his total personality. Although as yet we are uncertain how far an individual's emotional adjustment is pictured in the art he produces, it is obvious that the art product as well as a student's action within the art room provide an intimate indicator of his needs at the time.¹

The teacher needs to be able to recognize the four general deviations suggested by Goodenough although they do not occur frequently on the Goodenough Draw-A-Man Intelligence Test.

For normal groups minute analysis of the Goodenough Scale yields meager results.

The intelligence of the child and his past experience

in figure drawing should always be considered when using the Goodenough Scale.

Spontaneous drawings yield the best insight into the child's emotional life. Drawings in the regular art period are fruitful in this respect if they represent imaginary subjects or if the child has chosen the subject.

A criterion of form elements such as those suggested by Schmidl-Waehner is helpful in discovering undesirable tendencies in these drawings.

The Harms' line analysis given in this study is too incomplete to be significant.

Indications of behavior problems in drawings are not significant alone. They must be considered against the background of the whole child.

Need for Further Study

Methods developed by such men as Harms and Schmidl-Waehner for the study of the child's emotional life through drawing should be made available to teachers with suggestions for their use under classroom conditions.

A scale or score sheet of the form elements which investigators have found indicate behavior tendencies should be compiled.

Prescott recognizes that an investigation into the possibilities of the examination of art products of individuals to gain a fuller knowledge of their needs is timely. He says:
Undoubtedly, many aesthetic products of young people and many of their interpretations of the aesthetic productions of others carry themes that are symbolic of underlying emotional conflicts and deprivations. If psychiatrists and psychologists can become skillful in discovering these delicate facts from material produced or reacted to as a part of the regular curricular offerings, they will open the way to a much deeper understanding of pupils on the part of teachers. Experimentation is needed to establish the validity of this technique and to demonstrate how it may be used under normal school conditions.\(^2\)

APPENDIX A
APPENDIX A

The following is a list of the items used in scoring the Goodenough Draw-A-Man Intelligence Test:¹

1. Head present.
2. Legs present.
3. Arms present.
4a. Trunk present.
4b. Length of trunk greater than breadth.
4c. Shoulders definitely indicated.
5a. Attachment of arms and legs.
5b. Legs attached to the trunk. Arms attached to the trunk at the correct point.
6a. Neck present.
6b. Outline of neck continuous with that of the head, of the trunk, or of both.
7a. Eyes present.
7b. Nose present.
7c. Mouth present.
7d. Both nose and mouth shown in two dimensions; two lips shown.
7e. Nostrils shown.
8a. Hair shown.

¹Goodenough, Measurement of Intelligence by Drawings, pp. 91-110.
8b. Hair present on more than the circumference of the head. Better than a scribble. Non-transparent; that is, outline of head not showing through the hair.

9a. Clothing present.

9b. At least two articles of clothing (as hat and trousers) non-transparent; that is, concealing the part of the body which they are supposed to cover.

9c. Entire drawing free from transparencies of any sort. Both sleeves and trousers must be shown.

9d. At least four articles of clothing definitely indicated.

9e. Costume complete without incongruities.

10a. Fingers present.

10b. Correct number of fingers shown.

10c. Detail of fingers correct.

10d. Opposition of thumb shown.

10e. Hand shown as distinct from fingers or arm.

11a. Arm joint shown. Either elbow, shoulder, or both.

11b. Leg joint shown. Either knee, hip, or both.

12a. Proportion. Head.

12b. Proportion. Arms.

12c. Proportion. Legs.

12d. Proportion. Feet.

12e. Proportion. Two dimensions.
13. Heel shown.

14a. Motor coordination. Lines A.

14b. Motor coordination. Lines B.


14d. Motor coordination. Trunk outline.

14e. Motor coordination. Arms and legs.


15a. Ears present.

15b. Ears present in correct position and proportion.

16a. Eye detail. Brow, lashes, or both shown.

16b. Eye detail. Pupil shown.

16c. Eye detail. Proportion.


17a. Both chin and forehead shown.

17b. Projection of chin shown; chin clearly differentiated from lower lip.

18a. Profile A.

18b. Profile B.
APPENDIX B
APPENDIX B

1. Angry
2. Happy
3. Sad
4. Sick
5. Thought
6. Finale

Fig. 1.--Line analysis of six words drawn by Pupil A
Angry

Happy

Sad

Lick

Tought

Tired

---

Fig. 2. -- Line analysis of six words drawn by Pupil D
Fig. 4.—Line analysis of five words drawn by Pupil G
Fig. 5.—Line analysis of five words drawn by Pupil H
angry

Happy
Sad
Sick

Fig. 6.--Line Analysis of five words drawn by Pupil I
APPENDIX C

Pupil A was the second child in a family of four children. They lived in a store building by a post yard near the school. He was very proud of his older sister, especially of her ability to draw. He tried to take care of the younger brother who was in school and frequently told him what to do. Because the younger brother had a congenitally bad heart, he tried to protect him.

He was always neat and clean and evidently took pride

<table>
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<tr>
<th>Pupil</th>
<th>Chronological Age</th>
<th>Mental Age</th>
<th>Intelligence Quotient*</th>
<th>Scores on Haggerty- Olson-Wickman Behavior Rating Schedules A and B</th>
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<tr>
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<td></td>
<td>Schedule A</td>
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<td>I</td>
<td>12-2</td>
<td>8-10</td>
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<td>74</td>
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*Kuhlmann-Anderson Intelligence Test.
in his personal appearance. His papers were exceptionally neat for a boy and often were done more than once to come up to his standard. His passion for a neat paper sometimes stood in the way of his doing more of his school work.

He did not have much energy. It appeared to be an effort for him to do anything. He disliked to finish his work after it was begun. Often he just sat, and sometimes counted the squares on the ceiling.

During the time spent in the classroom, he talked incessantly. He was asked not to talk when others were talking or studying, but he said that he could not help it. He had never learned to read silently.

He complained of his eyes hurting, and before they were examined for glasses he began to blink them.

On the playground he played well with other children, playing group games such as baseball and football.

Until recently, Pupil B's family had lived in a tent near the cemetery. The father cleaned the weeds from the graves, but the skin cancer on his face now makes it impossible for him to work. They have always received help from charitable groups.

The family then moved into a house. They have a few bantam chickens and a garden. The state pension for the father, who is an elderly man, and the additional payment for Pupil B, the youngest child, is the main source of income.
There are three older children. All of them are dull. Two have a speech defect like that of Pupil B. One sister was recently arrested for vagrancy.

Since Pupil B was malnourished and unable to pay for his lunches, they were served free in the school lunchroom. Most of the clothing which he wore had been given to him. He was never really clean, and his hair usually needed cutting.

On the playground he almost never played group games; instead he played "horse" or some other game with the smaller children. When he did attempt to play baseball, he did not try to play well but purposely made errors to favor the opposing team. He shuffled along as he walked and did not have good muscular control.

He was shy. However, since he was rather suggestible, he fell into most of the other boys' plans and was well liked as a follower. He was generous with what he had.

Although he caused little, if any, trouble in the classroom, it was to him a mark of distinction to be punished. The things which he did were to attract attention. He sometimes mumbled comments which others had made.

Pupil C came from a family with above average means. He was the fourth of seven children. His father was a rancher and trader. Their home was in the country. This was his first year in this school.

Physically he was undersized, but he had a great deal
of endurance. He played football and basketball with the older boys and held his own very well. Once he was knocked unconscious while playing football. He was inoculated for typhoid, but cried and refused to be vaccinated for smallpox.

He appeared to be very well adjusted at school. Once, however, when his brother had paid for his lunch, he decided he would not like to eat in the lunchroom and became very angry. He threatened to have his mother come to school.

All of his movements were jerky. He talked rather fast, and usually sang faster than the group. He was left-handed.

Of all the children, he seemed to be the most interested in social studies. He had an active interest in almost everything. He wanted to take part in nearly every classroom activity. He was a good reader. Usually he did his work accurately but not in a neat manner.

Pupil D lived on a farm with two brothers and a sister. He had to stay out of school and help thresh peanuts. This was his second year in this school.

He was a good follower, but never initiated anything. He played games such as baseball and football with a good team spirit. The children liked him.

Like his brothers he was very timid and self-conscious. When he was asked to take part in the school play, he practiced the role once but refused to do so again. He said
little in the classroom. His progress was slow because he hesitated to ask for help.

However, all of the children in the family were slow learners. Pupil D had more trouble with arithmetic than with any other subject.

There were two children in Pupil E's family. Her brother was sixteen years old. He had had a rather difficult time at school because he had been teased so much and had reacted violently at times. Her mother had suffered a nervous breakdown shortly after the death of Pupil E's maternal grandmother who had been an invalid for a number of years and had made her home with her daughter.

Pupil E was tall, pale, and thin and reportedly had a heart ailment which made her mother very solicitous about her health. She had one fainting spell at school. Since she had a habit of staying awake very late at night, her mother disliked to wake her in the morning. Consequently, she was nearly always late for school. Most of the time she was dressed too warmly. Also, she had poor eating habits. To get her to drink milk or to eat her food, her mother paid her.

Her posture was bad. Much of the time she sat with her feet in her seat and leaned on her desk. She stood on the outside of her shoes. "Baby talk" was her speech defect. Although she had had expression lessons, it was not entirely corrected. The cause seemed to be psychological.
Her mother frequently visited school and asked special favors for Pupil E. The mother liked to compare Pupil E's excellent scholastic record with the records of other members in the class. She allowed Pupil E to bring the teacher presents often.

Pupil E had all kinds of dolls, books, games, and toys. She took excellent care of them. Her mother also subscribed to several children's magazines for her.

She had a number of fears and worries. Listening to the war news made her nervous. She was afraid of open fires. When she did not get her own way, she was prone to react to the situations by kicking and crying. She had a temper tantrum at her Easter party when she failed to find the prize egg which her mother had hidden.

Pupil F is the only boy in the family of four. He is the second child. The family lived in the country near the river. He rode the school bus. His sister was in the fifth grade.

He was very small for a nine-year-old, but he was able to hold his own with larger boys his own age. He was an attractive child with black, wavy hair. He took pride in his appearance. He was left-handed.

Although he played group games, he did not get on well because he always thought he was mistreated. This same attitude was carried over into the classroom. He seemed to think he was discriminated against when corrections were
marked on his papers. He rarely ever smiled. For some reason he always wanted to harm the teacher.

He usually sat quietly in the school room, but did very little. Most of the work was above his capacity.

Pupil G lived near the creek and river. He spent a great deal of time hunting and fishing with his two older brothers and a younger brother. There was one married sister. The father took care of the oil wells north of town and drove the school bus.

Before school began in September one of his eyes was injured by a rock from a slingshot. He looked through one end of a pipe just as a neighbor boy shot. He could still see with the injured eye.

He had poor muscular control. He was left-handed and frequently made number reversals. He often asked permission to go to the restroom.

Most of the time his desk was cluttered with junk such as pieces of wood, bottles, flashlight batteries, and wire. He liked to make things with his hands. He helped make a chair from an orange crate and paint it. He also helped make a picture show with rollers. Because some other children wanted to work on it, he tore it up.

When he pulled up the grain planted in the sand table because he had not been allowed to water it, he was punished.

He made some progress in spelling by the phonetic
method. He refused to skip a word until he could spell it. He was likely to blame his mistakes on something or someone other than himself.

The span of attention of this child was very short in the ordinary school subjects. He had poor work habits; it was difficult for him to keep to a task until it was finished.

Pupil G apparently wanted to be the one in authority. On the playground he was usually a leader.

He played the harmonica well. He like, however, to show off this and other skills, probably as a compensation for his lack of ability along scholastic lines.

Pupil H had a little brother in the first grade. The family lived in a one-room tourist cabin. The father had a crippled hand and had not been employed steadily until he acquired a position as a filling station operator. The mother was a very good manager and worked hard to give her children all the advantages possible.

Pupil H was in excellent health. She paid little attention to her hair and dress although she was rather attractive.

Her manner was abrupt and boisterous. She bumped into people, knocked over chairs, and ran in the room. She read rapidly and jerkily. She had a rather bold approach and was extremely curious. She always pushed forward in any group.
She appeared to be above the average in intelligence because she did her work very well and thoroughly. Her mother helped her a great deal at home. She seemed to have little originality. She did a great deal of erasing and copying of her work.

Sometimes she kept on doing a thing after being told to stop. She was often described as obstinate.

There were four other children in the family, all older than Pupil I. He lived in the country. His father was a hunchback. His mother was a very large woman. The father had been a cook on a ship and his many exploits were told by Pupil I and the other children. His mother was supposedly related to a certain movie star of Western pictures since her maiden name was the same as his. This fact was the source of great family pride. His mother was deeply religious.

The family had been helped by charitable organizations. All of the children in school had been given free lunches. The family needed less help now than formerly.

Pupil I was older and larger than the other boys in the room. He bullied the younger boys by hitting and teasing them.

He often interrupted and answered questions out when other pupils had been called upon. He had very poor work habits, and though he was dull, he never really worked up to his capacity. He had a fair command of number facts,
but he refused to learn new processes such as long division. He was poor in reading and spelling and used very poor English. However, he was interested in nature study and had a great deal of accurate knowledge.

In the school play he volunteered for the part of an escort to the princess and did it well. He did many of the routine chores of the schoolroom gladly.

He was stubborn and sulked a great deal. He never admitted he was wrong even when confronted with evidence. He was always very positive in all of his statements. He always blamed someone else for his faults and errors.
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