VALIDITY STUDIES ON THE "DRAW-A-GROUP" PROJECTIVE TECHNIQUE FOR MEASURING INTERPERSONAL RESPONSIVENESS

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FOR MEASURING INTERPERSONAL RESPONSIVENESS

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

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Denton, Texas
June, 1970
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CHAPTER I

INTRODUCTION AND RELATED RESEARCH

Possibly the most notable drawback of projective drawing analysis is the difficulty encountered in validation. Throughout the history of projective techniques, behavioral scientists have attempted to establish some reliability and validity for these techniques. The task has been a most difficult one. Bonney and Hampleman state,

Undoubtedly the strongest and most persistent criticism of all forms of projective testing concerns the lack of conclusive data on validity and reliability. Although a large number of research studies are available . . . the overall picture is one of low reliability and validity (1, pp. 47-48).

Perhaps the single most important reason for this difficulty lies in the absence of objectively quantifiable scoring procedures for drawing techniques. Despite this hardship, such techniques as the "Draw-a-Person" test and the "House-Tree-Person" test continue to be among the most widely used psychodiagnostic tools (15). Projective techniques have offered many advantages over more objective techniques. Since the stimuli presented to the subject are neutral or ambiguous, the subject is allowed a greater response freedom. Also, as Ruch states,

Projective tests are difficult to fake because there are no obviously right or wrong answers, and
have the further advantage of tapping deeper levels of needs and fears than other measurement methods (13, p. 402).

Therefore, clinicians have continued to use projective techniques, feeling that through experience they can develop their own guidelines for analysis, thus establishing their own reliability and validity.

Related Research

Projective techniques is the name conferred by Lawrence Frank (3) upon a wide range of related procedures used for purposes of diagnosis. These techniques are commonly thought to offer information regarding the ways in which an individual views himself and his world. Horrocks defines a projective technique as "any procedure for finding an individual's behavior tendencies ... by observing his behavior in a relatively unstructured, vague, or ambiguous context that does not compel any particular response" (7, p. 608).

Horrocks further states

The assumption is made that since neither the ambiguous stimulus nor the directions for taking the test indicate the response, the examiner's ensuing reaction will be representative of his enduring propensities or at least of his current mood (7, p. 608).

It is perhaps the vagueness or ambiguity inherent in projective techniques which results in the low validity of such techniques. At the same time, however, the vagueness and ambiguity of the stimulus must be maintained if the individual is to be able to project his own perceptions into
the test. However, since validity is required for successful application, researchers must continue their attempts to validate projective techniques if these methods are to continue to be utilized.

Since 1929, when Goodenough (4) developed the "Draw-a-Man" test and established the relationship between intelligence and the quality of drawings, the use of drawing techniques has flourished. In 1960, six of the fifteen tests most commonly used for evaluation by clinicians were projective techniques. Of these six tests, two were projective drawing techniques, and Machover's (11) "Draw-a-Person" test ranked second only to the Rorschach in frequency of use (15). These data reflect the fact that projective drawing techniques are widely used by clinicians and will, in all probability, continue to be so used.

White states that the "psychological study of drawing ... suffers from no lack of ingenuity or stimulating ideas. The crying need is for validation" (20, p. 246). Although some research has been conducted for purposes of validation of drawing techniques, there appears to be a great deal less than one might expect. A possible reason for this inadequacy might be that the research reported in the literature typically reveals negative results.

Perhaps one of the most significant research studies reported in the literature is that reported by Wanderer (18). Wanderer had twenty judges, considered to be experts in the
analysis of drawings, evaluate "Draw-a-Person" tests for five groups of subjects. Among these twenty experts were such persons as Lauretta Bender, Karen Machover, and Solomon Machover. Wanderer's purpose was to attempt to establish the validity of clinical judgments based on drawings of human figures. The five groups of subjects consisted of a psychotic, a neurotic, a mental defective, a homosexual, and a normal group. The "Draw-a-Person" tests for all groups were mixed together and then given to the judges individually. Each judge was asked to evaluate the "Draw-a-Person" tests and make a decision as to which group of subjects it belonged. In a significant number of cases the judges were able to choose the mental defective group from the drawings. However, the judges were not able to differentiate the other groups on the basis of the drawings to any significant degree. From his data, Wanderer concluded that clinicians have been making diagnostic judgments based on techniques of equivocal validity.

In a related study, Stoltz and Coltharp (14) asked judges to rate drawings made by sixty fourth-grade school children for the traits of intelligence, sociability, and emotional maturity. The criterion measures were the Otis Quick Scoring Test of Mental Abilities for intelligence, choice status on a sociogram for sociability, and teacher's ratings for emotional maturity. The judges' predictions showed a significant correlation with each other. However,
only the intelligence ratings correlated significantly with the criterion measure.

Results such as those mentioned above have led researchers to doubt the value of drawings as evaluation tools. Holzberg and Wexler (6) state, "the technique remains much more of an art than a science" (6, p. 344).

In an attempt to lend validity to the "Draw-a-Person," Watson, Felling, and Maceachern (19) cross-validated seven objective scales with the "Draw-a-Person" test. Since no correlations were significant, they concluded that objective scales seemed to hold little diagnostic promise.

Reviewing the available literature on drawing analysis from 1949 to 1967, Roback (12) concluded that human figure drawings should not be used for clinical assessment because they have consistently shown low validity. Roback also objected to the use of drawings by inexperienced clinicians who might place too much emphasis on such techniques. At the same time, however, Swenson (16), reviewing the same type of literature from 1957 through 1966, concluded that current research on human figure drawings had assessed the reliability of such techniques to the extent that there was sufficient empirical justification for the use of drawings as a clinical tool if they were used as part of a diagnostic battery.

Within Swenson's conclusions lies perhaps the most important aspect of human figure drawings. Such drawing analysis can be of great value when used as only a small part
The much larger framework of evaluation. No one psychodiagnostic test can be considered an evaluation in itself. Each test must be interpreted in relation to other tests.

The Measurement of Interpersonal Responsiveness

In searching through tests available to the psychologist, there appears an area of individual behavior which has been somewhat neglected, but which has become extremely important. This area is that of interpersonal responsiveness or the manner in which one person responds to other persons. The clinician has available to him excellent techniques for studying groups and group interaction, e.g., sociometric techniques and group cohesiveness techniques (9). However, these techniques reveal only the individual's position in a group and to some extent whether or not he will remain in the group. These techniques are further limited in their ability to predict how an individual will respond in a group situation.

In order to meet the need for a concise and quickly scored test for measuring interpersonal responsiveness, the "Draw-a-Group" test was devised by Cookerly (2). Cookerly defines interpersonal responsiveness as

... the degree to which a person can successfully respond to others in many and varied situations, thus causing others to increase their positive responsiveness to, or acceptance of, that person. Interpersonal responsiveness can also be thought of as involving a number of other factors such as sensitivity to others;
a general tendency to interact with people individually or in groups; a person's general choice-value among others; a lack of interpersonal isolation; an ability to interrelate meaningfully with numerous persons; and that which is sometimes called social maturity (2, pp. 3-4).

The "Draw-a-Group" test was developed in an attempt to measure all the facets of interpersonal responsiveness referred to in the above definition.

In his original study, Cookerly used 182 subjects, of which 107 were male and 75 were female. The ages of the subjects ranged from 7 to 88, with a mean age of 34 years and 2 months. The subjects were divided into 3 categories.

Category A consisted of seventy-eight subjects who could be classified into several age groups, namely, children, adolescents, young adults, middle adults, and older adults. Each group was given the "Draw-a-Group" projective technique and a sociometric questionnaire. The sociometric questionnaire asked for psychotele choices (party attendance) and sociotele choices (sight-seeing tour). The mean coefficient of correlation between the "Draw-a-Group" and the sociometric questionnaire was .68, with a standard deviation of .13. This correlation was somewhat lowered by the group of older adults, whose ages ranged from sixty-three to eighty-six. The coefficient of correlation for the older adults was .25, with a standard deviation of .23. If this group of older adults was eliminated from Category A, the mean coefficient of correlation would be .79, which would be a more significant figure. The low correlation for the group of older
adults could not be satisfactorily explained. All subjects in Category A were considered to be "normal" subjects.

Category B consisted of thirty-six subjects who had completed the "Draw-a-Group" projective and the Minnesota Multiphasic Personality Inventory. These subjects had been referred for psychological testing for a wide variety of reasons. Category B was considered to be composed of both normal and clinical subjects. The MMPI yielded a score on the Social Introversion-Extroversion Scale which was correlated with the score on the "Draw-a-Group." The coefficient of correlation for Category B was .45, with a standard deviation of .14.

Category C consisted of sixty-eight subjects who could be divided into five classifications of clients commonly tested by psychologists. All subjects in this category were considered to be clinical subjects. Each subject in Category C completed the "Draw-a-Group" projective and was also rated for interpersonal responsiveness by persons who had worked closely with them. The rating scale for interpersonal responsiveness was devised by Cookerly to parallel the rating scale for the "Draw-a-Group," i.e., one represented very low interpersonal responsiveness and five represented very high interpersonal responsiveness. The mean coefficient of correlation for Category C was .80, with a standard deviation of .09.
All "Draw-a-Groups" were rated individually by a panel of three judges. Analysis of reliability for the judges showed a mean inter-rater coefficient of correlation of .71, with a standard deviation of .03. These data were interpreted as supporting the hypothesis that the "Draw-a-Group" is a reliable instrument for which more research is warranted.

Cookerly concluded from his research that the "Draw-a-Group" could be a valid instrument when used with clinical subjects. Cookerly also concluded that the instrument showed promise of being adaptable to non-clinical subjects.

In an attempt to establish the validity of the "Draw-a-Group" with normal subjects, Tanski (17) correlated "Draw-a-Group" scores from 150 university students enrolled in freshman English classes with their scores on the Personal Feeling Scale, which was considered a measurement of mood. All results were nonsignificant, which indicated that interpersonal responsiveness was not related to mood.

More recently, Koehn (8) concluded that the "Draw-a-Group" appears to be a measure of mental health when used with hospitalized psychiatric patients. She correlated the "Draw-a-Group" scores with sociometric status, both psychotele and sociotele, with nurses' and doctors' ratings of symptom severity, and with nurses' and doctors' ratings of mental health. Of these correlations, the only one found to be significant was between the "Draw-a-Group" and ratings of mental health.
In addition to Cookerly's "Draw-a-Group" projective technique, two separate "draw-a-group" techniques have been developed. Neither technique was developed specifically to measure interpersonal responsiveness, although such measurement appears to be inherent in the techniques.

Hare and Hare (5) had 10 classrooms comprised of 166 first-, second-, and third-grade school children draw a picture of the group they would most like to play with on the playground. This technique very closely parallels sociometric techniques in that psychetele choices are required. For each of the ten classes, correlations were computed between teachers' rankings of the students' sociometric status and rankings of the "draw-a-group" pictures. A mean correlation of .52 was obtained, which the authors reported as being significant at the .05 level of confidence.

McPherson (10) developed a "draw-a-group" technique to measure role behavior and group concept in adult male schizophrenic patients. The criterion measure used was behavior rating scales of individuals in group therapy. Results indicated that the "draw-a-group" technique was effective when used to infer interpersonal role behavior in psychotherapy groups within four categories of common group behavior, i.e., dominance, dependence, aggression, and isolation.

These two studies appear to be of significance to the present study of Cookerly's "Draw-a-Group" test. Both
studies were concerned with interpersonal relationships and both found the technique to be valuable in the study of such relationships. Since three methods of drawing analysis based upon the drawing of a group have been independently developed, one might conclude that such a technique could become an important tool for the psychologist when used for the prediction of interpersonal behavior.

Purpose of the Study

As with all psychodiagnostic tests, before the "Draw-a-Group" can be considered a valuable instrument to the clinician, some basis for validity must be set. Although some research has been done on the "Draw-a-Group," sufficient validity has yet to be established. It is the purpose of this research to attempt to further establish the validity of the "Draw-a-Group." A related purpose is to attempt to further clarify which factors are related to interpersonal responsiveness. Four widely employed psychodiagnostic tests were used in addition to the "Draw-a-Group." These tests also served as operational definitions of the factors under consideration. Interpersonal responsiveness was operationally defined by the "Draw-a-Group"; self-concept was operationally defined by the Self-Concept Scale of the "Draw-a-Person" test; intelligence was operationally defined by the Wechsler Intelligence Scales; mental health was operationally defined by the Minnesota Multiphasic Personality Inventory; and,
finally, marital adjustment was operationally defined by the "Polyfactor Test of Marital Difficulties."

The predictor tests were chosen on the basis of their theoretical application to interpersonal responsiveness. The Self-Concept Scale of the "Draw-a-Person" was utilized because it was designed to measure several areas of self-concept, while yielding a total score of self-concept. It was felt that interpersonal responsiveness should be positively related to self-concept. The MMPI has been widely used as a measure of mental psychopathology within several personality areas. Since previous research had established a relationship between interpersonal responsiveness and ratings of mental health, it was felt that an inverse relationship between "Draw-a-Group" scores and MMPI scores would help to further clarify this relationship. Since the Wechsler Intelligence Scales offered the most comprehensive index of intelligence, it was felt that these scales would be most valuable for the purposes of this research. Theoretically, one might also expect interpersonal responsiveness to affect marital adjustment. The "Polyfactor," although a relatively new instrument, appeared to be an extremely comprehensive measurement of marital adjustment and was, therefore, used in an effort to determine the relationship between interpersonal responsiveness and marital adjustment.
Hypotheses

The specific hypotheses tested in this research were that

I. Interpersonal responsiveness would be significantly related to mental health;

II. Interpersonal responsiveness would not be significantly related to intelligence;

III. Interpersonal responsiveness would be significantly related to self-concept;

IV. Interpersonal responsiveness would be significantly related to marital adjustment.
CHAPTER BIBLIOGRAPHY


12. Roback, Howard B., "Human Figure Drawings: Their Utility in the Clinical Psychologists' Armamentarium for Personality Assessment," *Psychological Bulletin*, 70 (January, 1968), 1-19.


CHAPTER II

METHODOLOGY

Subjects

The total number of subjects employed in this research was 150. Of the 150 subjects, 80 were female and 70 were male. All subjects were randomly selected, using a table of random numbers, from existing files at a southwestern neuropsychiatric hospital whose clientele is considered to be representative of psychiatric patients in the general area. Every person used in this research had received a psychodiagnostic test battery in connection with his hospitalization. For the purposes of this research, three groups of subjects were chosen.

Group I consisted of thirty adolescent patients, of whom eighteen were male and twelve were female. The age range for Group I fell between the ages of twelve and nineteen, with a mean age of 15.69. Two adolescents in this group were married and one had been divorced. Due to possible differences in interpersonal responsiveness between adolescents and adults, it was felt desirable to analyze adolescent data separately from adults.

Group II consisted of sixty subjects between the ages of twenty and sixty-two. The mean age of Group II subjects...
was 36.75. Of this group, twenty-nine were male and thirty-one were female. Most patients admitted to the hospital fall between the ages of twenty and fifty, with a much smaller number of patients being over the age of fifty. Of the sixty subjects in the Group II sample, seven were between the ages of fifty and fifty-nine, and three were over sixty years of age. The marital status of the subjects in Group II was also consistent with the general hospital population. There were eight persons who had been divorced, two who were widowed, two who were separated from their spouses, one who was single at the time of testing, and the remainder were currently married.

Since not all adult patients in Group II had been given the "Polyfactor Test of Marital Difficulties," a third group was randomly selected from the total population of those patients who had received both the "Draw-a-Group" test and the "Polyfactor." This third group, Group III, consisted of sixty subjects, twenty-three males and thirty-seven females. The age range of subjects in Group III fell between the ages of twenty and sixty years of age, with a mean age of 32.83 years. Although the "Polyfactor" is normally administered only to persons currently married, it is occasionally given to persons recently divorced or separated. In the present sample of sixty subjects, two had been divorced and two were separated from their spouses.
Description of Instruments and Procedures

All subjects used in this research had been given a full battery of psychological tests for purposes of psychodiagnosis. Each battery was composed of approximately eleven tests, which included the five instruments considered most appropriate for this study.

Each subject in Groups I and II were administered the "Draw-a-Group" projective technique, the "Draw-a-Person" projective technique, the Minnesota Multiphasic Personality Inventory (MMPI), and the Wechsler intelligence scale appropriate for the subject's chronological age. The subjects in Group III had also been given the above tests, but, in addition, each subject had been administered the "Polyfactor Test of Marital Difficulties." All tests were given to the subjects in an individual testing situation.

As a measure of interpersonal responsiveness, the "Draw-a-Group" projective technique was administered according to the directions given by Cookerly (2). Each subject was given a blank piece of white paper and a pencil. The examiner instructed the subject to draw a group of people. The subject was allowed to draw the group in any way he desired. The examiner in no way assisted the subject, nor did he prompt the subject.

Each "Draw-a-Group" was rated according to the scoring criteria set by Cookerly (2, pp. 36-49). The scoring criteria for each "Draw-a-Group" test involve a wide variety
of characteristics including number of people in the drawing, degree of interaction represented, degree of role structure, facial and postural expressions, and other graphic and structural indicators. The group drawing was scored on a rating scale from one to five as follows:

- One point—very low in interpersonal responsiveness,
- Two points—low in interpersonal responsiveness,
- Three points—average in interpersonal responsiveness,
- Four points—high in interpersonal responsiveness,
- Five points—very high in interpersonal responsiveness.

The "Draw-a-Person" projective technique was used as a measure of self-concept. The "Draw-a-Person" was administered according to standard procedures as set up by Machover (5). Each subject was given another piece of blank white paper and a pencil and told to draw a person. The subject was encouraged to draw the full body of the person rather than a "stick" figure drawing. When the subject had completed the drawing, the examiner requested the subject to turn the paper over and draw a person of the opposite sex. A notation was made by the examiner as to the sex of the figure in the original drawing.

Before discussing the Self-Concept Scale of the "Draw-a-Person" projective technique developed by Bodwin and Bruck (1), it seems appropriate to discuss the body-image hypothesis from which the scale stemmed. Machover stated the body-image hypothesis thus:
The human figure drawn by an individual who is directed to "draw a person" relates intimately to the impulses, anxieties, conflicts, and compensations characteristic of that individual. In some sense, the figure drawn is the person, and the paper corresponds to the environment. This may be a crude formulation, but serves well as a working hypothesis (5, p. 35).

Following Machover's original publication, a great deal of controversy arose concerning whether or not the drawing of a person was an accurate projection of the subject's self-image. In his review of the literature from 1949 through 1956, Swenson (6) concluded that there was insufficient support for the hypothesis. Furthermore, Swenson states that "for many, or perhaps most $S$s, the figure drawn does not represent the $S$'s own body" (6, p. 437).

However, Craddick (4) contends that Swenson "cited no study directly related to the investigation of Machover's body-image hypothesis" (4, p. 288). Craddick compared the "Draw-a-Person" test and self-portrait drawings for twenty-three fifth-grade students and twenty-three college sophomores. The drawings were compared on the basis of (1) size of drawings, (2) frequency of same-sex drawings, (3) page placement of both drawings, and (4) frequency of correct pairing of "Draw-a-Person" and self-portrait drawings by a male and a female judge. In terms of the four variables, both drawings were found to be significantly related. The results were interpreted as supporting the body-image hypothesis.

Bodwin and Bruck's (1) self-concept scale of the "Draw-a-Person" test defines self-concept as consisting of these
elements: (1) self-confidence, (2) freedom to express appropriate feelings, (3) liking for one's self, (4) satisfaction with one's attainments, and (5) feeling of personal appreciation by others.

The original Self-Concept Scale of the "Draw-a-Person" consisted of thirteen characteristics which were thought to represent self-concept, as defined above. The thirteen characteristics were (1) shading, (2) reinforcement, (3) erasures, (4) detail in figure, (5) sketchy lines, (6) transparency, (7) asymmetry, (8) distortion, (9) incompleteness, (10) mixed age, (11) opposite sex identification, (12) primitiveness, and (13) immaturity. The "Draw-a-Person" test was given to sixty subjects ranging in age from ten to seventeen. Each drawing was then rated for presence or absence of the above characteristics on a scale from one to five. A total score of self-concept was obtained by summing the thirteen ratings. An item analysis of the thirteen characteristics showed four characteristics did not significantly discriminate between mature and immature self-concept. These four characteristics— asymmetry, detail in figure, shading, and mixed age—were subsequently eliminated in the revised Self-Concept Scale of the DAP.

In order to ascertain the validity of the Self-Concept Scale of the DAP, a judge independently rated the sixty subjects for self-concept following a psychiatric interview. The judge's rating and scores from the Self-Concept Scale of
the DAP were correlated yielding a correlation of .64, which was significant at the .01 level of confidence. Bodwin and Bruck thus conclude "that the SCS-DAP is a valid measure of self-concept" (1, p. 428).

For the purposes of this research, the revised Self-Concept Scale of the DAP was used. The nine characteristics in the revised version were rated on a scale from one to five. The nine ratings were then summed for a total score of self-concept, with a minimum score of nine and a maximum score of forty-five possible. A value of one for a rating scale indicated the characteristic was markedly present, and a value of five indicated the characteristic was markedly absent. Thus, a high total score on a drawing represented a high self-concept.

In order to measure mental health, the old group form of the Minnesota Multiphasic Personality Inventory was given to each subject individually. T scores on the thirteen standard scales were obtained for each subject. By using the T scores which are transformed Z scores for each scale, the scale scores for the MMPI were considered to be of an equivalent value. For all scales on the MMPI, the means and standard deviations of fifty and ten, respectively, have been established, using both normal and psychiatric subjects. Scales one through three on the MMPI, i.e., L, F, and K, have normally been considered validity scales. However, when these scales are interpreted in relation to the ten
psychopathology scales, they become very good indices of behavior pathology.

The ten remaining MMPI scales used in this research were as follows: Hs, Hypochondriasis; D, Depression; Hy, Hysteria; Pd, Psychopathic Deviate; Mf, Masculinity-Femininity; Pa, Paranoia; Pt, Psychasthenia; Sc, Schizophrenia; Ma, Hypomania; Si, Social Introversion.

Each MMPI was scored by the examiner according to standard scoring stencils. A profile of each MMPI was prepared, and then the T scores were obtained from the profile.

Each subject was also administered either the Wechsler Adult Intelligence Scale or the Wechsler Intelligence Scale for Children, whichever was appropriate for his age. The Wechsler scales yield three intelligence quotients where the means and standard deviations have been set at 100 and 15. Three intelligence quotients were obtained for each subject, i.e., Verbal Intelligence Quotient, Performance Intelligence Quotient, and Full Scale Intelligence Quotient. No attempt was made to limit the intellectual range of the subjects in the samples.

Each subject in Group III was given the "Polyfactor Test of Marital Difficulties" (3), which consists of eighty-five sentence completion items. After the subject had completed the sentences, he was asked to go through the completed items and rate each according to the amount of difficulty that item represented in his marriage. The rating
scale is composed as follows:

M—much difficulty—three points,
S—some difficulty—two points,
L—little difficulty—one point,
N—no difficulty—zero points.

The examiner then scored the "Polyfactor" according to the principles given by Cookerly and Foster (3). A total score of marital difficulty was obtained for each subject. The total maximum score obtainable on the "Polyfactor" was 255 points, which would represent a great amount of marital difficulty.

The "Polyfactor" was developed by Cookerly and Foster (3) as a self-rating sentence completion technique for measuring marital difficulties. The technique has been primarily utilized with clients in marriage counseling where both marriage partners take the test. However, on an experimental basis, it has also been used as a measure of an individual's perception of his marriage situation.

Since the "Polyfactor" is a new and experimental technique, normative data were not available and validity studies have not yet been completed. However, Walker (7), in an exploratory study of the instrument, found the "Polyfactor" to show very good reliability. She administered the "Polyfactor" to sixty-six subjects who were entering marriage counseling. After the subjects completed the eighty-five sentence items, they rated the completed items as to the
amount of marital difficulty reflected in that item. The clients' scores were then placed on a graph for each couple. Five psychodiagnosticians then rated the same completed sentences for amount of difficulty. The diagnosticians' ratings were also graphed. Both graphs were presented to the couple's marriage counselor, who made a judgment as to which graph seemed to best indicate the couple's situation. The results indicated that the marriage counselors were in significantly greater agreement with the counselees' views of their marriage situation than with the diagnosticians' view of the marriage diagnosed from the same completed sentences. Walker concluded from these results that the self-rating of sentence completion items was a fruitful method for testing for marriage difficulties.
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CHAPTER III

RESULTS AND DISCUSSION

As presented in Chapter I, the four hypotheses under consideration in this research are as follows:

I. Interpersonal responsiveness is significantly related to mental health.
II. Interpersonal responsiveness is not significantly related to intelligence.
III. Interpersonal responsiveness is significantly related to self-concept.
IV. Interpersonal responsiveness is significantly related to marital adjustment.

Statistical Analysis

For Groups I and II, Pearson product-moment correlation coefficients were computed between the "Draw-a-Group" scores and each of the seventeen variables obtained from the other three psychodiagnostic tests. Thus a total of thirty-four coefficients of correlation for these two groups was obtained. A Pearson product-moment correlation coefficient was also computed between the "Draw-a-Group" scores and the "Poly-factor" scores for Group III.

As previously stated, the .05 level of significance was required for rejection of the statistical hypotheses. In
order to ascertain the significance of the coefficients of correlation, critical values of the correlation coefficients were obtained from Ferguson (3, p. 315). A correlation value of .361 (28 df) was required for those computations in Group I, and, for computations in Groups II and III, a correlation value of .253 (58 df) was required for significance.

Means and Standard Deviations

The means and standard deviations for the criterion test (the "Draw-a-Group") and the predictor tests, with their sub-scales, are presented in Table I. Table II shows the means and standard deviations for the criterion test and the predictor test only.

The "Draw-a-Group" means for all groups were slightly lower than the average score of 2.50 obtainable on the test. This finding was consistent with data obtained by Cookerly (2) for the "Draw-a-Group" where approximately 70 percent of the scores fell between 1.3 and 3.3. Also consistent with Cookerly's data, the "Draw-a-Group" scores showed very low variability, which indicated that the psychiatric patients in the samples were quite consistent in interpersonal responsiveness, as measured by the "Draw-a-Group."

The means of self-concept for Groups I and II were considerably above the mathematically average score for the Self-Concept Scale of the "Draw-a-Person," which was 18.
### TABLE I

MEANS AND STANDARD DEVIATIONS FOR THE CRITERION TEST AND THE PREDICTOR TESTS, WITH THEIR SUB-SCALES, FOR GROUPS I AND II

<table>
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<th>Test</th>
<th>Group I (N = 30)</th>
<th>Group II (N = 60)</th>
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<td></td>
<td>Means</td>
<td>Standard Deviations</td>
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<td>&quot;Draw-a-Group&quot;</td>
<td>2.20</td>
<td>1.08</td>
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<td>Self-Concept Scale of the &quot;Draw-a-Person&quot;</td>
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<td>5.44</td>
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<td>Wechsler Scales</td>
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<td>Verbal Intelligence Quotient</td>
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<td>Performance Intelligence Quotient</td>
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<td>Full Scale Intelligence Quotient</td>
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<td>L scale</td>
<td>49.00</td>
<td>7.99</td>
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<tr>
<td>F scale</td>
<td>72.70</td>
<td>18.22</td>
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<td>K scale</td>
<td>72.70</td>
<td>18.22</td>
</tr>
<tr>
<td>HS--Hypochondriasis</td>
<td>61.63</td>
<td>19.29</td>
</tr>
<tr>
<td>D--Depression</td>
<td>64.23</td>
<td>13.94</td>
</tr>
<tr>
<td>Hy--Hysteria</td>
<td>63.50</td>
<td>13.48</td>
</tr>
<tr>
<td>Pd--Psychopathic deviate</td>
<td>74.83</td>
<td>12.90</td>
</tr>
<tr>
<td>Mf--Masculinity-Femininity</td>
<td>55.13</td>
<td>6.98</td>
</tr>
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<td>Pa--Paranoia</td>
<td>67.70</td>
<td>12.99</td>
</tr>
<tr>
<td>Pt--Psychasthenia</td>
<td>66.36</td>
<td>15.71</td>
</tr>
<tr>
<td>Sc--Schizophrenia</td>
<td>73.13</td>
<td>18.14</td>
</tr>
<tr>
<td>Ma--Hypomania</td>
<td>67.00</td>
<td>12.14</td>
</tr>
<tr>
<td>Si--Social Introversion</td>
<td>55.23</td>
<td>9.02</td>
</tr>
<tr>
<td>Test</td>
<td>Means</td>
<td>Standard Deviations</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Minnesota Multiphasic Personality Inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L scale</td>
<td>48.45</td>
<td>8.02</td>
</tr>
<tr>
<td>F scale</td>
<td>61.45</td>
<td>9.69</td>
</tr>
<tr>
<td>K scale</td>
<td>48.48</td>
<td>9.58</td>
</tr>
<tr>
<td>Hs--Hypochondriasis</td>
<td>62.80</td>
<td>15.20</td>
</tr>
<tr>
<td>D--Depression</td>
<td>71.15</td>
<td>14.93</td>
</tr>
<tr>
<td>Hy--Hysteria</td>
<td>66.46</td>
<td>12.25</td>
</tr>
<tr>
<td>Pd--Psychopathic deviate</td>
<td>69.55</td>
<td>12.89</td>
</tr>
<tr>
<td>Mf--Masculinity-Femininity</td>
<td>56.48</td>
<td>11.74</td>
</tr>
<tr>
<td>Pa--Paranoia</td>
<td>62.38</td>
<td>12.14</td>
</tr>
<tr>
<td>Pt--Psychasthenia</td>
<td>67.80</td>
<td>14.43</td>
</tr>
<tr>
<td>Sc--Schizophrenia</td>
<td>68.06</td>
<td>17.35</td>
</tr>
<tr>
<td>Ma--Hypomania</td>
<td>60.90</td>
<td>10.80</td>
</tr>
<tr>
<td>Si--Social Introversion</td>
<td>59.65</td>
<td>11.65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Draw-a-Group&quot;</td>
<td>2.10</td>
<td>.97</td>
</tr>
<tr>
<td>&quot;Polyfactor Test of Marital Difficulties&quot;</td>
<td>105.52</td>
<td>53.84</td>
</tr>
</tbody>
</table>

This result would seem to indicate that the subjects used in the samples were somewhat above average in self-concept. This indication was not a result one might expect in studying self-concept of psychiatric patients. However, normative data on psychiatric patients show a mean of 25.2 for the
scale, which was moderately lower than the means for Groups I and II.

Groups I and II showed intelligence quotient means within the average range, which is between 90 and 109. The lowest mean intelligence quotient obtained was 100.73, and the highest was 105.02. The variability of the intelligence quotients ranged from 10.98 to 13.74, which is lower than the standard deviation of 15.00 which has been established for the Wechsler scales (6, p. 3). The Wechsler scales were standardized using heterogeneous groups representative of the entire population of the United States. The lowering of variability among scores could, therefore, have been anticipated due to the relative homogeneity of the groups in this study relative to race, socioeconomic status, and mental status.

For Group I, Minnesota Multiphasic Personality Inventory scores ranged from 49.00 on the L scale to 74.83 on the Pd scale. These scores for Group II ranged from 48.45 on the L scale to 71.15 on the D scale. Since all subjects in Group I were adolescents, some elevation of the Pd scale was expected. Likewise, the elevation of the D scale was expected for the adults in Group II since most adults enter the hospital in at least a moderately depressed state.

The mean score on the "Polyfactor Test of Marital Difficulties" for Group III was 105.52, with a standard deviation of 53.84. Normative data were not available for the
"Polyfactor." However, data were available on husbands and wives entering marriage counseling (5). These data indicated that the husbands reported a mean amount of difficulty of 107.79, with a standard deviation of 58.13. The wives reported a mean of 138.76, with a standard deviation of 48.37. These findings would indicate that the husbands' reports of marital difficulty, which were found to be underrated when compared to the marriage counselor's view of the amount of difficulty, were more consistent with the reports of subjects in Group III of the current research than were the wives' reports. Since the subjects in Group III were not referred for marriage counseling, conclusions drawn on the basis of the two studies would be unreliable.

Correlational Data

The thirty-five Pearson product-moment correlation coefficients are presented in Table III. The correlations, which fell between -.231 and +.262, were all found to be nonsignificant.

Negative correlations were expected when relating interpersonal responsiveness to mental health or to marital adjustment as defined by this research. High "Draw-a-Group" scores represent very good interpersonal responsiveness, whereas high scores on the Minnesota Multiphasic Personality Inventory represent poor mental health, and high scores on the "Polyfactor" represent poor marital adjustment.
### TABLE III

PEARSON PRODUCT-MOMENT COEFFICIENTS OF CORRELATION COMPUTED BETWEEN THE CRITERION TEST AND THE PREDICTOR TESTS FOR GROUPS I, II, AND III

<table>
<thead>
<tr>
<th>Tests with which &quot;Draw-a-Group&quot; Correlated</th>
<th>Coefficients of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group I (N = 30)</td>
</tr>
<tr>
<td><strong>Self-Concept Scale of the &quot;Draw-a-Person&quot;</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.171</td>
</tr>
<tr>
<td><strong>Verbal Intelligence Quotient</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.050</td>
</tr>
<tr>
<td><strong>Performance Intelligence Quotient</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.156</td>
</tr>
<tr>
<td><strong>Full Scale Intelligence Quotient</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.110</td>
</tr>
<tr>
<td><strong>Minnesota Multiphasic Personality Inventory</strong></td>
<td></td>
</tr>
<tr>
<td><strong>L scale</strong></td>
<td>-.092</td>
</tr>
<tr>
<td><strong>F scale</strong></td>
<td>-.024</td>
</tr>
<tr>
<td><strong>K scale</strong></td>
<td>-.093</td>
</tr>
<tr>
<td><strong>Hs—Hypochondriasis</strong></td>
<td>.101</td>
</tr>
<tr>
<td><strong>D—Depression</strong></td>
<td>.003</td>
</tr>
<tr>
<td><strong>Hy—Hysteria</strong></td>
<td>.018</td>
</tr>
<tr>
<td><strong>Pd—Psychopathic deviate</strong></td>
<td>.059</td>
</tr>
<tr>
<td><strong>Mf—Masculinity-Femininity</strong></td>
<td>.262</td>
</tr>
<tr>
<td><strong>Pa—Paranoia</strong></td>
<td>-.152</td>
</tr>
<tr>
<td><strong>Pt—Psychasthenia</strong></td>
<td>-.098</td>
</tr>
<tr>
<td><strong>Sc—Schizophrenia</strong></td>
<td>-.122</td>
</tr>
<tr>
<td><strong>Ma—Hypomania</strong></td>
<td>-.231</td>
</tr>
<tr>
<td><strong>Si—Social Introversion</strong></td>
<td>.046</td>
</tr>
<tr>
<td><strong>&quot;Polyfactor Test of Marital Difficulty&quot;</strong></td>
<td>...</td>
</tr>
</tbody>
</table>

Theoretically, it was expected that persons with a high degree of interpersonal responsiveness would also show a high degree of mental health and a good marital adjustment.
The only correlation approaching significance was the one between the "Draw-a-Group" and the Depression scale of the MMPI for Group II. This correlational value of .232 was significant at the .10 level. Since all correlations between mental health and interpersonal responsiveness were insignificant at the 5 percent level, Hypothesis I was rejected.

No significant relationships between intelligence and the "Draw-a-Group" scores were expected. For Group I, the coefficients of correlation between interpersonal responsiveness and intellectual level ranged from .050 to .156. The correlations between interpersonal responsiveness and intellectual level for Group II ranged from .059 to .154. These correlations were not found to be significant at the .05 level. Hypothesis II was, therefore, accepted. There does not appear to be any relationship between interpersonal responsiveness as measured by the "Draw-a-Group" and intelligence as measured by either the Wechsler Adult Intelligence Scale or the Wechsler Intelligence Scale for Children.

A relationship between self-concept and the "Draw-a-Group" had been anticipated. However, the correlations between interpersonal responsiveness and self-concept were also nonsignificant, and Hypothesis III was rejected. The results failed to support the expectation that a significant relationship would exist between interpersonal responsiveness, as measured by the "Draw-a-Group" and self-concept, as measured by the Self-Concept Scale of the "Draw-a-Person."
Finally, the data failed to support the hypothesis that a significant relationship exists between interpersonal responsiveness and marital adjustment. As presented in Table III, the coefficient of correlation between the "Draw-a-Group" and the "Polyfactor" was found to be -.048. Although the relationship was in the expected direction, it was not significant and Hypothesis IV had to be rejected.

The results of this research have not successfully lent any further validation to the "Draw-a-Group" projective technique. At least, as the "Draw-a-Group" is now constituted, it does not appear to be related to other commonly employed constructs. In view of the many studies which have failed to validate projective techniques, perhaps the results of this research are not too surprising.

However, as has been noted by Carr, "... the validity of projective tests rests upon relating the inferences derived from them to numerous data concerning the patient's dynamic functioning at various levels of personality organization" (1, p. 619). In the final analysis, it might be necessary to do as Little has stated:

If projective techniques are to be other than examples of the ingenuity of psychologists and their interpretation other than a measure of the clinicians' verbal ability, then some modification of our present instrument is essential (4, pp. 81-82).

Perhaps for the "Draw-a-Group" some modification and re-evaluation of the scoring procedure should be attempted.
The current procedure of rating the entire area of interpersonal responsiveness on a scale from one to five seems inadequate. It would seem that interpersonal responsiveness might be broken down into several areas. If such be the case, then a scoring procedure might be utilized wherein each area can be rated separately in the drawing of a group. The separate ratings could then be summed, giving a total score of interpersonal responsiveness from each drawing. Such a procedure would be quite similar to the scoring procedure utilized for the Self-Concept Scale of the "Draw-a-Person." This procedure is more time-consuming than the one currently used for the "Draw-a-Group," but it could possibly be more accurate.

In the light of the findings of this research, it should be pointed out that any new instrument, whether an objective or a projective technique, necessarily starts out with no empirical validity. Such validity is only established after much carefully planned research using the instrument. However, before any instrument becomes widely acceptable, the validity of that instrument must be established.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Published research revealed exceptionally poor validity for all types of projective techniques. However, psychologists have felt that before any particular psychodiagnostic technique becomes widely used, validity should be established for that instrument. An attempt was, therefore, made to establish the validity of the "Draw-a-Group" test, a relatively new yet potentially valuable projective instrument. The purpose of this research was to clarify factors relating to interpersonal responsiveness as measured by the "Draw-a-Group" test. It was hypothesized that interpersonal responsiveness would be related to mental health, self-concept, and marital adjustment, but would not be related to intelligence.

In order to test these hypotheses, 150 psychiatric patients were given the "Draw-a-Group" test. These 150 subjects were divided into three groups. Group I was composed of 30 adolescents, and Groups II and III were each composed of 60 adult patients. Each subject in Groups I and II were also given the Minnesota Multiphasic Personality Inventory as a measure of mental health, the "Draw-a-Person" as a measure of self-concept, and a Wechsler intelligence scale.
as a measure of intelligence. In addition, subjects in Group III were given the "Polyfactor Test of Marital Difficulties" as a measure of marital adjustment. The "Draw-a-Group" scores for Groups I and II were correlated with T-scores on the thirteen MMPI scales, with the Self-Concept Scale of the "Draw-a-Person," and with the three intelligence quotients obtained from the Wechsler scale. The "Draw-a-Group" scores for Group III were correlated with the total score on the "Polyfactor" test.

All r-values were found to be nonsignificant, ranging from -.231 to +.262. On the basis of the correlations, it was concluded that interpersonal responsiveness, as measured by the "Draw-a-Group" is not related to mental health, self-concept, intelligence, or marital adjustment.

For further research on the "Draw-a-Group," it was recommended that a revised scoring procedure be developed. In addition, future validity studies should use predictive tests which can be applied more directly to interpersonal responsiveness, such as measures of social maturity, group behavior, and feelings of emotional closeness to others.

In future research with the "Draw-a-Group," it might be recommended that reliability studies also be included. Inter-judge reliability should be reestablished, and an attempt should be made to ascertain test-retest reliability.
BIBLIOGRAPHY

Books


Libo, Lester M., Measuring Group Cohesiveness, Ann Arbor, Michigan, University of Michigan, 1953.


Machover, Karen, Personality Projection in the Drawing of the Human Figure, Springfield, Illinois, Charles C. Thomas, 1949.


Articles


Roback, Howard B., "Human Figure Drawings: Their Utility in the Clinical Psychologists' Armamentarium for Personality Assessment," *Psychological Bulletin*, 70 (January, 1968), 1-19.


Swenson, Clifford H., Jr., "Empirical Evaluations of Human Figure Drawings," *Psychological Bulletin*, 54 (November, 1957), 431-466.

---

Swenson, Clifford H., Jr., "Empirical Evaluations of Human Figure Drawings," *Psychological Bulletin*, 70 (January, 1968), 20-44.

Publication of Learned Organization


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