INFORMATION TO USERS

This material was produced from a microfilm copy of the original document. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the original submitted.

The following explanation of techniques is provided to help you understand markings or patterns which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting thru an image and duplicating adjacent pages to insure you complete continuity.

2. When an image on the film is obliterated with a large round black mark, it is an indication that the photographer suspected that the copy may have moved during exposure and thus cause a blurred image. You will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., was part of the material being photographed the photographer followed a definite method in "sectioning" the material. It is customary to begin photoing at the upper left hand corner of a large sheet and to continue photoing from left to right in equal sections with a small overlap. If necessary, sectioning is continued again — beginning below the first row and continuing on until complete.

4. The majority of users indicate that the textual content is of greatest value, however, a somewhat higher quality reproduction could be made from "photographs" if essential to the understanding of the dissertation. Silver prints of "photographs" may be ordered at additional charge by writing the Order Department, giving the catalog number, title, author and specific pages you wish reproduced.

5. PLEASE NOTE: Some pages may have indistinct print. Filmed as received.

Xerox University Microfilms
300 North Zeeb Road
Ann Arbor, Michigan 48106

Downloaded from SHAREOK. Persistent Handle URL: https://hdl.handle.net/11244/4185

77-1835

LOUTHAN, George R., 1936-
A COMPARISON OF HAND TEST RESPONSES OF EDUCABLE MENTALLY RETARDED ADOLESCENTS PLACED IN A SPECIAL EDUCATION CLASSROOM AND EDUCABLE MENTALLY RETARDED ADOLESCENTS IN A REGULAR CLASSROOM.

The University of Oklahoma, Ph.D., 1976
Education, special

Xerox University Microfilms, Ann Arbor, Michigan 48106

THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A COMPARISON OF HAND TEST RESPONSES OF EDUCABLE MENTALLY RETARDED ADOLESCENTS PLACED IN A SPECIAL EDUCATION CLASSROOM AND EDUCABLE MENTALLY RETARDED ADOLESCENTS IN A REGULAR CLASSROOM

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

BY

GEORGE R. LOUTHAN

Norman, Oklahoma

1976

A COMPARISON OF HAND TEST RESPONSES OF EDUCABLE MENTALLY RETARDED ADOLESCENTS PLACED IN A SPECIAL EDUCATION CLASSROOM AND EDUCABLE MENTALLY RETARDED ADOLESCENTS IN A REGULAR CLASSROOM

APPROVED BY

R E Ragland

Charlyce King

Gene Pingleton

Lloyd P. Williams

DISSERTATION COMMITTEE

ACKNOWLEDGMENTS

The writer wishes to express his sincere thanks to the members of his committee, Dr. Robert E. Ragland (Chairman), Dr. Charlyce R. King, Dr. George G. Pingleton and Dr. Lloyd P. Williams, for their guidance and support in the writing of this dissertation.

The writer also wishes to thank all the students, their parents and the Oklahoma City Board of Education for their cooperation during this study. Sincere appreciation is also extended to Leslie Steele, who aided the writer in this study.

Finally and most importantly, the writer must express his sincere appreciation to his wife, Burchie, son, George, and daughter, Kelly, without their support and understanding this paper would never have been written.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENT iii

LIST OF TABLES v

LIST OF APPENDICES vi

Chapter

I. INTRODUCTION. 1

II. REVIEW OF RELATED LITERATURE. 7

III. STATEMENT OF THE PROBLEM. 14

Significance of the Study. 14
Hypotheses to be Tested. 15

IV. METHODOLOGY 16

The Instrument 16
The Subjects 18

Subjects in Special Education Classroom . 19
Subjects in Regular Classroom 19

Administration of the Hand Test. 20
Scoring of the Hand Test 21

V. RESULTS. 22

Hypothesis One 22
Hypothesis Two 23

VI. DISCUSSION OF RESULTS AND CONCLUSIONS. 24

VII. SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH. . 28

Summary. 28
Limitations of the Study 29
Suggestions for Future Research. 30

REFERENCES 31

LIST OF APPENDICES 35

LIST OF TABLES

Table		Page
1.	Results of Testing Hypothesis One	22
2.	Results of Testing Hypothesis Two	23
3.	Responses of EMR In Program Ss.	26
4.	Responses of EMR Not In Program Ss.	27

LIST OF APPENDICES

Appendix		Page
A.	Stimulus Items of the Hand Test	35
B.	Demographic Data on EMR In Program Subjects.	37
C.	Demographic Data on EMR Not In Program Subjects.	39
D.	Scoring Categories of the Hand Test	41
E.	Analysis of Individual Responses of EMR In Program Subjects on the Hand Test. . . .	49
F.	Analysis of Individual Responses of EMR Not In Program Subjects on the Hand Test	51

A COMPARISON OF HAND TEST RESPONSES OF EDUCABLE MENTALLY RETARDED ADOLESCENTS PLACED IN A SPECIAL EDUCATION CLASSROOM AND EDUCABLE MENTALLY RETARDED ADOLESCENTS IN A REGULAR CLASSROOM

CHAPTER I

INTRODUCTION

A new educational concept being praised and often misinterpreted is 'mainstreaming.' Two of the tenets of mainstreaming that appear to have gained wide acceptance in the field of special education are: (1) The placement of educable mentally retarded (EMR) students in a 'segregated' special education classroom restricts the EMR children's social interaction with their peer group and retards development of their social skills. (2) Placement of the EMR child in a special education classroom does not properly equip the child to adequately come to grips with his environment.

This study was carried out to test the validity of those two tenets by comparing the EMR adolescent placed in a special education classroom with the EMR adolescent placed in a regular classroom. The instrument used was the Hand Test, a projective technique developed by Edwin E. Wagner in 1959.

The Hand Test, a book by Bricklin, Piotrowski, and Wagner (1972), clarified the scoring system and discussed the predictive value of the test.

The two summation scores used in this study were: (1) Interpersonal (INT) and Environmental (ENV). The INT score involves relations with other people; an absence or dearth of INT responses always has a negative connotation. (2) The ENV scores are assumed to represent generalized attitudes toward the impersonal world, i.e., a readiness to respond to or come to grips with the environment in a characteristic fashion. This experimenter (E) was concerned with finding out whether or not there were significant differences between the Hand Test responses of the EMR adolescent in the special education classroom and the EMR adolescent in the regular classroom. E felt that those two scores would best represent to what degree the EMR adolescents were relating, growing socially, and to what degree the students were learning to adequately cope with their environment.

Projective tests and projective techniques have been a highly controversial area of behavioral science for many years. Projective tests and techniques consist basically of sets of ambiguous stimuli. The subject (S), when perceiving the stimuli, projects or reflects aspects of his psychological functioning.

Projection is a process whereby the S's internal perceptions play a large part in determining the form taken by

the external world. The concept of projection, projective tests, and projective techniques did not originate with Wagner in 1959. The phenomenon of projection has probably existed since the first man gazed at cloud formations, or looked into moving water and perceived different shapes and figures.

Freud used the term projection in 1895 to refer to a normal process (Rorschach, 1942, p. 13), and again in 1911 as a pathological concept (Rycroft, 1968, p. 126). About this latter time, Rorschach was carrying out experiments which resulted in the present Rorschach Test (Rorschach, 1942). Others have since tried to analyze and separate the various components of the concepts of projection (Bell, 1948, Murstein, 1965, Schafer, 1954).

Analysis of the responses in projective techniques is based generally upon the theory that the individual responses are organized into a total Gestalt, the discovery of which is the primary goal of the examiner (Bell, 1948). Klinger (1971) believes that the S's responses are related to current concerns and, in addition, involve self-organization. Generally, it appears that when Ss respond to projective tests or techniques they are responding with their current concerns.

Gardner Lindzey (Lindzey, 1961, Kleinmuntz, 1967, p. 261) discussed the projective technique or test as follows: an instrument considered especially sensitive to covert, or unconscious aspects of behavior, it permits, or encourages a wide variety of S responses, is highly multidimensional, and

it evokes unusually rich, or profuse response data with a minimum of S awareness concerning the purpose of the test." English and English (1968) added that such a test involves "A relatively unstructured ambiguous, or vague situation." It is expected that the test materials will serve as a sort of screen on which the S projects his characteristic thought process, needs, anxieties, and conflicts (Anastasi, 1968).

In relating personality to projective techniques and projective tests, Zubin (1965) states that there has been a view among clinical psychologists that what people see or perceive in a given stimulus is not determined by the stimulus properties alone. The final percept depends also on the characteristics of the perceiver. This view has been accepted not only by psychologists, but also by philosophers such as Nietzche, who considered all concepts inspired by needs, and by artists, who point out that no two artists will paint identical portraits of the same individual (p. 151).

Some of the better known projective techniques at this time would be: Blacky Pictures, Children's Apperception Test (CAT), Four Picture Test, House-Tree-Person Projective Technique (HTP), Holtzman Inkblot Technique, Kent-Rosanoff Free Association Test, the Machover Draw a Person Test, Make a Picture Story (MAPS), Rhode Sentence Completion Test, the Rorschach, the Rosenzweig Picture-Frustration Study (P-F Study), the Rotter Incomplete Sentences Blank, the Szondi Test, the Thematic Apperception Test (TAT), the Tompkins Horn Pictures

Arrangement Test (PAT), and the Toy World Test (Rabin, 1968, Anastasi, 1968).

One of the newer projective techniques is the Hand Test originated by Wagner in 1959. His first published research was in 1961. Wagner believed that drawings of human hands would make very good stimulus items for a projective technique since our hands are so important to our lives. Touching plays a major role in communicating and the expressing of our inner selves. Wagner believed that if the drawings of hands in the various positions were ambiguous enough, the S would respond to the stimuli with his individual interpretations. Bricklin, Piotrowski, and Wagner (1962) provided the rationale and original scoring system for the Hand Test in a monograph entitled The Hand Test: A New Projective Test with Special Reference to the Prediction of Overt Aggressive Behavior. Wagner, in 1962, published the first manual with a slightly modified scoring system. A revision of the 1962 Hand Test, was published in 1969, by the Western Psychological Services. The Hand Test, a book by Bricklin, Piotrowski, and Wagner (1972) attempted to clarify the scoring system and discuss the predictive value of the test.

One of the claims made for the Hand Test is that it can predict overt aggressive behavior. Wagner and other researchers, who will be cited in the review of the literature in the following chapter, have found significant differences between the Hand Test responses of aggressive and non-aggressive Ss;

however, none of these studies provides any data about the interpersonal (INT) scores or environmental (ENV) scores. None of these studies provides any data using these two scores in comparing the Hand Test responses of educable mentally retarded (EMR) adolescents placed in a special education classroom and EMR adolescents placed in a regular classroom.

This study is concerned with finding out whether or not there are significant differences between the Hand Test INT and ENV responses of the EMR adolescents placed in a special education classroom and the EMR adolescents placed in a regular classroom. The significance of this study lies in the addition of data about these two very important reference groups to the existing Hand Test data.

CHAPTER II

REVIEW OF THE LITERATURE

Because the Hand Test is a relatively new test, there has not been a great deal of research done. Much of existing research was done in attempting to classify or diagnose schizophrenics by their responses to the Hand Test. Wagner (1961, 1962, 1966, 1970), Wagner and Medvedeff (1963), and Hodge and Wagner (1964) published studies showing that basic personality attributes are identified by the Hand Test and that it successfully discriminated aggressive and non-aggressive patients within a population of undifferentiated schizophrenics. Wagner (1963) conducted a study using the Hand Test in an attempt to identify male neurotics with marked psychosexual problems. His conclusion was that it was able to identify the male neurotics with marked psychosexual problems; the results were significant at the .02 level.

Several researchers have carried out research to establish norms for dull normal and mentally retarded children on the Hand Test. Capotosto (Wagner, 1971) developed means on imbeciles and morons; Gloss (Wagner, 1971) established means on nine age groups of students (seven through fifteen years) in the Tallmadge, Ohio, School District, Loftus (Wagner, 1971) reported the means on a stratified sample of boys (mean age =

14.6) from a technical high school in Adelaide, Australia. Dougherty (Wagner, 1971) compared the Hand Test responses of normal and dyslexic children, and found that the dyslexic children gave more tension responses which was significant at the .01 level. The children were selected from the fourth, fifth, and sixth grades. Roberts (1971) compared the responses of mentally retarded and bright children on the Hand Test. This study revealed significant differences between the mentally retarded children and the bright children in their attitudes towards others, in strivings for distant goals, status, and power.

Viers (Wagner, 1971) established norms for 197 children from kindergarten through the third grade. Thetford (1972) established norms for deaf school age children on the Hand Test. The Ss were enrolled in the Oklahoma State School for the Deaf, a residential school with an academic and vocational curriculum. The responses of the deaf children were quite similar to the responses of the normal children in Viers' study. No statistical procedures were attempted by Thetford due to the smallness in variations between the responses of the deaf and normal children. Levine (1974) used the Hand Test to assess the personality patterns of deaf persons. She found significant discrimination among four deaf groups with 20 of the 24 Hand Test variables.

There have been several attempts to use the Hand Test as a predictive instrument for "good workers." Wagner and

Cooper (1963) used the active score (ACT)[1] to differentiate between good and poor workers. The study was conducted at Goodwill Industries in Akron, Ohio. The workers' evaluations by their supervisors and the personnel director were used as the criterion measures of the workers' efficiency. The Hand Test correctly differentiated 45 out of 50 workers, a finding which was statistically significant at the .001 level. Huberman (1964) attempted to cross-validate Wagner and Cooper's findings in a study done in a large Douglas Fir Plywood Mill on the Canadian West Coast. Huberman's study did not support the findings of Wagner and Cooper.

In a test battery to develop predictors of workshop success for the severely retarded adults, Wagner and Hawver (1965) implemented the ACT scores of the Hand Test along with seven other tests. Their results for the eight tests were highly significant for the predictive value for each of the eight tests. They urged caution in the interpretation of the results because of no opportunity to cross validate, the small sample size, and the possibility that the tests may have measured present performance rather than skills that the Ss had prior to entering the workshop.

Wagner and Capotosto (1966) used the Hand Test to predict good and poor workers. This study was conducted at the Lincoln State School in Illinois. The test was able to successfully discriminate between the good workers who required

---

[1]See scoring categories of the Hand Test in Chapter IV.

little supervision and the poor workers who required a great deal of supervision. The Hand Test was able to correctly differentiate seventy-four per cent of the Ss. This was significant at the .01 level of confidence. Rand and Wagner (1973) conducted a study using the entire police force of Cuyahoga Falls, Ohio. Significant correlations were obtained with supervisory rankings of satisfactory work performance of the 42 Ss. The results were that the more successful policeman was less dependent upon other people for need fulfillment, less overly aggressive, more environmentally oriented, less fearful, and less concerned with relating to people than the less successful counterpart.

Hardesty (1973) used the Modified Hand Test and Pictorial Study of Values to differentiate between successful and unsuccessful educable mentally retarded work-study students. The Ss were from the Oklahoma City Public Schools and were composed of 50 students placed in a secondary work-study program for the educable mentally retarded. In addition to the regular stimulus cards from the Hand Test, Hardesty employed cards depicting female's and children's hands. The ACT score was the only one which significantly differentiated between the successful and unsuccessful workers.

Wagner (1971) claims that the Hand Test can predict overt aggressive behavior as an indicator of anti-social, inflexible, and interpersonal aggression among delinquents. Several studies have been conducted to differentiate between

aggressive and non-aggressive Ss. Ascarate and Gutierres (1969) used the Hand Test to measure the institutional adjustment of juvenile delinquents. They investigated the sensitivity of the acting out responses (AOR) (see Footnote 1) and the maladjustive (MAL) response scores on the Hand Test in assessing institutional adjustment in a group of 80 male juvenile delinquents and to determine the advantage of using both scores combined rather than the AOR score alone. Highly significant X^2 values were obtained which indicated that the AOR $\geq$ 1 and MAL $\leq$ 4 is related to acting out behavior while an AOR $\leq$ 1 and, or MAL $\leq$ 3 is related to good institutional adjustment. Further research was suggested to assess the efficiency of the technique as a screening device in an institutional setting.

Using the Hand Test, King (1973) made a comparison of responses of aggressive and non-aggressive black adolescents. He used black male adolescents attending alternative schools for delinquent minors and non-aggressive black adolescents attending junior and high school in the public schools. There were 52 Ss in each group. No significant differences were found in the ACT, AFF, and WITH (see Footnote 1) scores of the aggressive and non-aggressive black male adolescents.

Munroe (1973) developed norms for the educable mentally retarded and intellectually bright adolescents on a Modified Hand Test. Munroe's research was conducted to determine experimentally to what extent Ss may respond differentially to drawings involving male, female, and children's hands. Since no

hypotheses were proposed nor tested in this study, no statistical procedures were formulated with the data other than what was used for the normative representation.

There have been several studies using the Hand Test with Ss from foreign countries. Neuber (Wagner, 1971) developed norms for natives of Guam. The samples (elementary school children, high school students, college students, and Guamanian adults) made significantly more responses than were found in research carried out in the United States. Wagner judged this finding to be meaningful and thought that the Hand Test could reflect in an objective manner inter-cultural differences. Putoff (1972) developed norms on the Hand Test for first, second, and third grade bilingual children in west Texas. A total of 312 children were individually administered the Hand Test and the Peabody Picture Vocabulary Test (PPVT). Only two statistically significant negative correlations were found: (1) "Female bilingual children in grade one and male children in grade two did not have difficulty in carrying out action tendencies in order to achieve need satisfaction." (2) "The number of responses of the children who employed English as a second language was less than their counterparts in Guam." Khorramzadeh (1975) used the Hand Test in his research with higher education and non-higher education Iranian students in the state of Oklahoma. He found no significant differences in the median scores of the higher education and the non-higher education Ss' responses to the Hand Test.

There has been some criticism of the Hand Test, Wagner (1973) defended the test by responding to a critical study by Higdon and Brodsky. Wagner's thesis was that the authors had not read the test manual and that they chose to validate the test against criteria which had little to do with what the test purported to measure.

More relevant to the present study, however, would be Hand Test research which has been done comparing groups of EMR adolescents in different settings. It appears that there has been none.

There has been little research done using the Hand Test since 1971, with the exception of the University of Oklahoma's graduate students doctoral dissertations. Wagner has not published any Hand Test research since 1974.

CHAPTER III

STATEMENT OF THE PROBLEM

The problem being investigated in this study is: Are the interpersonal (INT) and the environmental (ENV) scores on the Hand Test by educable mentally retarded (EMR) adolescents placed in a special education classroom significantly different from the scores of the EMR adolescents placed in a regular classroom? This will be done by administering the Hand Test, using standard procedures (as per Wagner, 1971) to (a) one group of EMR adolescents placed in a special education classroom and (b) another group of EMR adolescents who have been placed in a regular classroom. Both groups have been tested by a qualified school psychometrist employing standardized intelligence tests.

The scoring categories that will be of primary importance in this study are: (1) interpersonal (INT), (2) environmental (ENV).[1]

Significance of the Study

The significance of the study is two fold:

1. This study provides the addition of an important reference group, EMR students in a special education classroom

[1]The reader is referred to the discussion of the scoring categories of the Hand Test in the following chapter.

compared to EMR students in a regular classroom.

2. This study will provide data concerning the value of placement of the EMR adolescent in special education as a means of improving the child's self concept, his social interaction, and his ability to cope with the environment.

Hypotheses Tested

Hypothesis 1: There is no significant difference between the median interpersonal (INT) scores of the educable mentally retarded (EMR) adolescent placed in a special education classroom, and the median INT score of the EMR adolescent placed in a regular classroom to the Hand Test stimuli.

Hypothesis 2: There is no significant difference between the median environmental (ENV) score of the EMR adolescent placed in a special education classroom, and the median ENV score of the EMR adolescent placed in a regular classroom to the Hand Test stimuli.

CHAPTER IV

METHODOLOGY

The Instrument

The Hand Test is a projective technique originated by Wagner in 1959, and developed by Bricklin, Piotrowski, and Wagner (1962). It consists of a book, The Hand Test Manual (Wagner, 1971), a tablet of Hand Test summary sheets, and ten 3" x 5" stimulus cards, nine of which contain drawings of human hands (the tenth card is blank). Appendix A shows the drawings of hands as depicted on the stimulus cards. The S responds to each of the stimulus cards by telling the E what he thinks the hand is doing.

Wagner (1971) ascertained the reliability and validity of the Hand Test using the records compiled from his original sample (N = 1, 020). Wagner used the Spearmen-Brown split-half reliability coefficients. The reliability coefficients were computed independently by each of three scorers with the following results: scorer A, .85, scorer B, .84, scorer C, .85. Concurrent validity was established by comparing the results obtained in the normative groups to the results of "known groups", i.e., 'normal' adults, inmates of a state penitentiary, psychiatric patients, idigents, mental retardates, and 'normal' children and teenagers.

The responses to the Hand Test may fall into one of fifteen categories. Each of the S's responses to the stimulus cards must be categorically scored as predominantly exhibiting or falling into one of the following categories, as defined by Wagner (1971):

(1) Affection (AFF)
(2) Dependence (DEP)
(3) Communication (COM)
(4) Exhibition (EXH)
(5) Direction (DIR)
(6) Aggression (AGG)
(7) Acquisition (ACQ)
(8) Active (ACT)
(9) Passive (PAS)
(10) Tension (TEN)
(11) Crippled (CRIP)
(12) Fear (FEAR)
(13) Description (DES)
(14) Failure (FAIL)
(15) Bizarre (BIZ)

In addition, there are four summation scores which represent different combinations from the fifteen categories above. Wagner (1971) defines these summation scores as follows:

> Interpersonal, INT: AFF, DEP, COM, EXH, DIR, and AGG are combined to form the INT response. INT responses are those involving relations with other people. . . an absence of dearth of INT always has a negative connotation.
>
> Environmental, ENV: ACQ, ACT, and PAS scores are combined to form the ENV responses. ENV responses are assumed to represent generalized attitudes toward the impersonal world, i.e., a readiness to respond, or come to grips with the environment in a characteristic fashion.
>
> Maladjustive, MAL: TEN, CRIP, and FEAR responses are combined to form the MAL responses. MAL responses represent difficulty of

which the individual is at least partially aware, in successfully carrying out various action tendencies, because of subjectively experienced inner weakness and, or external prohibition. MAL responses indicate apprehension and distress arising from a failure to achieve need satisfactions and is more characteristic of the neurotic than the psychotic.

Withdrawal, WITH: DES, FAIL, and BIZ responses are combined to form the WITH responses. WITH responses represent those whose adjustive potential has been interfered with by subjective feelings of stress which dampen interpersonal and environmental tendencies: the psychotic however has found realistic interaction with people, objects, and ideas so traumatic, difficult, and non-reinforcing that meaningful, effective life roles have been partially or completely abandoned. The WITH score reflects this abandonment.

Wagner (1971) also specified some other scoring categories, so that a S's responses may be adjudged by the scorer to be of sexual content (SEX), immature (IM), inanimate content (INAN), hiding content (HID), sensual content (SEN), internalization content (IN), denial content (DEN), and movement content (MOV).

The Subjects

Educable mentally retarded adolescents placed in a special education classroom (EMR in Program) (N = 19) were selected to match the educable mentally retarded adolescents placed in a regular classroom (EMR Not in Program) (N = 19) as

closely as possible in respect to sex, grade level, IQ, and chronological age. Both groups had been tested by a certified psychometrist, using the Wechsler Intelligence Scale for Children (WISC). All EMR in Program Ss scored in the educable range (50-75). Their mean age was 13-3, and the mean IQ was 68. (Appendix B lists the demographic data on these EMR in Program Ss)

It was difficult to locate students who qualified for placement as EMR who were not placed in some type of special education program (mainstreamed, semi-mainstreamed, and self-contained classrooms). The EMR Not in Program students were in the sixth, seventh, and eighth grades in an Oklahoma City Middle School. All Ss in this group scored within the educable range (50-75) on the WISC, with the exception of one student (Full scale WISC = 85) who was recommended for placement in a class for the EMR by a qualified psychometrist. The mean age for the EMR Not in Program group was 13-4, the mean IQ was 75.
(Appendix C lists the demographic data on these EMR Not in Program Ss)

In compliance with the wishes of the Oklahoma City Board of Education, no students were taken from their classes to be given intelligence tests. All IQ scores were taken from tests administered by qualified psychometrists employed by the Oklahoma City Board of Education. All test sheets were coded to insure confidentiality. The procedures prescribed by the

Oklahoma City Board of Education were followed in obtaining the permission from the board of education, the individual school, and the parent's permission prior to conducting any testing.

Administration of the Hand Test

All of the Hand Tests were administered individually to each S in the study. The tests were given by this E and one other graduate student, who is a guidance counselor and has a great deal of experience in administering individual tests including personality and projective tests. This E has some experience in administering individual tests; both examiners were employed by the Oklahoma City Board of Education.

The procedure followed in the administration of each test was as prescribed by Wagner (1971). Before administering the Hand Test time was taken to establish rapport with each S. The administrator and the testee were seated comfortably facing each other across a table. The administrator began by saying, "I have here a number of cards on which pictures of hands are drawn. I'm going to show you the cards one at a time and I want you to tell me what it looks like the hands might be doing." The first card was then turned up and the examiner said, "For example, what might this hand be doing?" The subject was permitted and encouraged to take the cards and examine the drawings. When the S was through responding to the first card it was placed face down on the table and the second card was turned up. This procedure continued until the last card was

reached, at which time the E said, "This card is blank. I would like you to imagine a hand and tell me what it might be doing."

If on the first card or any other card the S gave a short stereotyped, descriptive response such as "it's up" or "it's down" the E prompted the S by asking, "what is it doing?"

When the initial failure to respond to a card stimulus occurred (i.e., S could not supply a scorable response) the E said, "Can you take a guess?" If the S continued to fail on that card or subsequent cards nothing more was said by the E.

Scoring of the Hand Test

To avoid tester bias and attain greater objectivity, all scoring was done by a graduate student (who is a guidance counselor) who had no knowledge of the hypotheses being tested, and who was not involved in administering the tests.

The procedure for scoring outlined by Wagner (1971) was followed. (Appendix D lists the scoring categories and examples of S responses as explained by Wagner.)

CHAPTER V

RESULTS

Hypothesis One

H_1: There is no significant difference between the median interpersonal (INT) scores of the educable mentally retarded (EMR) adolescents placed in a special education classroom, and the median INT score of the EMR adolescent placed in a regular classroom to the Hand Test stimuli. H_1 was tested by using the Median Test (Downie and Heath, 1974, p. 31). Table 1 gives the results of testing the hypothesis.

Table 1

RESULTS OF TESTING H_1

	INT ≥ 6	INT < 6
EMR in Program	11	8
EMR Not in Program	8	11

$df = 1$

$X^2 = .44$

$P > .05$

The median number of INT responses for the combined group was 5.68. More of the EMR in Program Ss scored above the joint median than did the EMR Not in Program Ss but the results were not significant. The obtained value of chi square

($X^2 = .44$), using Yate's correction for continuity, was not sufficient to warrent the rejection of H_1.

Hypothesis Two

H_2: There is no significant difference between the median environmental (ENV) scores of the EMR adolescents placed in a special education classroom, and the median ENV scores of the EMR adolescents placed in a regular classroom to the Hand Test stimuli. The results of testing H_2 are presented in Table 2.

Table 2

RESULTS OF TESTING H_2

	ENV $\geq$ 3	ENV < 3
EMR in Program	10	9
EMR Not in Program	8	11

df = 1

$X^2 = .12$

P > .05

The joint median for both groups was 3.0. Again more of the EMR in Program scored above the joint median than did the EMR Not in Program Ss but the obtained value of X^2, using Yate's correction for continuity, did not warrent the rejection of H_2.

CHAPTER VI

DISCUSSION OF RESULTS AND CONCLUSIONS

This study was concerned with finding out if there was a significant difference between the Hand Test responses of the EMR in Program students and the EMR Not in Program students, using the Hand Test's INT (interpersonal) and ENV (environmental) scores. The study revealed no significant differences between the responses of the two groups.

Interpersonal (INT) scores are found by adding the sums of the following categories: AFF (affection), DEP (dependence), COM (communication), EXH (exhibition), DIR (direction), and AGG (aggression). These are responses involving relations with other people; an absence or dearth of INT always has a negative connotation. Tables 3 and 4 show a comparison of the responses given by EMR in Program and EMR Not in Program Ss in the various scoring categories as a result of being administered the Hand Test. The EMR in Program Ss gave 55.30% INT responses and the EMR Not in Program Ss gave 45.69%; this was not statistically significant.

Environmental (ENV) scores are found by adding the sums of the following categories; ACQ (acquisition), ACT (active), and PAS (passive). These responses are assumed to represent generalized attitudes toward the impersonal world,

i.e., a readiness to respond to, or come to grips with the environment in a characteristic fashion. The EMR in Program Ss gave 28.57% ENV responses as opposed to 29.96% by the EMR Not in Program Ss. This was not statistically significant.

E noted that in some of the scoring categories there appeared to be large differences between the two groups in their responses to the Hand Test. Therefore, E ran a chi-square (Downie and Heath, 1974, p. 31, p. 265, p. 196) using median scores for each of the nineteen scoring categories of the Hand Test; no significant difference was found.

Table 3

RESPONSES OF EMR IN PROGRAM Ss

(N = 19)

Scoring Categories	Hands H_1	H_2	H_3	H_4	H_5	H_6	H_7	H_8	H_9	H_{10}	TOTAL	
AFF	11	4	0	9	2	1	3	0	2	2	34	15.67%
DEP	0	0	0	1	0	0	0	0	0	0	1	.46%
COM	1	2	17	0	0	1	2	2	3	3	31	14.29%
EXH	1	2	1	1	3	1	0	1	3	0	13	5.99%
DIR	6	1	3	0	0	1	3	0	0	1	15	6.91%
AGG	1	1	0	1	3	12	4	1	0	3	26	11.98%
INT	20	10	21	12	8	16	12	4	8	9	120	55.30%
ACQ	0	3	0	2	2	0	0	1	1	0	9	4.15%
ACT	1	6	0	3	4	4	3	13	5	9	48	22.12%
PAS	0	0	0	2	2	0	1	0	0	0	5	2.30%
ENV	1	9	0	7	8	4	4	14	6	9	62	28.57%
TEN	0	0	0	0	0	1	0	1	1	1	4	1.84%
CRIP	0	2	0	0	2	0	0	0	1	0	5	2.30%
FEAR	0	0	0	0	0	0	0	0	0	0	0	0.00%
MAL	0	2	0	0	2	1	0	1	2	1	9	4.15%
DES	2	4	1	1	2	1	3	1	4	1	20	9.22%
FAIL	0	0	0	0	1	0	1	0	0	2	4	1.84%
BIZ	0	0	0	0	2	0	0	0	0	0	2	.92%
WITH	2	4	1	1	5	1	4	1	4	3	26	11.98%
DIR + AGG	7	2	3	1	3	13	7	1	0	4	41	18.89%
TOTAL	23	25	22	20	23	22	20	20	20	22	217	100.00%

Table 4

RESPONSES OF EMR NOT IN PROGRAM Ss

(N = 19)

Scoring Categories	Hands H_1	H_2	H_3	H_4	H_5	H_6	H_7	H_8	H_9	H_{10}		TOTAL
AFF	12	1	0	5	2	0	5	0	0	5	30	15.23%
DEF	0	0	0	1	0	0	2	0	2	1	6	3.05%
COM	0	0	16	0	1	0	0	0	3	2	22	11.17%
EXH	1	1	0	0	0	0	0	1	1	0	4	2.03%
DIR	3	1	3	1	0	1	3	1	0	1	14	7.11%
AGG	0	1	0	1	0	15	4	1	1	1	24	12.18%
INT	6	4	19	8	3	16	14	3	7	10	90	45.69%
ACQ	0	2	0	4	3	1	0	0	1	0	11	5.58%
ACT	0	5	0	2	5	2	2	15	3	10	44	22.34%
PAS	0	0	0	1	2	0	1	0	0	0	4	2.03%
ENV	0	7	0	7	10	3	3	15	4	10	59	29.95%
TEN	0	0	0	0	0	0	0	0	0	0	0	0.00%
CRIP	0	1	0	0	2	0	0	0	0	0	3	1.52%
FEAR	0	0	0	0	0	0	0	0	0	0	0	0.00%
MAL	0	1	0	0	2	0	0	0	0	0	3	1.52%
DES	1	4	0	1	2	0	2	0	3	0	13	6.60%
FAIL	3	2	1	4	3	0	1	1	5	1	21	10.66%
BIZ	0	1	0	0	0	0	0	0	0	0	1	.51%
WITH	4	7	1	5	5	0	3	1	8	1	35	17.77%
DIR + AGG	3	2	3	2	0	16	7	2	1	2	38	19.29%
TOTAL	20	19	20	20	20	19	20	19	19	21	197	100.00%

CHAPTER VII

SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH

Summary

Hand Tests were administered to one group of EMR in Program Ss (N = 19) and one group of EMR Not in Program Ss (N = 19). The EMR in Program Ss were educable mentally retarded adolescents who had been placed in a special education classroom. They had a mean age of 13 years, 3 months and a mean IQ of 68, and were attending an Oklahoma City Middle school.

The EMR Not in Program Ss were educable mentally retarded adolescents placed in a regular classroom who were also attending an Oklahoma City Middle school. These Ss had a mean age of 13 years, 4 months and a mean IQ of 75.

The study was conducted to find out if differences in the responses of these two groups to the Hand Test stimuli was statistically significant at the .05 level of confidence. The study found no such differences.

Two hypotheses were tested by using a Median Test (Downie and Heath, 1974). The results of testing the hypotheses were as follows:

1. There was no significant difference between the EMR in Program and EMR Not in Program Ss on the INT (interper-

sonal) score of the Hand Test.

2. There was no significant difference between the EMR in Program and EMR Not in Program Ss on the ENV (environmental) score of the Hand Test.

It was also found that although no significant differences were involved, the EMR in Program group scored higher on EXH, INT, TEN and scored lower on DEP than the other group.

E chose the INT, and ENV scores because it was felt that these two scores would best measure the subject's social adjustment, and ability to cope with the environment.

Conclusions

The results of this study indicate that contrary to the tenets of mainstreaming EMR children placed in a special education classroom did not differ significantly from the EMR children placed in a regular classroom in their social ability, or their ability to cope with their environment. This study adds a significant new comparison group to the existing Hand Test data, the comparison of the EMR adolescent in a special education classroom with the EMR adolescent in a regular classroom.

Limitations of the Study

Obvious limitations of this study were as follows: discriminating the various scoring categories is a difficult task, the temptation to interpret responses in accordance with one's own theoretical predelections is a natural

temptation. The E however followed the hand book and experienced minimal problems. Sample groups were limited in size due to the difficulty in locating educable mentally retarded subjects placed in a regular classroom. The study was limited to students attending public school in Oklahoma City.

Suggestions for Future Research

Many possibilities exist for future research with the Hand Test. The following are some suggestions.

1. Redraw the stimulus items so that they would resemble the hands of a black person; also include hands that are obviously female, and include children's hands. This would help to eliminate racial, and cultural bias.

2. Do more extensive studies comparing mentally retarded subjects in the regular classroom with mentally retarded subjects in the special education classroom using different scoring categories from the Hand Test. This would provide more data with which to judge the merits of placement in special education.

3. Carry out more correlational studies of the Hand Test with other projective tests. The Hand Test was designed to be used in conjunction with other tests.

REFERENCES

Anastasi, A. Psychological Testing. (3rd ed.) London: McMillian, 1968.

Azcarate, E., and Gutierrez, M. Differentiation of institutional adjustment of juvenile delinquents with the Hand Test. Journal of Clinical Psychology, 1969, 25, 200-203.

Bell, John E. Projective Techniques. New York: Longmans, Green and Co., 1948.

Bricklin, B., Piotrowski, A., and Wagner, E. The Hand Test. A new projective test with special reference to the prediction of overt aggressive behavior. (3rd ed.) Springfield, Ill., Charles C. Thomas, 1972.

Downie, N. M. and Heath, R. W. Basic Statistical Methods. New York: Harper and Row, 1974.

English, Horace, B., and English, Ava Champney. A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. New York: David McKay, 1968.

Hardesty, Russell, Allen. The use of the Modified Hand Test Pictorial Study of Values to differentiate between successful and unsuccessful educable mentally retarded work study students. Unpublished doctoral dissertation, University of Oklahoma, 1973.

Hodge, J. R., and Wagner, E. The validity of hypnotically induced emotional states. The American Journal of Clinical Hypnosis, 1964, 7, 37-40.

Huberman, J. A failure of the Wagner Hand Test to discriminate among workers rated high, average, and low on activity level and general acceptability. Journal of Projective Techniques and Personality Assessment. 1964, 29, 132-143.

Khorramzadeh, Heshmatallah. A comparison of Hand Test responses of higher education and non-higher education Iranian students in the state of Oklahoma. Unpublished doctoral dissertation, University of Oklahoma, 1975.

King, Gary, Theo. A comparison of Hand Test responses of aggressive and non-aggressive black adolescents. Unpublished doctoral dissertation, University of Oklahoma, 1973.

Kleinmuntz, Benjamin. Personality Measurement. Homewood, Ill., Dorsey Press, 1967.

Klinger, Eric. Structure and Functions of Fantasy. New York: Wiley-Interscience, division of John Wiley & Sons Inc., 1971.

Levine, Edna, S., and Wagner, E. Personality patterns of deaf persons: an interpretation based on results with the Hand Test. Perceptual and Motor Skills, 1974, 39 (3) 1167-1236.

Lindzey, G. Projective Techniques and Cross-Cultural Research. New York: Appleton-Century-Crofts, Inc., 1961.

Munro, Bruce, Kingsley. Development of norms for educable mentally retarded and intellectually bright adolescents on a Modified Hand Test. Unpublished doctoral dissertation, University of Oklahoma, 1973.

Murstein, Bernard. I. Handbook of Projective Techniques. New York: Basic Books, 1965.

Putoff, F. The development of norms for bilingual first- second- and third grade children's responses to the Hand Test and Peabody Picture Vocabulary Test. Unpublished doctoral dissertation, University of Oklahoma, 1972.

Rabin, Albert, I. (ed.) Projective Techniques in Personality Assessment. New York: Springer, 1968.

Rand, Thomas, J., and Wagner, E. Correlation between Hand Test variables and patrolman performance. Perceptual and Motor Skills, 1973, 37, 477-478.

Roberts, Bonnie, Kleckner. Development of norms for mentally retarded and bright children on the Hand Test. Unpublished doctoral dissertation, University of Oklahoma, 1971.

Rorschach, Hermann. (Klopfer, Bruner., translator). The Rorschach a Manual for Projective Methods of Personality Diagnosis. New York: World Books, 1942.

Rycroft, Charles. Imagination and Reality. New York: International Universities Press, 1968.

Shafer, Roy. Projective Testing and Psychoanalysis. New York: International Universities Press, 1967.

Thetford, Mamie, Menasco. Norms for deaf school age children on the Hand Test. Unpublished doctoral dissertation University of Oklahoma, 1972.

Wagner, E. The interaction of aggressive movement responses and anatomy responses on the Rorschach in producing anxiety. Journal of Projective Techniques, 1961, 17, 212-215.

Wagner, E. The use of drawings of hands as a projective medium for differentiating normals and schizophrenics. Journal of Clinical Psychology, 1961, 17, 279-280.

Wagner, E. The Hand Test. Manual for administration, scoring, and interpretation. Akron, Ohio: Mark James, 1962.

Wagner, E. The use of drawings of hands as a projective medium for differentiating neurotics and schizophrenics. Journal of Clinical Psychology, 1962, 18, 208-209.

Wagner, E. Hand Test content indicators of overt psychosexual maladjustment in neurotic males. Journal of Projective Techniques and Personality Assessment, 1963, 27, 357-358.

Wagner, E. The Hand Test Manual. Los Angeles: Western Psychological Services, 1971.

Wagner, E. Saying vs doing: a criticism of the Higdon and Brodsky study of the Hand Test, AOR. Journal of Personality Assessment, 1973, 37 (6), 579.

Wagner, E., and Cooper, J. Differentiation of satisfactory and unsatisfactory employees at Goodwill Industries with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1963, 27, 353-356.

Wagner, E., and Medvedeff, E. Differentiation of aggressive behavior of institutionalized schizophrenics with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1963, 27, 111-113.

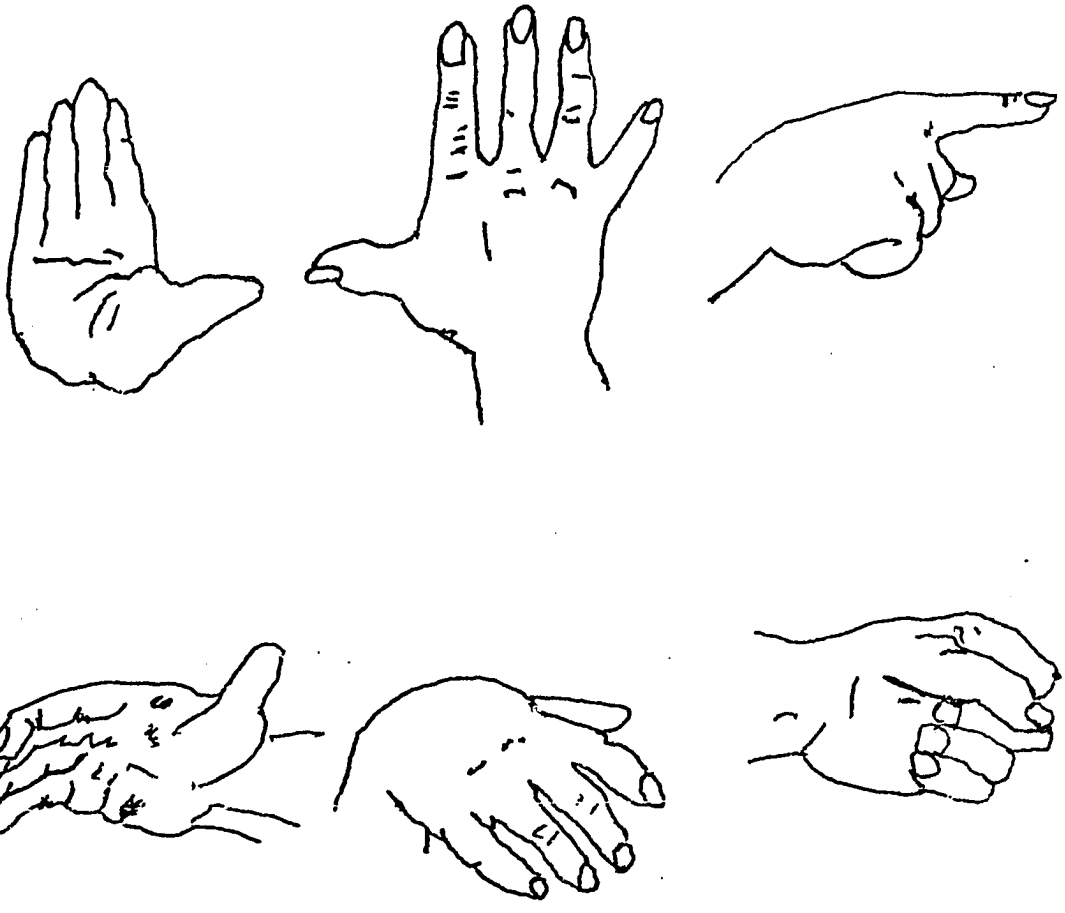
Wagner, E., and Hawver, D. Correlations between psychological tests and sheltered workshop performance for severely retarded adults, American Journal of Mental Deficiency 1965, 69, 685-691.

Wagner, E., and Capotosto, M. Discrimination of good and poor retarded workers with the Hand Test, American Journal of Mental Deficiency, 1966, 71, 126-128.

Zubin, J., and Schummer, Florence. An Experimental Approach to Projective Techniques. New York: Wiley, 1968.

APPENDIX A

STIMULUS ITEMS OF THE HAND TEST



APPENDIX B

DEMOGRAPHIC DATA ON EMR IN PROGRAM SUBJECTS

DESCRIPTIVE DATA ABOUT EMR IN PROGRAM SUBJECTS

Subject	Race	Grade	Sex	CA Yr. Mo.	IQ
S1	B	6	M	12-0	65
S2	W	6	M	13-0	59
S3	B	6	M	12-3	55
S4	B	6	F	12-6	66
S5	B	6	F	12-6	72
S6	B	7	M	13-9	74
S7	B	7	F	12-6	73
S8	B	7	M	13-4	69
S9	B	8	M	14-10	62
S10	B	8	M	12-1	70
S11	B	8	M	14-0	74
S12	W	8	M	13-10	69
S13	B	8	F	14-3	64
S14	B	8	M	13-5	74
S15	B	8	F	13-5	71
S16	B	8	F	13-4	73
S17	B	8	M	13-7	64
S18	B	8	M	13-6	69
S19	B	8	M	14-9	72

APPENDIX C

DEMOGRAPHIC DATA ON EMR NOT IN PROGRAM SUBJECTS

DESCRIPTIVE DATA ABOUT EMR NOT IN PROGRAM SUBJECTS

Subject	Race	Grade	Sex	CA Yr. Mo.	IQ
S1	B	6	M	12-1	72
S2	B	6	M	12-0	70
S3	W	6	M	12-6	85
S4	B	6	F	11-3	73
S5	B	6	F	11-5	62
S6	B	7	M	13-9	64
S7	B	7	F	12-7	69
S8	B	7	M	13-6	67
S9	B	8	M	14-10	72
S10	B	8	M	14-3	61
S11	B	8	M	13-11	74
S12	W	8	M	13-11	74
S13	W	8	F	14-3	74
S14	B	8	M	13-3	74
S15	B	8	F	13-4	72
S16	B	8	F	13-4	75
S17	B	8	M	13-8	74
S18	B	8	M	13-5	64
S19	B	8	M	15-2	74

APPENDIX D

SCORING CATEGORIES OF THE HAND TEST

HAND TEST SCORING CATEGORIES

1. Affection, AFF: Interpersonal responses involving an interchange or bestowment of pleasure, affection or friendly feeling.

   "Waving to a friend- a greeting." "A friendly salute to a fellow officer." "Patting someone on the back."
   "Petting my cocker spaniel."
   "The hand of a lover." (Q) "An embrace."
   "Priest blessing someone."
   "Mother's hand helping her child across the street."
   "Comforting hand of a nurse."

2. Dependence, DEP: Interpersonal responses involving an expressed dependence on or need for succor from another person.

   "A hand folded in prayer, asking for forgiveness."
   "Hitch hiker thumbing a ride."
   "Begging. . . panhandling."
   "Someone pleading for mercy."
   "A drowning person calling for help."
   "Hand's in the air." (Q) "I surrender!."
   "Little child reaching for mother's skirt."
   "Holding hand out to receive something." (Q) "Money."
   "Saluting your leader."
   "Child holding hand up in class." (Q) "To leave the room."

3. Communication, COM: Interpersonal responses involving a presentation or exchange of information.

   "Giving a speech- wants to make a point."
   "Like saying, 'Oh you're joshing!' (D)."
   "Stressing a point in a conversation."
   "A child holding fingers up, showing how old he is."
   "Sign language." (Q) "A deaf mute talking."
   "Describing something to somebody."
   "Communicating with your wing-man."
   "Talking with your hands."
   "Saying, don't you understand?"
   "Playing that Italian game: rock, paper, scissors."

4. Exhibition, EXH: Interpersonal responses which involve displaying or exhibiting oneself in order to obtain approval from others or to stress some special noteworthy characteristic of the hand.

"Showing off his muscles." "A minstrel man-dancing."
"Showing off her diamond ring."
"A ballet dancer with graceful hand movements."
"Making shadow pictures on the wall."
"Hand of a lady held out to be kissed."
"Child showing off his clean hands."
"A comedian doing his stuff."
"Like Hitler." (Q) "On the balcony receiving heils from his people- he's a big deal."
"Flashing her new bracelet."

5. Direction, DIR: Interpersonal responses involving influencing the activities of, dominating or directing others.

"Policeman saying stop."
"Teacher sending a child to the board."
"Traffic signals. Making a right turn."
"Giving a command." "Shoving a dog out a door."
"Leading an orchestra." "Inciting the workers to riot."
"Quarterback calling a huddle."
"Someone saying shush!"
"Crain operator." (Q) "Lower the boom!"

6. Aggression, AGG: Interpersonal responses involving the giving of pain, hostility, or aggression.

"Trying to scare someone."
"A judo punch to break the shoulder blade."
"Making a fist." (Q) "To hit somebody."
"Slapping a fly." "A punch in the mouth."
"Pushing someone off a cliff."
"Pow! right in the kisser!"
"Boxing in the ring."
"Wringing a chicken's neck."

7. Acquisition, ACQ: Environmental responses involving an attempt to acquire or obtain a goal or object. The

movement is ongoing and the goal is as yet unobtained and, to some extent, still in doubt.

"Reaching for something on a high shelf."
"Kid trying to get into the cookie jar."
"Trying to catch a football."
"Jumping up to grab hold of a tree branch."
"Stretched out." (Q) "Grabbing for something going by."
"Grabbing for something that has fallen."
"Reaching for the rung of a ladder."
"A climber." (Q) "Trying to grab a ledge."
"Like on a bus." (Q) "Reaching for the strap."
"Groping for something caught in a crevice."

8. Active, ACT: Environmental responses involving an action or attitude designed to constructively manipulate, attain, or alter an object or goal. ACT responses are distinguished from ACQ responses in that the object or goal has been, or will be, accomplished and the issue is therefore not in doubt.

"Might be typing." "Picking up a coin."
"Writing with a pencil." "Sprinkling salt."
"Carrying a suitcase." "Threading a needle."
"Throwing a ball." "Dropping money in a till."
"Pulling in a fish."

9. Passive, PAS: Environmental responses involving an attitude of rest and/or relaxation in relation to the force of gravity, and a deliberate and appropriate withdrawal of energy from the hand.

"Just resting."
"Laying your hand flat on the table."
"Drying your fingernails."
"Laying out like this." (D) (Q) "Just limp."
"Hand folded in your lap."
"A sleeping hand."
"Just dangling over a chair arm."
"A natural, relaxed hand. Like in the statue of the thinker."

"Hanging limp at your side."
"Folded over." (Q) "Like when you're relaxed reading a book."

10. Tension, TEN: Energy is being exerted but nothing or little is accomplished. A feeling of anxiety, tension or malaise is present. TEN responses also include cases where energy is exerted to support oneself against the pull of gravity accompanied by a definite feeling of strain and effort.

"A fist clenched in anger."
"Pushing upward." (Q) "Trying to get up."
"Stretching and tensing the fingers."
"Tensing hand to see if nerves are steady."
"Clenching your fingers to keep from saying the wrong things."
"Hanging onto the edge of a cliff."
"Holding something very tight."
"A clenched fist of nervousness."
"Hand is stretched and twisted back."
"Straining on a parallel bar."

11. Crippled, CRIP: Hand is crippled, sore, dead, disfigured. sick, injured or incapacitated.

"A dead person's hand."
"Someone's ill- sick hand- just about hanging on to life."
"Looks sorta deformed." "That hand is bleeding."
"Cerebral palsy."
"Been in an accident. Hanging out the car window."
"All beat up." "She's been hurt. Raped maybe."
"Finger's cut off."
"Got black spots on it."
"Frozen stiff. Been out in the cold."

12. Fear, FEAR: Responses in which the hand is threatened with pain, injury, incapacitation, or death. A FEAR response is also scored if the hand is clearly perceived as meting out pain, injury, incapacitation, or death to

the subject or to a person with whom the subject identifies.

"Trembling. . . it's frightened by something."
"Person going down for the third time."
"Shielding his face." (Q) "Against an atomic blast."
"Pretty morbid. . . . (Q) terified. . . .ugh!"
"Walled in. Trying to get out but can't."
"My father's hand. . . like he's trying to hit me."
"Like a hand in the night (Q) going to strangle me."
"Falling back. Trying to save himself."
"Raised up to ward off a blow or flying glass or something."
"Being sucked into quicksand."

13. Description, DES: Subject can do no more than acknowledge the presence of the hand with perhaps a few accompanying inconsequential descriptive details or feeling tones."

"Just a hand." "Palm up (Q) that's all."
"Just straight out, not doing anything."
"A left hand (Q) Lady (Q) That's all."
"Firm hand. . . nothing special."
"A fist (Q) no, nothing."
"Hand with a string tied around its finger."
"A plain ordinary hand."
"Five fingers. Two fingers together. That's all."
"Fingers closed (Q) Nothing else."

14. Bizarre, BIZ: A response predicated on hallucinatory content, delusional ideation or other peculiar, pathological thinking. The response partially or completely ignores the drawn contours of the hand and/or incorporates bizarre, idiosyncratic, or morbid content. One genuine BIZ response is pathognomic of serious disturbance.

"The world- just looking at a distance- trying to get a feel."
"Give no hand as black. Pick up mama."
"A black bug."
"A crocodile creeping along the wall."
"Death's head. . . skull, skeleton, death."
"Hand of a virgin. . . snow. . . it's pure white."

"Culture, antidote, Dr. Heart, sleeping gas."
"A hand cord (Q) going up to see St. Thomas."
"See muscles? Brain that comes from sunflowers."
"Bones, fingerbones, bone-bones, heart-bones."

15. Failure, FAIL: Subject can give no scorable response whatsoever to a particular card. A FAIL is tabulated in computing summary scoring, but is not included in the response total, R, since it is not really a response but a failure to respond.

Summarizing, There are fifteen possible symbols used in scoring the Hand Test protocal: AFF, DEP, COM, EXH, DIR, AGG, ACQ, ACT, PAS, TEN, CRIP, FEAR, DES, BIZ, FAIL. In addition, there are four summation symbols which represent different combinations of the fifteen categories defined above. Wagner (1971) defines these summation symbols as:

Interpersonal, (INT): Equal the sum of the following categories: AFF, DEP, COM, EXH, DIR, and AGG. These are responses involving relations with other people. . . an absence or dearth of INT always has a negative connotation.

Environmental, (ENV): Equal the sum of the following categories: ACQ, ACT, and PAS. These categories, or responses are assumed to represent generalized attitudes toward the impersonal world, i.e., a readiness to respond to, or come to grips with the environment in a characteristic fashion.

Maladjustive, (MAL): Equal the sum of the following categories: TEN, CRIP, and FEAR. The sum of these categories represent difficulty of which the individual is at least partially aware, in successfully carrying out various action tendencies, because of subjectively experienced inner weakness and/or external prohibition. MAL connotes apprehension and distress arising from a failure to achieve need satisfactions and is more characteristic of the neurotic than the psychotic. Withdrawal, (WITH): Equal the sum of the following categories: DES, FAIL, and BIZ. The sums of these categories represent those people whose adjustive potential has been interfered with by subjective feelings of stress which dampen interpersonal and environmental tendencies; the psychotic however has found realistic interaction with people, objects, and ideas so traumatic, difficult, and non-reinforcing that meaningful, effective life roles have been partially or completely abandoned. The WITH score reflects this abandonment (Wagner, 1971).

APPENDIX E

ANALYSIS OF INDIVIDUAL RESPONSES OF EMR IN PROGRAM SUBJECTS ON THE HAND TEST

ANALYSIS OF INDIVIDUAL RESPONSES OF
EMR IN PROGRAM Ss ON THE HAND TEST

AFF	1	0	3	1	0	3	3	3	2	3	0	1	1	4	3	2	2	2	0
DEP	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
COM	4	1	1	1	1	1	1	1	4	1	1	2	4	1	3	1	0	1	2
EXH	0	1	0	0	0	0	1	0	0	0	2	0	0	1	2	1	3	2	0
DIR	0	2	2	0	0	0	0	1	2	0	1	0	3	1	0	1	3	0	1
AGG	1	2	0	3	1	0	1	0	0	1	2	2	1	3	1	1	1	1	2
INT	6	6	6	5	2	4	6	5	9	5	6	5	9	10	9	6	9	6	5
ACQ	0	0	0	0	0	0	1	0	1	1	0	0	2	0	0	1	0	0	1
ACT	2	4	4	0	8	3	2	0	1	4	4	4	1	2	2	2	1	4	3
PAS	0	2	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
ENV	2	6	4	0	8	4	3	0	2	5	4	5	3	2	2	3	1	4	4
TEN	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
CRIP	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1
FEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAL	1	1	0	0	0	0	1	3	1	0	1	0	0	0	0	0	0	0	1
DES	8	0	0	3	2	0	0	2	0	0	0	0	0	1	0	1	0	1	1
FAIL	0	0	0	2	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
BIZ	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
WITH	8	0	0	5	2	2	0	2	1	1	1	0	0	1	0	1	0	1	1
DIR+AGG	1	4	2	3	1	0	1	1	2	1	3	2	4	4	1	2	4	1	3
Subject	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

APPENDIX F

ANALYSIS OF INDIVIDUAL RESPONSES OF EMR NOT IN PROGRAM SUBJECTS ON THE HAND TEST

ANALYSIS OF INDIVIDUAL RESPONSES OF
EMR NOT IN PROGRAM Ss ON THE HAND TEST

AFF	3	3	0	2	1	2	3	1	0	2	0	2	1	2	1	2	3	1	1
DEP	1	0	1	0	0	1	0	1	0	0	0	1	0	0	1	0	0	0	0
COM	0	1	1	1	1	1	2	1	1	1	1	1	2	1	1	2	2	1	1
EXH	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
DIR	2	0	0	1	0	4	0	0	2	0	0	0	0	0	0	1	1	0	3
AGG	2	2	3	2	1	0	0	1	0	1	0	2	1	1	2	2	2	1	1
INT	8	8	5	6	3	8	5	4	3	4	2	6	4	4	6	7	8	3	6
ACQ	1	0	1	1	0	0	1	0	0	0	1	1	1	1	0	0	1	1	1
ACT	0	2	1	4	3	1	4	7	3	1	1	1	1	3	3	2	1	3	3
PAS	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
ENV	2	2	2	5	3	1	5	7	4	1	2	2	3	5	3	2	2	4	4
TEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRIP	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
FEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAL	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
DES	1	2	0	0	1	0	0	0	3	0	4	0	1	0	0	0	0	0	0
FAIL	0	1	1	0	3	1	0	0	0	4	2	3	2	0	1	1	0	3	0
BIZ	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WITH	1	3	2	0	4	1	0	0	3	4	6	3	3	0	1	1	0	3	0
DIR+AGG	4	2	3	3	1	4	0	1	2	1	0	2	1	1	2	3	3	1	4
Subject	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19