INFORMATION TO USERS

This dissertation 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.

University Microfilms

300 North Zeeb Road
Ann Arbor, Michigan 48106

A Xerox Education Company

Downloaded from SHAREOK. Persistent Handle URL: https://hdl.handle.net/11244/3322

72-23,117

THETFORD, Mamie Menasco, 1910-
NORMS FOR DEAF SCHOOL AGE CHILDREN ON THE HAND TEST.

The University of Oklahoma, Ph.D., 1972
Education, special

University Microfilms, A XEROX Company, Ann Arbor, Michigan

© 1972

MAMIE MENASCO THETFORD

ALL RIGHTS RESERVED

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED.

THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

NORMS FOR DEAF SCHOOL AGE CHILDREN ON THE HAND TEST

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

MAMIE MENASCO THETFORD

Norman, Oklahoma

1972

NORMS FOR DEAF SCHOOL AGE CHILDREN

ON THE HAND TEST

APPROVED BY

P. T. Tesha

P. J. Rupiper

Mary Clare Petty

Jack F. Parker

DISSERTATION COMMITTEE

PLEASE NOTE:

Some pages may have

indistinct print.

Filmed as received.

University Microfilms, A Xerox Education Company

ACKNOWLEDGMENTS

The writer welcomes this opportunity to express her deep gratitude to her committee chairman, Dr. P. T. Teska, whose encouragement and guidance have been indispensable. Sincere thanks is also extended to Dr. Omer J. Rupiper, whose encouragement and suggestions in planning this study were invaluable, and to Dr. Mary Clare Petty and Dr. Jack Parker for their considerate cooperation and constructive comments during this study.

The writer is also especially indebted to Dr. Julie Teska and Mrs. Omer Rupiper for their special kind of encouragement. Thanks is extended to the House Parents and office staff at the Oklahoma State School for the Deaf at Sulphur, Oklahoma, for permitting the writer to test in their dorms, and to the office staff for their assistance in obtaining information about the testees. Sincere appreciation is also extended to a dear friend, Rev. Betty Rutters, who aided the writer in this study.

Finally, but not lastly, the author must express sincere appreciation to her husband, Carl, and son Cris, for their patience and understanding, and to her husband's mother, Mrs. S. E. Thetford, for her encouragement.

TABLE OF CONTENTS

ACKNOWLEDGMENTS iii

LIST OF TABLES v

Chapter

I. INTRODUCTION 1

Statement of the Problem 3

II. REVIEW OF LITERATURE 4

III. METHOD 8

The Subjects 8
The Procedures 9
The Scoring 18

IV. PRESENTATION OF DATA AND DISCUSSION 21

V. SUMMARY, FINDINGS AND RECOMMENDATIONS 33

Recommendations for Further Research 34

REFERENCES 37

APPENDIX 41

LIST OF TABLES

Table		Page
1.	Sample Distribution	9
2.	Measures of Central Tendency and Variability on All the Major Scoring Categories	22
3.	Item Analysis of Responses on the Hand Test for Deaf School Age Boys	41
4.	Item Analysis of Responses on the Hand Test for Deaf School Age Girls	43

CHAPTER I

INTRODUCTION

Man has the quality of wanting to understand why man behaves as he does. Therefore, for centuries he has been busy exploring ways and means of answering questions about individual differences in humans. Many different methods have been employed in testing physical and mental health, sensory alertness and development. Various methods of early personality testing later classified as projective techniques have developed gradually.

Freud (Brill, 1938) defined projection as a defense mechanism. A person projects when he ascribes to another person or object characteristics, emotional structure or social relationships of his own that would be painful for him to admit. Rabin's (1960) statements on projection have offered a high degree of relevancy to the term, assuming the process of projection as fundamental to projective tests. He has pointed out that the term of "externalization" was perhaps more appropriate in the case of projective techniques. It avoids the constricting misconception of projection as a mere defense mechanism.

Projective tests have grown out of art and scientific investigations as measures of personality. Early studies were made by Binst and Henri, Dearborn, Sharp, and Rybakow (Rabin, 1968). Rorschach published his test results with inkblots in 1921. The Thermatic Appreception Test (TAT), introduced by Morgan and Murray in 1935, was

another first contribution to projective tests in the 20th century. At the beginning of the 20th century, psychologists attempted to systematically explore the use of pictures, words and inkblots as stimuli which would elicit responses. Projective methods for psychodiagnosis have included puppetry, drama, completion tests, and various other paper-and-pencil methods. These techniques have added refinement to the use of projective tests.

The Hand Test is a projective technique originated by Wagner in 1959. He published his first study in 1961 in an attempt to differentiate normals from schizophrenics (Bricklin, Piotrowski, and Wagner, 1962). Later in 1962, Wagner published the first manual with a slightly modified scoring system. The first revision of the 1962 Hand Test was published in 1969, which included the manual by Wagner, 100 scoring blanks, and ten 3" x 5" cards (nine of which have india ink drawings of hands, while the tenth is blank). The hands were drawn in different, ambiguous poses, and the subject was asked to state what each hand might be doing.

The reliability and validity of the Hand Test were established by Wagner (1969) who used the records compiled for his original sample (n = 1,020). The Spearmen - Brown split half method of computing reliability coefficient was used by the scorers. Concurrent validity was established by comparing the results obtained from the normative groups with results of samples used before. Wagner (1969) said that the meanings and interpretations of the scoring categories were based on a logically deduced projective rationale, validated against empirical data.

A great deal of research conducted using the Hand Test has dealt with juvenile delinquents and schizophrenics. The norms established for mentally retarded persons on the Hand Test were obtained from a sample (n = 25) from the Goodwill Industries in Akron, Ohio. The mean age was 22.9 and the mean IQ score was 71.1. Another study of norms has been completed at Lincoln State School, Illinois, using two groups of mentally retarded: "Imbeciles" (IQ 25-49) n = 25, and "Morons" (IQ 50-69) n = 25. Roberts (1971) developed norms for mentally retarded children and bright children enrolled in elementary school. Puthoff (1972) developed norms for elementary bilingual children.

Statement of the Problem

This study was undertaken to develop norms on the Hand Test for deaf school age children and to provide norms for deaf school age children in non-cognitive areas. Many studies on academic achievement and intelligence were conducted with deaf children, yet little or no research in terms of the non-cognitive area was provided. Because of the void in the literature and because of the existing need for the consideration of the non-cognitive as well as the cognitive functioning of deaf children in an educational setting, this study was undertaken. The purpose of this study was to provide norms on a standardized instrument which might be used for appraising some of the non-cognitive factors. These results could lead to a better understanding of deaf children in learning situations.

CHAPTER II

REVIEW OF LITERATURE

The Hand Test being relatively new has had few research studies reported in the literature. In a speech to the Eastern Psychological Association, Wagner reported on the Hand Test as an indicator of antisocial and interpersonal aggression among delinquents. Wagner and Hawkins (1964) hypothesized that the Acting Out Ratio scores would differentiate between assaultive and non-assaultive delinquents. The Hand Test successfully differentiated 47 out of 60 subjects (78 percent), as being antisocial and aggressive, which was statistically significant at the .001 level of confidence. Shaw and Linden (1964) were in doubt of the Hand Test's predictive validity. They felt that Wagner failed to discriminate between predictive and concurrent validity. Shaw and Linden said, "Before these claims of predictive validity could be taken seriously it would seem preferable to complete at least one study specifically designed to determine the predictive qualities of the test" (p. 284). This criticism caused Wetsel, Shapiro, and Wagner (1967) to initiate a study to predict recidivism among juvenile delinquents using the Hand Test. The study reported, "In the predictive validity of the Hand Test, the AOR significantly differentiated delinquent recidivists from non-recidivists, correctly categorising 66 percent of the subjects. AGG scores also significantly

differentiated the two groups" (p. 69).

Various attempts have been made to utilize the Hand Test as a predictive instrument for "satisfactory workers". Wagner and Cooper (1963) hypothesized that the ACTion score would differentiate between satisfactory and unsatisfactory workers. The study was conducted at Goodwill Industries at Akron, Ohio. The study reported that the Hand Test correctly differentiated 45 out of 50 workers which was statistically significant at the .001 level. Huberman (1964) was not successful in an attempt to cross-validate the findings in a study using subjects employed in a large Douglas Fir plywood mill on the Canadian West Coast. None of the hypotheses he formulated was supported by his results (p. 282).

Wagner and Hawver (1965) used the ACTive scores of the Hand Test along with seven other tests in a battery to develop predictors of workshop success for severely retarded adults. The report showed the results to be highly significant for the predictive value of each of the eight tests. Caution was urged in interpretation of the results because of no opportunity for cross-validation. The sample was small and the test may only have measured present performance and not the skills which existed before admittance to the workshop.

Wagner and Capotosto (1966) made further attempts at validation. Successful discrimination was obtained between groups of poor and good workers at the Lincoln School in Illinois. The ACTive score correctly differentiated 74 percent of the subjects. This was significant at the .01 level of confidence. A majority of the research conducted attempted to classify or diagnose schizophrenics on the basis of their

responses to the Hand Test. Wagner (1961, 1962, 1966, 1970), Wagner and Medvedeff (1963) and Hodge and Wagner (1964) have published studies indicating that basic personality attributes are identified by the Hand Test and that the Hand Test successfully discriminates aggressive and non-aggressive patients from a population of schizophrenics.

Drummond (1966) attempted to cross-validate Wagner's experiments in the discrimination of aggressive from non-aggressive behavior by using the Acting Out Ratio (AOR) and the Withdrawal Score (WITH) of the Hand Test. Her 66 subjects were undifferentiated schizophrenics rated aggressive or non-aggressive according to certain tests. The results of her study were similar for both groups. "Since schizophrenia is an unpredictable behavior, it is not surprising that the results of this study have not proved significant" (p. 279).

Using the Hand Test on the basis of content indicators, Wagner (1963) conducted a study which attempted to identify male neurotics with overt psychosexual problems. His conclusion was that the overt psychosexual group produced significantly more content indicators of sexual maladjustment than the neurotics without sexual aberration.

Bock (Seig, 1965) experimented with four to six year old boys and girls in order to determine the age at which sensible answers could be obtained. Seven year olds usually reacted adequately, giving action to the hands, but younger children generally described the hand. Steinmetz (Seig, 1965) used the AGG scores of the Hand Test with five other tests in diagnosing aggressiveness. The five other tests and the Hand Test proved discriminatory.

Additional data have been presented since the first publication in 1962. Means on imbeciles and morons were established by Capotosto (Wagner, 1971); Gloss assembled means on nine age groups of students in an Ohio School District (Wagner, 1971); Loftus obtained means on a stratified group of boys (age 14.6) from a technical high school in Australia (Wagner, 1971); Daugherty reported a comparison of dyslexic and normal children. In this study the dyslexic group had more TEN responses than the normal group (significant to the .01 level of confidence). Viers (Wagner, 1971) accumulated norms for 197 children from kindergarten through third grade. Roberts (1971) developed norms for mentally retarded and bright elementary public school children on the Hand Test. She concluded that "The Hand Test appeared to be effective in measuring differences between frequency of responses of mentally retarded children and bright children" (p. 40). Neuber's study (Wagner, 1971) presented data on native subjects from the island of Guam. These subjects consistently produced more responses than United States subjects. Wagner (1971) suggested that it was ". . . difficult to ascribe a definitive interpretation to this unexpected finding but it does seem relevant to note that the Hand Test can reflect, in an objective way, intercultural differences" (p. 67). Puthoff (1972) developed norms for bilingual children in grades one, two and three. She concluded that "The Hand Test appeared to be effective in differences between the frequency of responses of Mexican-American children, Anglo children and Guamanian elementary children."

CHAPTER III

METHOD

The Subjects

The subjects used in this study were those enrolled in the Oklahoma State School for the Deaf. For the purpose of this study, the following definition was used: Deaf children are those in whom the sense of hearing is non-functional for the ordinary purposes of life." The general group is made of two distinct classes based entirely on the time of the loss of hearing: (1) The congenitally deaf are those who were born deaf; and (2) The adventitiously deaf are those who were born with normal hearing but in whom the sense of hearing became non-functional later through illness or accident.

The Oklahoma State School for the Deaf is a residential school having an academic and vocational curriculum and an athletic and physical educational program. The Intelligent Quotient of the school children ranged from 62 to 116. A total of 100 children, 50 boys and 50 girls, were included in the study. The chronological ages for both groups ranged from nine to 15 years of age. Children in this age range were chosen because a pilot study indicated that younger children did not have adequate training to participate. The older children were included in order to increase the sample size.

The sample of deaf children were distributed by chronological age and sex as shown in Table I.

TABLE 1

SAMPLE DISTRIBUTION

CA	Boys	Girls
15	4	13
14	0	9
13	9	5
12	8	8
11	9	5
10	11	7
9	9	3

The Procedures

All children were individually administered the Hand Test according to the published standardized procedure. No subject refused to take the test and only one expressed a slight reluctance to do so. The Hand Test was administered by the researcher. The examiner has taught deaf children for 30 years and had administered, scored and interpreted individual diagnostic instruments for the deaf for the last 15 years.

Administration time for the Hand Test was approximately 15 minutes for each subject. The children responded by using sign language,

speech, or actual performance to communicate their responses to the examiner. The first response on each stimulus figure of the test was then categorically scored as predominantly exhibiting one of the following, as defined by Wagner (1969):

1. Affection, (AFF): Interpersonal responses involving an interchange or bestowment of pleasure, affection or friendly feeling.
   "Waving to a friend."
   "A friendly salute to a fellow officer."
   "Shaking hands."
   "Patting someone on the back."
2. Dependence, (DEP): Interpersonal responses involving an expressed dependence on or need for succor from another person.
   "Hitch hiker thumbing a ride."
   "Holding hand out to receive something."
   "Saluting your leader."
3. Communication, (COM): Interpersonal responses involving a presentation or exchange of information.
   "A child holding fingers up, showing how old he is."
   "Talking with your hands."
   "Giving a speech."
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."

"Showing her diamond ring."

"Kissing a girl's hand."

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

"Policeman saying stop."

"Traffic signals."

"Shoving a dog out the door."

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

"Trying to scare someone."

"Grabbing someone with violence."

"Slapping someone."

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.

"Trying to catch a football."

"Reaching for something on a high shelf."

"Reaching for the rung of a ladder."

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.

"Picking up a coin."

"Pulling in a fish."

"Writing with a pencil."

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."

"Hands folded in your lap."

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.

"Holding something tight."

"Straining on a parallel bar."

"A fist clenched in anger."

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

"The hand is bleeding."

"Cerebral palsy."

"A dead person's hand."

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."

"Father's hand slapping me."

"Scratching someone."

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 that's all I know."

"Five fingers."

14. Bizarre, (BIZ): A response predicted 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, or morbid, content. One BIZ response is pathognomic of serious disturbance.

"A crocodile creeping along the wall."

"A black bug."

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

In addition to the fifteen scoring categories listed, Wagner (1969) defined four summation symbols which represented combinations of the symbols defined above. These are:

Interpersonal (ΣINT): AFF + DEP + COM + DIR + AGG = ΣINT

These responses are involved in relations with people. An absence of INT always has a negative connotation.

Environmental (ΣENV): ACQ + ACT + PAS = ΣENV

Environmental responses (ΣENV) are assumed to represent generalized attitudes toward the impersonal world. A person's readiness to respond to or come to grips with the environment in a characteristic fashion.

Maladjustive (ΣMAL): TEN + CRIP + FEAR = ΣMAL

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

Withdrawal (ΣWITH): DES + FAIL + BIZ = ΣWITH

Withdrawal responses (ΣWITH) represent those persons who have 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 condition.

Although the major use of the Hand Test is a personality assessment, the original goal in the development of the test was the prediction of overt aggressive behavior. For this measurement, the Acting Out Ratio (AOR) must be used. The AOR is an approximate measure of the probability of behaving overtly, hostilely, or anti-socially. To obtain the AOR, the sum of (AFF + DEP + COM) responses are placed in ratio opposite the sum of (DIR + AGG) responses. It might be noticed that the AOR is obtained by comparing those action tendencies which reflect a readiness for aggressive overt behavior against those which signify a strong sense of social cooperation or fear of overt aggressive activity.

Wagner (1969) said the qualitative interpretive aspects of the Hand Test can be separated into content analysis and analysis of differential reaction to individual "card pull". Content analysis deals with specific response interpretation which goes beyond the broad generalizations deduced from the basic scoring categories. For example, we can infer aggressive tendencies from AGG responses but this does not distinguish interpretively between a "hitting fist," "a slapping hand," and a "hand shooting a gun." Accumulated clinical data have suggested some content "signs" which seem to retain enough interpretive consistency to be listed as qualitative content indicators designed to supplement, not replace, the established scoring categories. There is a need for more comprehensive validity studies.

Wagner's suggested list of content symbols are as follows:

Sexual Content (SEX): This is the most reliable of all content symbols. It is restricted to gross, non-symbolic sexual responses and occurs only in individuals who are pathologically preoccupied with sex. Two or more such responses must be considered pathological.

Immature Content (IM): This occurs mostly in connection with INT responses and its interpretive significance is restricted to adult protocols. Perceptions involving animals are infrequent and merit special attention. They usually reveal something unique and important concerning interpersonal action tendencies which exert a sporadic influence on behavior. The Hand Test often expresses action tendencies which are more likely to occur while the subject is in a state of lowered consciousness due to fatigue, alcohol or drugs. Of special interest are (IM) responses in conjunction with AGG responses, which often indicate possibilities of overt and aggressive behavior occurring violently and suddenly in a state of diminished consciousness.

Inanimate Content (INAN): When the hand has been reduced to an inanimate object such as a statue by the subject, he has subjectified action tendencies. Such people tend to be compulsive ruminators. More than one such response is rare and occurs only in intelligent neurotics and schizophrenics.

Hiding Content (HID): It is postulated that hands perceived as hiding or concealing something represent a deliberate or partially deliberate attempt to prevent exposure of psychological traits, tendencies or experiences of which the subject is fully or partially aware.

Hiding responses occur with all groups, including normals. It seems more prevalent in neurotics, homosexuals and prisoners.

Sensual Content (SEN): Immature, self-centered and pleasure seeking individuals give responses which emphasize tactual sensitivity. To be scored (SEN), a response must stress pleasurable feeling which accompanies the act.

Internalization Content (IN): This involves the turning of a feeling or action inward, toward the respondent. As the term implies, (IN) represents internalization and personalization of effect. It occurs mostly in connection with AGG; for example, the subject said, "Well, this guy is scratching himself."

Homosexual Content (HOM): Although it is not possible to predict the exact nature of the psychosexual difficulty, the (HOM) response is a reliable indicator of regressive and/or perverse sexual tendencies, latent or manifest.

Denial Content (DEN): When a subject deliberately denies, rejects or expresses doubt over a percept, he is projecting his ambivalence concerning the advisability of carrying out such an action tendency; e.g., "A hitting fist? No, couldn't be, because the thumb is not cocked right."

Movement Content (MOVE): This type of content appears only in conjunction with an ACT response. A (MOV) response entails senseless, non-productive activity; e.g., "Just waving for no reason," "Hand just shaking in the air."

The Scoring

After the test had been administered, scoring symbols were inserted in the right hand margin of the recording sheet next to the responses they represent. Summary scores, totals, and ratios were listed on the reverse side of the special recording sheet by the procedures listed below:

(1) List all the scoring symbols and insert the total number of times each category has appeared on the record proper beside the appropriate symbol.

(2) Total the number of Interpersonal (AFF + DEP + COM EXH + DIR + AGG), Environmental (ACQ + ACT + PAS), Maladjustive (TEN + CRIP + FEAR), and Withdrawal (DES + BIZ + FAIL) responses and arrange them in that order in a ratio. This is known as the Experience Ratio (ER) and provides a useful overall estimate of basic, gross personality structure.

(3) Total the number of AFF + DEP + COM responses and place them in a ratio opposite the total number of DIR + AGG responses. This constitutes the Acting Out Ratio (AOR) and is an approximate measure of the probability of behaving in an overt, hostile, anti-social manner.

(4) Compute the total number of responses (R). Failures are not included in the response total.

(5) Compute the average initial response time (AIRT) by totaling the ten initial response times in seconds (one

for each card), and dividing by ten. If FAIL occurs on any card the initial response time for that card is not included in the total response time. Therefore, if one FAIL occurs, divide the total initial response time by nine; if two FAILs occur, divide by eight, and so on.

(6) Compute the high minus low score (H-L) by subtracting the lowest initial response time (IRT) in seconds from the highest IRT.

(7) Find the Pathological (PATH) score by adding the total number of Maladjustment scores to two times the total number of Withdrawal scores (PATH = ΣMal + 2 ΣWITH).

(8) Any important qualitative aspects of the administration and/or scoring should also be permanently recorded before they are forgotten. If the administrator desires, additional content scores can be listed in parenthesis beside the formal scoring symbol. Content scores are not as reliable as the formal scoring symbols and may be either explicitly recorded or implicitly considered in qualitative analysis (p. 7). The Hand Test summary sheets were scored twice by the researcher. When a questionable response occurred, it was evaluated on the basis of available guidelines as suggested by the Hand Test Manual (1969).

Wagner (1969) suggested "In general, nothing is said to encourage or discourage response productivity, but the subject is permitted and is encouraged to take the cards and examine the drawings" (p. 3).

The subjects in this study were encouraged to respond freely and each of their responses was recorded but only the first response to each card was used in scoring. Content indicators were deliberately excluded from the summary scoring because the list deals with specific response interpretation which goes beyond the broad generalizations deduced from the basic scoring categories.

CHAPTER IV

PRESENTATION OF DATA AND DISCUSSION

This investigation was conducted to provide norms on the Hand Test (Wagner, 1969) for deaf school-age children since no norms have been reported for this group. Studies are needed for diagnostic purposes, to further the use of the Hand Test by adding more information about the test itself and to determine if there are differences among specific groups. The total of 100 students, 50 boys and 50 girls, were individually administered the Hand Test.

The response to each card was scored and tabulated by Wagner's scoring category for each subject according to sex. The tabulations are presented in Tables III and IV in the Appendix. In an effort to present the results in the same statistical forms as reported by Wagner (1971, pp. 63 and 68), medians and quartiles were computed. Table II shows the norms which were developed in the form of medians and quartile ranges ($Q_3 - Q_1$) for each scoring category and for the Acting Out Ratio (ADC: DA).

Among the 50 males samples, the ENV score comprised the largest major scoring category which is expressed as percentages of total number of responses. For the 50 females sampled, the largest major scoring category was the INT. The largest differences between the boys and girls occurred on categories AFF and ENV in favor of the

boys, while on categories COM, AGG and INT the differences were in favor of the girls. The ACT medians were relatively high and very similar for the boys and girls. On the ADC category the results were high and similar by sex. The remaining scoring categories produced small medians of similar magnitude with little differences between sexes.

From these responses the table of norms was developed; it is presented as Table 2.

TABLE 2

MEASURES OF CENTRAL TENDENCY AND VARIABILITY ON ALL THE MAJOR SCORING CATEGORIES

Category	Boys (N = 50)		Girls (N = 50)	
	Median	Q_3-Q_1	Median	Q_3-Q_1
AFF	1.70	2.47	0.55	1.67
DEP	-0.09	0.08	-0.09	0.08
COM	1.70	2.47	2.90	3.87
EXH	-0.09	0.08	-0.09	0.08
DIR	0.14	1.04	0.12	1.25
AGG	0.30	1.07	1.50	.46
INT	3.59	2.98	5.70	3.51
ACQ	-0.09	0.08	-0.09	0.08
ACT	2.56	3.51	2.70	2.84
PAS	0.65	2.45	0.40	0.45
ENV	3.80	5.80	1.70	1.54
TEN	0.10	1.69	0.10	1.69
CRIP	-0.09	0.08	-0.09	0.08

TABLE 2--Continued

Category	Boys (N = 50)		Girls (N = 50)	
	Median	Q_3-Q_1	Median	Q_3-Q_1
FEAR	.55	1.50	-0.09	0.08
MAL	1.50	0.75	0.32	0.80
DES	-0.09	0.08	-0.09	0.08
FAIL	-0.09	0.08	-0.09	0.08
BIZ	0.00	0.00	0.00	0.00
WITH	-0.09	0.08	-0.09	0.08
ADC	2.57	3.38	3.13	2.90
DA	0.59	0.49	0.11	1.05

The deaf boys and girls gave 98 percent AFF responses indicating these children participate in pleasurable relationships which involve the mutual interchange of positive effect and attitudes and therefore, other conditions being equal, tend to get along well with others. It is surprising to note that the girls have a lower percentage in AFFection than the boys. The DEP and DIR responses of both girls and boys were low, thus showing they are not one-sided in their relationships to others.

The communication (COM) scoring category is given by individuals who engage in reciprocal information exchanges as a means of carrying on interpersonal relations. High COM responses, given by both girls and boys, indicate they enjoy discussion and conversation which become

desired ends in themselves as well as means for reaching various goals. COM is a socially positive response because it involves reliance on others to respond to the information being imparted. Then this characteristic in the deaf promotes good fellowship and effective communication.

Exhibition responses indicate that the individual derives pleasure from receiving admiration from others. The essence of the EXH response is the need for praise or the need to be the center of attention. The younger children certainly do desire and need praise and attention. However, the children who comprised this sample in this study did not receive high EXH scores. This indicated that these children did not have a need for praise and attention which suggests their relatively normal adjustment.

The AGG person frightens and irritates others because of his hostility. In some situations he can be very effective since he is not moved about hurting others in order to attain his ends. A limited number of AGG, especially when tempered by other more positive tendencies, is statistically normal. Such people can "take arms against a great deal of trouble" when it is necessary and aggressively maintain their rights. But, when AGG becomes an exclusive personality trait, the consequences are disastrous. Not only is such an individual antisocial since he actively seeks to hurt others, but he is often ineffectual. On the AGG category the difference was in favor of the girls. The Hand Test indicated that the deaf children have sufficient number of AGG responses to be statistically normal.

Environmental responses (ENV) are assumed to represent generalized attitudes toward the impersonal world, such as a readiness to respond or come to grips with the environment or a willingness to exert effort in order to accomplish environmental aims. Deaf boys and girls scored almost identically in the ENV category (see Tables 3 and 4 in the Appendix). The majority of these children then seem to be able to come to grips with the environment.

Acquisition responses (ACQ) designate a willingness to exert oneself in order to attain important goals. ACQ people want to accomplish and to go beyond the readily obtainable. Perhaps because of immaturity and residential environment, few ACQ responses were given by the deaf children.

Action responses (ACT) are the most common of the environmental scores and are given by people involved in constructive accomplishment. Since successful living requires some attention to and concern with impersonal factors, whether they be humble or great, practical or theoretical, every normal record should include some ACT responses. The deaf children who comprised this sample in this study received a high score pointing to a healthy environmental outlook.

Maladjustive responses (MAL) represent difficulty of which the individual is at least partially aware. MAL connotes apprehension and distress arising from a failure to achieve need satisfactions. MAL is characteristic of neurotics and of normals who for various reasons are suffering from feelings of tension or inadequacy. All the medians in the MAL category were low and similar by sex. TEN,

CRIP, and FEAR responses were extremely low, indicating the sample to be the same as for normals.

Withdrawal responses (WITH) are given by the neurotic whose adjustive potential has been interfered with by subjective feelings of stress which dampen interpersonal and environmental tendencies. The psychotic has found realistic interaction with people, objects, and ideas so traumatic that meaningful, effective life roles have been partially or completely abandoned. In most cases, the break with reality is evidenced by the prevalence of WITH responses. Only one child gave one withdrawal response. In general, regardless of the total number of responses, a high WITH score must be considered pathological.

Bizarre response (BIZ) is the most serious of all WITH scores. Since BIZ does reflect a withdrawal from reality contact, it has been retained in the categories. Normals and neurotics simply do not give BIZ responses. All the deaf children examined had no BIZ score.

Description response (DES) represents a feeble reaction to reality. It is most typical of organics and schizophrenics. There were only two (DES) responses among the 100 deaf children tested. Both of the children have low IQ's.

FAIL occurs in all groups but is most characteristic of organics. FAIL often has serious implications and should not be taken lightly. When several FAILs occur in a single protocol, deterioration, especially organic deterioration, is indicated. Three such children were tested having eight FAILs in each protocol. These were eliminated and three more selected to be placed with the normal and dull-normal group. Then only one child had four FAIL responses in his protocol,

and is mentally retarded according to intelligence tests given. Here again the Hand Test could indicate intelligence.

In general, a high Response (R) is better than a low (R) since it indicates a greater reserve of possible reaction tendencies from which to choose. Each deaf child gave ten to thirty responses to the ten cards. The young ones gave only ten responses. It is thought this is due to language deficit. The younger boys and girls and older boys gave action to the hands and seemed to respond more quickly and with more varied responses than did the older girls. Several of the older girls had difficulty in finding a response to please themselves. A reasonably high R can also mitigate, to some extent, the implication of MAL responses. A record containing ten responses, three of which are MAL, usually represents disturbance. Six boys and three girls registered three MAL scores in each protocol of ten responses. So these nine children indicate an emotional disturbance, a considerably low average for school children between nine and fifteen years of age.

Average Initial Reaction Time (AIRT) is an overall estimate of the average time needed to organize and verbalize a perception. When high, it designates subjective difficulty in coping with important life situations. The individual is emotionally threatened by the cards and must take time to absorb the stimuli, recover, and respond. An inordinately low AIRT is also undesirable since good judgment requires sufficient activity. AIRT varies with age. Teenagers produce the lowest AIRTs. For normal adults, AIRT should range from five to ten seconds. The pictures elicit fast reaction time from brain damaged patients. Low AIRTs are found in impulsive normals, hysterics,

and some antisocial personalities. The 50 deaf boys produced an average of 8 seconds AIRT and the 50 deaf girls produced an average of 8.5 seconds AIRT.

The High Minus Low Score (H-L) score reflects the maximum differential hesitation in responding to the ten cards. It is assumed that psychological disturbance will often manifest itself in response delay, a time shock. The lowest response time is presumed to represent the optimum, anxiety-free responsivity of which the individual is capable. When subtracted from the highest response time, an approximate measure of time shock is obtained. The delay, if marked, represents at least some conscious awareness of emotional and/or intellectual difficulty. Long shocks are mostly neurotic, since they represent an experience of inadequacy in the face of a challenging stimulus. It is the rare individual who is not vulnerable in some sphere of psychological activity, and reasonable time shocks are therefore to be anticipated from normal subjects. An H-L between ten and twenty seconds is not unusual. Below five seconds the individual lacks caution; an H-L over thirty seconds is considered high. The deaf boys' H-L average was 22.2 seconds and the deaf girls' average was 21.8 seconds. The tenth card caused every child a short shock, then a look at the examiner and each would say nothing. Then the examiner would explain the man did not draw a picture of a hand here, that he wants you to think how your hand would look doing something. Then the child did something with his hand and showed the position it would take if drawn. Most all responses to the tenth card were ACTion, a few PASsive, and one FAIL. According to these results, the subjects tend to be normal in responses.

The Experience Ratio (ER) consists of INT, ENV, MAL and WITH responses. It is intended as an overall estimate of the nature and disposition of an individual's psychological energies. In a normal protocol, the INT and ENV scores should be approximately equal and should constitute at least 90 percent of the total responses. Tables 3 and 4 indicate that the subjects used have approximately equal responses in INT and ENV categories. Wagner (1969) states that an individual completely bereft of ENV responses is usually ineffective in work situations and incapable of handling routine work. Schizoids and paranoids will astound the examiner with the variety of their interpersonal responses and it is only when the dearth of ENV is taken into account that the inadequacy of their behavior is understandable.

The opinion in projective testing that protocols must be viewed as a whole and that scores and signs are interdependent and interactive is singularly pertinent in considering the ER. Interest in and awareness of people are estimated from the INT category. If the ENV score is low, the INT may be dissipated in fantasy. The researcher found 32 percent of the 100 deaf children tested had low ENV scores. If the MAL is high, the INT is probably being interfered with by neurotic processes. Only seven percent scored high MAL scores. If the WITH is high, there are large segments of reality in which the INT cannot effectively function. Only one child had a WITH score. If the record is almost exclusively INT, the subject tends to overpersonalize and every event takes on a private emotional significance. Eighteen percent of the girls and fourteen percent of the boys had very high INT scores, thus indicating these students tend to be emotionally

unstable. ENV responses indicate an effective interest in impersonal aspects of living and working. If the INT is low, the ENV may indicate compulsivity rather than practicality, and personality depletion rather than environmental efficiency. Six percent of the girls and three percent of the boys registered low INT scores.

If a high MAL is associated with a high ENV, a rigid personality unrelieved by fantasy can be inferred. If WITH accompanies MAL, the diagnostic picture becomes more complicated. One can suspect either a severe and incapacitating neurosis or a psychosis partially hidden under neurotic defenses. The high MAL + high ENV responses of both boys and girls were low, indicating that their personalities are not very rigid. No child had a (WITH+MAL) score. Therefore, there was no severe neurosis or psychosis.

Whenever possible, the ER should be interpreted against the subject's historical and environmental background. Often, apparent inconsistencies between overt behavior and Hand Test data will disappear when supportive life circumstances are taken into account. Some criminals and delinquents produce fairly intact Hand Test records when their wayward behavior is more a product of unwholesome experiences and associations than warped personality (Wagner, 1969).

The Acting Out Ratio (AOR) is one of the most significant Hand Test predictors. The AOR is interpreted as follows: the more DIR + AGG exceeds AFF + DEP + COM, the greater the expectancy of overt, antisocial behavior, other conditions being equal. The AOR cannot interpret perfectly. Constrictive environment and other projective nuances must all be considered in estimating acting out proclivities. Inquiry

was made about seven boys having high acting out scores. These boys were found to be troublesome in the dormitories and school and on the playground and in sports.

Pathology scores must not be interpreted too rigidly, since other quantitative and qualitative indices can indicate psychological disturbances even when PATH is low. PATH provides suitable benchmarks for the assessment of degree of pathology. A PATH of three or more indicates at least mild disturbance. A PATH score of six or more indicates more marked disturbance and when the PATH is ten or over, a very serious condition, most probably a psychosis, is indicated. One deaf boy had a PATH score of six, which according to the Hand Test predicted emotional disturbance. His school conduct reports, observation, and teacher opinion indicate a disturbance.

The largest median number of responses occurred in two of the summation scoring classifications, ΣINT and ΣENV. Large median numbers of responses occurred in ADC and DA (Acting Out Ratio).

The subjects' responses were diversified and did not tend to accumulate in only one or two scoring categories, and as a result, most medians of the scoring categories were consistently small.

The two groups of INT and ENV were placed first in order by Wagner (1971) because they are the most often used scoring categories in the Hand Test. The INT and ENV scores comprised the largest scoring category.

In a comparison of this writer's results with Viers's (Wagner, 1971), no large differences appear between the samples of elementary children in Summit County, Ohio public school system and deaf school

age boys and girls. The Ohio school children (third grade, girls; Mdn = 3.92) (third grade, boys; Mdn = 5.75) and (deaf girls; Mdn = 1.70) (deaf boys; Mdn = 3.80) on the ENV variable would seem to indicate that the normal school children and the deaf children were able to adjust to the environment and inclined to exert themselves to reach environmental goals. All of Viers's median scores, in each area, were higher than those obtained by this examiner with the exception of COM scores. Here Viers's medians were lower. It would appear that the deaf child's potential has not been interfered with and this raises the interpersonal (relations with other people) and environmental (attitudes toward the impersonal world) tendencies.

The Acting Out Ratio (AOR) is one of the most significant Hand Test predictors. It is not considered a device to predict specific motor acts, but rather a tendency to act out in an aggressive kind of way. The AOR seems to be an effective tool to detect troublesome children. Counseling could be started early directing the AOR children's energies in a positive direction.

Testing behavior was absorbed and cooperative. The deaf children like to be tested. It seems to be a special favor to the deaf child to be selected to perform on a test.

CHAPTER V

SUMMARY, FINDINGS AND RECOMMENDATIONS

The primary problem of this study was to establish norms on the Hand Test for deaf school age children, since no norms seemed to have been reported for this group. A total of 100 chidren (50 boys and 50 girls) were individually administered the Hand Test. Administration time for the Hand Test was approximately 15 minutes for each subject. The children responded by using sign language, speech, or actual performance to communicate their responses to the examiner. The first response on each stimulus figure of the test was then categorically scored as predominantly exhibiting one of the following: AFFection, DEPendence, COMmunication, EXHibition, DIRection, AGGression, ACQuisition, ACTive, PASsive, TENsion, CRIPpled, FEAR, DEScription, BIZarre, FAILure, INTerpersonal, ENVironmental, MALadjustive, WITHdrawal and the Acting Out Ratio (AOR).

Although the major use of the Hand Test is a personality assessment, the original goal in the development of the test was the prediction of overt aggressive behavior. For this measurement the Acting Out Ratio (AOR) must be used.

Medians and quartile points were calculated for each scoring category for each sex. The statistics were appropriately tabulated

according to Wagner and presented as a Table of Norms. The tabulations are presented in Tables 3 and 4 in the Appendix.

The norms and the results of this study, i.e., the pattern of responses in the summation scoring categories, appeared to be similar to Viers's, although at times there were slight differences in the sizes of medians. No statistical procedures were attempted because of the smallness in variations that did occur.

The Hand Test seemed to be effective in sharp distinction between certain emotions from which personality disturbances could be identified. The Acting Out Ratio seemed to be a predictor of troublesome children. It was found that children having high Acting Out Ratios were troublesome in the classroom, in the dormitories, in the dining hall and on the playgrounds.

All the examiner's medians in the MAL category were slightly higher than Viers's. Wagner (1971) states the presence of even one MAL response in an otherwise normal record might indicate some adjustive difficulty. Inquiry was made about the children having MAL responses. It was found in doctors' and psychologists' reports that these children were neurotic or disturbed emotionally.

Testing behavior was absorbed and cooperative. The deaf children like to be tested. It seems to be a special favor to be selected to perform on a test.

Recommendations for Further Research

Very little research has been done on the Hand Test because it has only been in print since 1962. Consequently, there are many possibilities for the design of new studies.

An extremely valuable contribution could be made as a direct continuation of this researcher's study: (1) continue the Hand Test each year with the same subjects to see if there is a personality change; (2) correlate these data with their academic achievement; (3) correlate academic and/or vocational class performance and performance on the job for predictive validity.

REFERENCES

REFERENCES

Bricklin, B., Piotrowski, Z., & Wagner, E. The Hand Test: a new projective test with special reference to the prediction of overt aggressive behavior. (2nd. ed.) Springfield, Ill: Charles C. Thomas, 1970.

Brill, A. (ed.) The Basic Writings of Sigmund Freud. New York: Random House, 1938.

Drummond, F. A failure in the discrimination of aggressive behavior of undifferentiated schizophrenics with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1966, 30, 275-279.

Frierson, E. Determining needs. Education, 1965, 85, 461-466.

Hammer, E. F. The clinical application of projective drawings. Springfield, Ill.: Charles C. Thomas, 1967.

Havighurst, R. Who are the disadvantaged? Education, 1965, 85, 455-457.

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.

Oswald, M., and Loftus, P. A normative and comparative study of the Hand Test with normal and delinquent children. Journal of Projective Techniques and Personality Assessment, 1967, 31, 62-68.

Puthoff, Faye Tucker. The Development of Norms for Bilingual First-, Second-, and Third-Grade Children's Responses to The Hand Test and Peabody Picture Vocabulary Test, doctoral dissertation, University of Oklahoma, 1972.

Rabin, A., & Haworth, M. Projective Techniques with Children. New York: Grune & Stratton, 1960.

Rieber, M., and Womack, M. The intelligence of preschool children as related to ethnic and demographic variables. Exceptional Children, 1968, 34, 609-614.

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

Seig, H. The Hand Test as an indicator of overt aggressive behavior in children. Translated from Diagnostica, 1965, 4, 153-158.

Shaw, D., & Linden, J. A critique of the Hand Test. Educational and Psychological Measurement, 1964, 24, 283-284.

Singer, M., & Dawson, J. Experimental falsification of the Hand Test. Journal of Clinical Psychology, 1969, 24, 204-205.

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.

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

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

_____. Application of the Hand Test indicators of antisocial action tendencies in adults to teenage juvenile delinquents. Papers read at Eastern Psychological Association, Atlantic City, April, 1962.

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

_____. The imaginary lovers delusion: a diagnostic case study. Journal of Projective Techniques and Personality Assessment, 1966, 30, 394-400.

_____. Results of psychological testing on a child with Gilles de la Tourette's disease. Journal of Clinical Psychology, 1970, 26, 52-57.

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

Wagner, E., & Cooper, J. Differentiation of satisfactory and unsatisfactory employees at Goodwill Industries with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1963, 27, 253-356.

Wagner, E., & 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., & Hawkins, R. Differentiation of assaultive delinquents with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1964, 28, 363-365.

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

Wetsel, H., Shapiro, R., & Wagner, E. Prediction of recidivism among juvenile delinquents with the Hand Test. Journal of Projective Techniques and Personality Assessment, 1967, 31, 69-72.

Zucker, K., & Jordan, D. The Paired Hands Test: a technique for measuring friendliness. Journal of Projective Techniques and Personality Assessment, 1968, 32, 522-529.

APPENDIX

TABLE 3

ITEM ANALYSIS OF RESPONSES ON THE HAND TEST
FOR DEAF SCHOOL AGE BOYS

Subject	AFF	DEP	COM	EXH	DIR	AGG	INT	ACQ	ACT	PAS	ENV	TEN	CRIP	FEAR	MAL	DES	FAIL	BIZ	WITH	ADC	DA	R	AIRT	H-L	PATH
1	2	0	1	0	1	1	5	0	5	0	5	0	0	0	0	0	0	0	0	3	2	10	13.8	22	0
2	2	0	4	1	1	0	8	0	2	0	2	0	0	0	0	0	0	0	0	6	1	10	11.5	29	0
3	2	0	0	0	1	1	4	0	5	1	6	0	0	0	0	0	0	0	0	2	2	10	8.5	15	0
4	0	0	0	0	1	2	3	0	5	2	7	0	0	0	0	0	0	0	0	0	3	10	15.8	43	0
5	2	0	0	0	1	5	8	0	1	0	1	0	0	1	1	0	0	0	0	2	6	10	11.4	20	3
6	0	0	0	0	2	3	5	0	1	4	5	0	0	0	0	0	0	0	0	0	5	10	18.2	34	0
7	1	0	0	0	0	2	3	0	7	0	7	0	0	0	0	0	0	0	0	1	2	10	16.0	40	0
8	0	2	0	0	1	0	3	1	4	1	6	1	0	0	1	0	0	0	0	2	1	10	29.3	56	3
9	2	0	1	0	2	1	6	0	1	2	3	0	1	0	1	0	0	0	0	3	3	10	7.9	18	3
10	2	0	5	0	0	2	7	0	2	0	2	1	0	0	1	0	0	0	0	7	0	10	5.1	8	3
11	0	0	0	0	1	0	3	0	5	1	6	1	0	0	1	0	0	0	0	0	3	10	12.1	36	3
12	1	0	6	0	0	0	7	0	1	1	2	0	0	0	0	1	0	0	1	7	0	10	13.4	33	2
13	2	1	4	0	0	0	7	0	1	1	2	0	0	1	1	0	0	0	0	7	0	10	10.2	20	3
14	0	0	5	0	0	0	2	0	1	0	1	0	0	1	2	0	0	0	0	5	2	10	10.1	17	4
15	0	0	1	0	0	0	2	0	6	0	6	0	0	1	1	0	0	0	0	1	2	10	22.5	28	3
16	1	0	3	0	1	0	6	0	1	0	1	0	1	2	3	0	0	0	0	4	2	10	14.7	23	5
17	1	0	1	0	0	0	3	0	3	0	3	1	1	2	4	0	0	0	0	2	1	10	15.2	38	6
18	2	0	3	0	0	0	6	0	2	1	3	0	0	1	1	0	0	0	0	5	1	10	17.4	15	3
19	1	0	4	0	1	1	7	0	1	0	1	0	0	2	2	0	0	0	0	5	2	10	5.4	9	4
20	1	0	2	1	1	1	6	0	3	0	3	1	0	0	1	0	0	0	0	3	2	10	9.5	17	3
21	1	0	0	0	1	1	2	1	5	0	6	0	0	1	1	0	0	0	0	1	1	10	20	45	3
22	2	0	1	1	1	0	5	0	1	1	2	1	1	1	3	0	0	0	0	3	1	10	8.4	17	5
23	1	1	2	0	1	2	6	0	4	1	5	2	1	0	3	0	0	0	0	4	2	10	5.5	5	5
24	0	0	0	1	2	1	4	0	1	1	5	1	0	0	1	0	0	0	0	0	3	10	12.1	30	3
25	1	1	4	1	1	1	9	0	1	0	1	0	0	0	0	0	0	0	0	6	2	10	7.6	20	0

TABLE 3--Continued

Subject	AFF	DEP	COM	EXH	DIR	AGG	INT	ACQ	ACT	PAS	ENV	TEN	CRIP	FEAR	MAL	DES	FAIL	BIZ	WITH	ADC	DA	R	AIRT	H-L	PATH
26	0	1	0	0	1	3	5	0	4	0	4	0	1	0	1	0	0	0	0	1	4	10	4.1	2	3
27	0	0	0	0	0	2	2	0	0	1	1	2	0	1	3	0	0	0	0	2	0	10	23.9	77	5
28	1	0	0	0	0	1	9	0	0	1	1	0	0	0	1	0	0	0	0	8	1	10	5.9	9	0
29	2	0	0	1	0	2	5	1	0	0	4	0	0	1	0	0	0	0	0	2	2	10	21.9	52	3
30	1	0	0	0	1	0	2	0	0	0	5	3	0	0	1	0	0	0	0	1	1	10	21.1	27	5
31	0	0	0	0	2	3	5	0	0	0	4	0	0	1	1	0	0	0	0	0	5	10	7.1	22	3
32	0	0	0	0	1	0	1	0	0	3	7	0	0	1	2	0	0	0	0	0	1	10	12.5	25	4
33	1	0	0	1	0	1	3	1	0	1	7	0	0	0	0	0	0	0	0	2	1	10	11.2	20	0
34	0	0	0	1	0	1	2	0	0	1	7	0	0	0	0	0	0	0	0	1	1	10	10.1	22	0
35	2	0	0	2	0	1	6	0	0	1	7	0	0	0	0	0	0	0	0	4	1	10	15.2	27	0
36	0	0	0	4	0	1	4	1	0	0	6	0	0	0	0	0	0	0	0	4	0	10	9.1	13	0
37	1	0	0	6	0	0	8	0	0	0	2	0	0	0	0	0	0	0	0	7	1	10	7.9	31	0
38	0	0	0	5	0	1	6	0	0	0	4	0	0	0	0	0	0	0	0	5	1	10	16.8	52	0
39	2	0	0	1	0	2	5	0	0	0	5	0	0	0	0	0	0	0	0	3	2	10	15.8	22	0
40	1	0	0	2	0	0	3	0	0	0	7	0	0	0	0	0	0	0	0	3	0	10	15.0	43	0
41	2	1	0	2	0	0	7	0	0	0	3	0	0	0	0	0	0	0	0	4	1	10	9.7	30	0
42	1	0	0	4	0	0	5	0	0	0	4	0	1	0	1	0	0	0	0	5	0	10	7.5	17	3
43	0	0	0	6	0	1	7	0	0	0	3	0	0	0	0	0	0	0	0	6	1	10	6.7	12	0
44	2	0	0	3	0	1	6	0	0	0	1	0	2	1	3	0	0	0	0	5	1	10	5.9	10	5
45	3	0	0	0	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	3	3	10	10.4	19	0
46	1	0	0	2	0	1	10	0	0	1	2	0	0	0	0	0	4	0	0	3	1	6	12.7	24	8
47	0	1	0	7	1	1	9	0	1	0	0	0	0	0	0	0	0	0	0	8	2	10	12.2	34	0
48	0	0	0	8	0	1	5	0	2	0	1	0	0	0	0	0	0	0	0	8	1	10	9.1	22	0
49	1	0	0	3	0	1	6	0	4	3	5	0	0	0	0	0	0	0	0	4	1	10	16.6	52	0
50	1	0	0	3	0	2	6	0	4	0	4	0	0	0	0	0	0	0	0	4	2	10	8.9	12	0

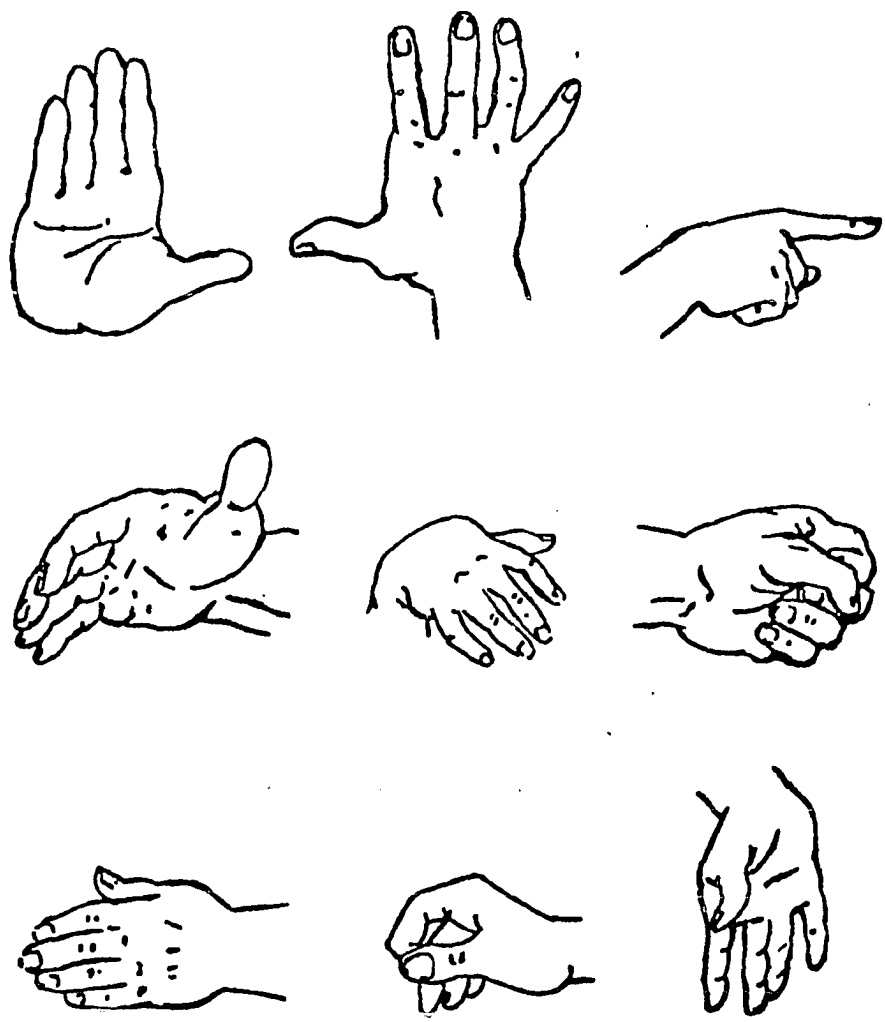
TABLE 4

ITEM ANALYSIS OF RESPONSES ON THE HAND TEST
FOR DEAF SCHOOL AGE GIRLS

Subject	AFF	DEP	COM	EXH	DIR	AGG	INT	ACQ	ACT	PAS	ENV	TEN	CRIP	FEAR	MAL	DES	FAIL	BIZ	WITH	ADC	DA	R	AIRT	H-L	PATH
1	0	0	1	1	0	2	4	0	3	0	3	0	1	2	3	0	0	0	0	2	2	10	9.2	24	5
2	2	0	1	1	2	1	7	0	1	1	2	0	1	0	1	0	0	0	0	3	3	10	5.8	17	3
3	1	0	4	0	2	1	8	0	2	0	2	0	0	0	0	0	0	0	0	5	3	10	8.3	18	0
4	2	0	3	0	1	1	7	0	2	1	3	0	0	0	0	0	0	0	0	5	2	10	15.0	23	0
5	1	0	5	0	0	0	1	0	2	2	9	0	0	0	0	0	0	0	0	1	0	10	14.1	31	0
6	2	1	5	0	0	8	1	0	2	0	0	0	0	0	0	0	0	0	0	8	0	10	7.5	31	0
7	3	0	3	0	1	1	0	0	2	0	2	0	0	0	0	0	0	0	0	6	2	10	5.8	13	0
8	3	0	4	0	0	2	9	0	1	0	1	0	0	0	0	0	0	0	0	7	2	10	9.0	23	0
9	0	0	1	0	2	0	3	0	3	1	4	3	0	0	0	0	0	0	0	1	2	10	17.8	32	5
10	1	2	3	0	0	1	7	0	2	1	3	0	0	0	0	0	0	0	0	6	1	10	25.6	33	0
11	2	1	1	0	0	1	5	1	4	0	5	0	0	0	0	0	0	0	0	4	1	10	10.1	19	0
12	3	1	1	0	1	1	6	1	1	1	3	0	0	0	0	0	0	0	0	4	2	10	9.1	24	0
13	1	0	4	0	0	1	8	0	1	1	2	0	0	0	0	0	0	0	0	5	3	10	8.9	18	0
14	1	0	4	0	0	1	6	0	4	0	4	0	0	0	0	0	0	0	0	5	1	10	8.5	19	0
15	0	0	7	0	0	0	7	0	3	0	3	0	0	0	0	0	0	0	0	7	0	10	5.6	12	0
16	2	0	2	0	0	1	6	0	3	0	3	1	0	0	0	0	0	0	0	4	1	10	7.5	19	0
17	0	0	4	1	0	2	6	0	2	0	2	2	0	0	1	0	0	0	0	4	2	10	15.1	53	4
18	2	0	1	0	0	0	2	0	2	1	2	1	0	0	2	1	0	0	0	2	0	10	12.7	17	3
19	2	0	2	0	0	1	5	0	2	0	3	2	0	0	1	0	0	0	1	4	1	10	10.0	43	4
20	2	0	2	0	0	2	6	0	2	1	4	1	0	0	1	0	0	0	0	4	2	10	17.6	39	3
21	1	0	3	0	0	1	5	0	3	1	4	1	0	0	1	0	0	0	0	4	1	10	14.0	24	3
22	1	1	4	0	0	1	6	0	4	0	5	0	2	0	2	0	0	0	0	6	0	10	16.0	33	4
23	1	0	1	0	0	0	3	0	4	1	4	1	0	1	2	0	0	0	0	2	1	10	15.5	29	4
24	1	0	2	0	0	1	7	0	3	1	3	2	0	1	3	0	0	0	0	3	0	10	7.9	10	5
25	1	0	5	0	0	1	7	0	3	0	3	0	0	0	0	0	0	0	0	6	1	10	17.0	31	0

TABLE 4--Continued

Subject	AFF	DEP	COM	EXH	DIR	AGG	INT	ACQ	ACT	PAS	ENV	TEN	CRIP	FEAR	MAL	DES	FAIL	BLZ	WITH	ADC	DA	R	AIRT	H-L	PATH
26	1	0	3	0	0	1	5	0	4	0	4	1	0	0	1	0	0	0	0	4	1	10	12.7	20	3
27	0	0	6	0	2	0	8	0	2	0	2	0	0	0	0	0	0	0	0	6	2	10	11.1	27	0
28	3	0	3	0	1	1	8	0	1	0	1	0	1	0	1	0	0	0	0	6	2	10	8.0	16	3
29	1	0	6	0	0	1	8	0	2	0	2	0	0	0	0	0	0	0	0	7	1	10	7.6	18	0
30	2	0	1	0	0	0	3	0	6	1	7	0	0	0	0	0	0	0	0	3	0	10	10.7	22	0
31	2	0	1	0	0	1	4	0	6	0	6	0	0	0	0	0	0	0	0	3	1	10	15.3	51	0
32	0	0	4	0	0	0	4	0	4	2	6	0	0	0	0	0	0	0	0	4	0	10	25.6	48	0
33	2	1	4	0	0	0	7	0	1	1	2	0	1	0	1	0	0	0	0	7	0	10	16.2	32	3
34	1	0	5	0	0	0	6	0	1	1	2	1	1	0	2	0	0	0	0	6	0	10	15.1	36	4
35	0	0	1	0	0	3	4	0	3	3	6	0	0	0	0	0	0	0	0	1	3	10	13.9	25	0
36	2	0	4	0	0	2	8	0	2	0	2	0	0	0	0	0	0	0	0	6	2	10	12.1	25	0
37	0	0	2	0	1	0	3	0	4	1	5	0	1	0	2	0	0	0	0	2	1	10	12.3	18	4
38	1	0	4	0	0	1	6	0	2	2	4	0	0	0	0	0	0	0	0	5	1	10	12.2	38	0
39	0	0	7	0	0	0	7	0	3	0	3	0	0	0	0	0	0	0	0	7	0	10	10.5	27	0
40	1	0	4	0	0	0	5	0	1	4	5	0	0	0	0	0	0	0	0	5	0	10	11.5	25	0
41	0	0	7	0	0	1	8	0	2	0	2	0	0	0	0	0	0	0	0	7	1	10	23.0	43	0
42	1	0	2	0	0	0	3	0	7	3	7	0	0	0	0	0	0	0	0	3	0	10	11.0	27	0
43	0	0	3	0	0	1	3	0	4	2	7	0	0	0	0	0	0	0	0	3	0	10	9.8	32	0
44	0	0	0	0	1	0	2	0	5	0	7	0	0	0	2	0	0	0	0	0	2	10	12.2	21	0
45	0	0	2	0	1	0	1	0	3	0	3	2	0	0	1	0	0	0	0	4	1	10	11.4	15	0
46	2	0	4	0	2	0	6	1	2	0	5	1	0	0	0	0	0	0	0	5	2	10	10.1	22	0
47	1	0	2	0	2	0	7	0	2	0	3	0	0	0	0	0	0	0	0	3	2	10	6.7	14	0
48	1	0	2	0	1	1	5	0	3	0	5	0	0	0	0	0	0	0	0	3	2	10	8.1	12	0
49	1	0	6	0	2	0	5	0	4	1	3	0	0	0	0	0	0	0	0	6	1	10	17.0	22	0
50	0	0	6	0	0	1	7	0	3	0	3	0	0	0	0	0	0	0	0	6	1	10	13.5	20	0



Test Materials as Reproduced in the Book
are Available from
Doctor Edwin E. Wagner
Department of Psychology, University of Akron
Akron, Ohio

NORMS FOR DEAF SCHOOL AGE CHILDREN

ON THE HAND TEST

The primary problem of this study was to establish norms on the Hand Test for deaf school age children, since no norms seemed to have been reported for this group. A total of 100 children (50 boys and 50 girls) were individually administered the Hand Test. Administration time for the Hand Test was approximately 15 minutes for each subject. The children responded by using sign language, speech, or actual performance to communicate their responses to the examiner. The first response on each stimulus figure of the test was then categorically scored as predominantly exhibiting one of the following: AFFection, DEPendence, COMmunication, EXHibition, DIRection, AGGression, ACQuisition, ACTive, PASsive, TENsion, CRIPpled, FEAR, DEScription, BIZarre, FAILure, INTerpersonal, ENVironmental, MALadjustive, WITHdrawal and the Acting Out Ratio (AOR).

Although the major use of the Hand Test is a personality assessment, the original goal in the development of the test was the prediction of overt aggressive behavior. For this measurement the Acting Out Ratio (AOR) must be used.

Medians and quartile points were calculated for each scoring category for each sex. The statistics were appropriately tabulated according to Wagner and presented as a Table of Norms. The tabulations are presented in Tables 3 and 4 in the Appendix.

The norms and the results of this study, i.e., the pattern of responses in the summation scoring categories, appeared to be similar to Viers's, although at times there were slight differences in the sizes of medians. No statistical procedures were attempted because of the smallness in variations that did occur.

The Hand Test seemed to be effective in sharp distinction between certain emotions from which personality disturbances could be identified. The Acting Out Ratio seemed to be a predictor of troublesome children. It was found that children having high Acting Out Ratios were troublesome in the classroom, in the dormitories, in the dining hall and on the playgrounds.

All the examiner's medians in the MAL category were slightly higher than Viers's. Wagner (1971) states the presence of even one MAL response in an otherwise normal record might indicate some adjustive difficulty. Inquiry was made about the children having MAL responses. It was found in doctors' and psychologists' reports that these children were neurotic or disturbed emotionally.

Testing behavior was absorbed and cooperative. The deaf children like to be tested. It seems to be a special favor to be selected to perform on a test.

Very little research has been done on the Hand Test because it has only been in print since 1962. Consequently, there are many possibilities for the design of new studies.

An extremely valuable contribution could be made as a direct continuation of this researcher's study: (1) continue the Hand Test each year with the same subjects to see if there is a personality change; (2) correlate these data with their academic achievement; (3) correlate academic and/or vocational class performance and performance on the job for predictive validity.