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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE DEVELOPMENT OF NORMS FOR DELINQUENT AND INTELLECTUALLY BRIGHT ADOLESCENTS ON A MODIFIED HAND TEST

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

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JAMES NORMAN SHINDER

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THE DEVELOPMENT OF NORMS FOR DELINQUENT

AND INTELLECTUALLY BRIGHT ADOLESCENTS

ON A MODIFIED HAND TEST

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DEVELOPMENT OF NORMS FOR DELINQUENT AND INTELLECTUALLY BRIGHT ADOLESCENTS ON A MODIFIED HAND TEST

CHAPTER I

INTRODUCTION

In their original psychoanalytic usage projective techniques require the subject to describe or interpret objects other than himself. These instruments include a great diversity of materials, instructions, and interpretive rules. But despite this diversity and multidimensional character they possess certain common qualities that distinguish them from other personality measures, such as inventories, rating, or situational tests. The most distinguishing feature of projective techniques is the presentation to the subject of a task that is relatively unstructured. In projective techniques there is the implication that as a person expresses himself in any kind of constructive or interpretive activity he is acting out inner fantasy with only a minimum of subject awareness. Murstein makes the distinction that a projective test is to be distinguished from a projective technique in that a test implies a standard situation, while similar material

used in an unstandardized manner without the necessity of quantitative measurement is more appropriately termed a projective technique (Murstein, 1963). It is generally assumed that in the process of choosing between the many alternatives for structuring or interpreting the ambiguous stimulus material, the subject reveals significant and fundamental aspects of himself. Projective techniques are considered to be particularly responsive to latent or unconscious components of the person. Since the subject is usually unaware of how his responses will be interpreted, projective techniques are less prone to intentional distortion and the subject who attempts to distort responses can usually be detected. Occasionally a subject is acutely conscious of antisocial tendencies in himself and will deliberately censor responses. Another advantage which is common to most projective techniques is that they are applicable to persons of all ages, ethnic backgrounds, and intelligence levels.

Many projective techniques have evolved from the association elicited by various forms of art such as drawings or pictures depicting human activities. Possibly one of the most ambiguous and at times, the most subtle, transient aspects of the human figure is its technique of communicating various moods. Specific basic expressions can be readily identified and are associated with the most fundamental emotional states such as pleasure, displeasure,

pain, and fear. In many instances expressions exist only in the mind of the observer and for their perception rely on an auxiliary knowledge of circumstance. Other expressions such as eagerness and indignation are modifications or combinations of the more fundamental feelings (Peck, 1951). In some instances the total precept is determined by internal need and is externalized by perception of expressions such as envy, jealousy, guilt, and longing. Conscious restraint and falsification may hinder the expression and perception.

Wagner pioneered the use of the human hand as a projective stimulus. The Hand Test has shown itself to have great potential in predicting a wide range of behavoirs and modes of interaction. It is difficult to find other projective techniques which readily have an equivalent range of meaningful application. Two main contributing factors may be cited. The Hand Test provides data concerning the manner in which the subject conceptualizes human activity, and as has been frequently demonstrated, this is a primary frame of reference for decision making. From a knowledge of how the subject perceives activity in the hand drawings, an assessment can be made of his basic feelings about himself. The second main contributing factor is that responses to the Hand Test are "environmentally representative," in that they are indicative of the environment with which the subject is most concerned and the degree to which he freely differentiates from that environment.

Wagner's data provided preliminary information for making a wide range of predictions and was the basis for construction of the Modified Hand Test. With this model as a guide, a series of hypotheses concerning the relationship of the test responses to various modes of behavior were formulated.

CHAPTER II

REVIEW OF RELATED LITERATURE

The Hand Test has received considerable recognition and study since its conception by Wagner in 1959. The majority of early research attempted to substantiate the classification of schizophrenics based on responses given to the Hand Test. Research in this area by Bricklin, Piotrowski, and Wagner (1962) provided the rationale and original system for scoring the Hand Test. Wagner later published the first manual with only minor modifications to the scoring system which was revised in 1969 (Wagner, 1969). Wagner (1961, 1962, 1966, and 1970), Wagner and Medvedeff (1963), and Hodge and Wagner (1964) have published studies supporting the postulate that the Hand Test does adequately identify basic personality characteristics and that it also successfully discriminates aggressive and non-aggressive patients from among a population of undifferentiated schizophrenics.

In an attempt to cross-validate Wagner's experiments in prediction of aggressive and non-aggressive behavior on the basis of the Acting Out Score and the Withdrawal Score, Drummond (1966) rated undifferentiated schizophrenics as aggressive or non-aggressive according to specified criteria.

The findings for both groups were conspicuously similar. Drummond concluded: "Since it is in the very nature of disorder for schizophrenics to be unpredictable in their behavior, it is perhaps not surprising that the results of the present study have not proved significant (p. 280)." Azcarte and Gutierrez (1969) concluded from the results of a study of 100 boys at the National Training School, Virginia, that Maladjustive Score and The Acting Out Ratio could be used to predict overt aggressive behavior.

Steinmetz (Seig, 1965) implemented the use of the Aggressive Scores of the Hand Test in conjunction with five other tests in the diagnosis of aggressiveness. The study was based on 16 elementary school children with a mean age of 10.9 years. Two extreme groups (aggressive and non-aggressive) of eight children each were established through the use of a combination of teacher and peer rating. The Disfigures Test, the TAT, and the Hand Test proved discriminatory between these contrasted groups, however, the Rorschach, a questionnaire, and the Color Pyramid Test proved non-discriminatory.

The Hand Test has also been utilized as an industrial employment screening device. However, a majority of the research in this area has been conducted with handicapped adults employed in a sheltered situation. Wagner and Cooper (1963) hypothesized that the active score would differentiate between satisfactory and unsatisfactory workers. The

experiment was conducted with workers at Goodwill Industries, Akron, Ohio. Fifty subjects were selected from which the Hand Test correctly differentiated 45 of 50 workers, which is statistically significant at the .001 level. Combined ratings by the workers' immediate supervisor and the personnel director were used as the criterion. In his attempt at cross-validation of Wagner's and Cooper's finding, Huberman (1964) conducted a study of 18 employed men at a Canadian plywood mill. The mill's two foremen were asked to select and classify workers into three groups differentiated by level of activity. As was expected, the third "low activity" group was nonexistent since employees falling within this category would be terminated during the initial probationary period. None of the hypotheses he formulated were statistically supported by his results.

Wagner and Hawver (1965) in developing a battery with one or more test predictors of success in a sheltered workshop implemented the Action Score of the Hand Test along with seven other tests. They selected 27 workers at a sheltered workshop in Akron, Ohio, all of whom were individually administered the eight tests. The results were highly significant for the predictive value of each of the eight tests. They urged caution in interpretation of the results because of the lack of opportunity for cross-validation, the inadequate sample size, and the fact that the test may possibly have measured present performance rather than skills which existed prior to admittance to the workshop.

Further attempts to validate the Action Score of the Hand Test as discriminating between "good" and "poor" workers were made by Wagner and Capotosto (1966). Forty-seven retarded employees at the Lincoln State School, Illinois, were administered the Hand Test and rated by supervisors using operationally defined criteria of work performance. The Hand Test Action Score correctly differentiated 74 percent of the subjects, which is significant at the .01 level of confidence.

In a speech to the Eastern Psychological Association Wagner (1962) described the Hand Test as an indicator of antisocial, inflexible, and interpersonal aggression among delinquents. Wagner and Hawkins (1964) hypothesized that assaultive and non-assaultive delinquents could be differentiated by the Acting Out Ratio. Forty-seven of the sixty subjects (78 percent) were successfully differentiated, which was statistically significant at the .001 level of confidence. Wetsel, Shapiro, and Wagner (1967) initiated a study to predict recidivism among juvenile delinquents using the Hand Test. This study was designed primarily to establish predictive validity for the Hand Test. They concluded: "In the predictive validity of the Hand Test, the Acting Out Score significantly differentiated delinquent recidivists from non-recidivists correctly categorizing 66 percent of the subjects. The Aggression Scores also significantly differentiated the two groups (p. 69)." Oswald and Loftus (1966) conducted a normative and comparative study using normal and

delinquent Australian children. Data from 114 secondary school boys, 52 institutionalized male delinquents, and 26 institutionalized female delinquents were compared. Significant differences were in the expected direction for certain scores. Comparison with the "equivalent" American samples given by Wagner showed marked differences, however the authors indicate scoring problems as being a source of contamination. They concluded that the Hand Test is a useful, quick projective test, particularly of value with delinquents, but should be interpreted with caution and ideally should be used as one of a battery of psychological tests.

Wagner (1963) conducted the only published study in which the Hand Test was used to identify male neurotics with marked overt psycho-sexual problems on the basis of content indicators. He concluded that male neurotics produced significantly (.02 level of confidence) more content indicators of sexual maladjustment (CYL and Sex) than a control group of neurotics without pronounced sexual abberration.

Unfortunately there seems to be only a moderate amount of research into the standardization of the Hand Test. Copotosto (Wagner, 1971) established means for subnormals; Gloss (Wagner, 1971) reported means on a stratified sample of boys of mean age 14.6 from a technical high school in Adelaide, Australia. Daugherty (Wagner, 1971) reported a study comparing dyslexics to normal children. Children for

these groups were selected from fourth, fifth, and sixth grades. In this study the dyslexic groups had more TEN responses than the normal group (significant at the .01 level of confidence). Neuber (Wagner, 1971) established norms on samples of natives from Guam which included subjects from elementary school through adults. These samples consistently produced more responses than their American counterparts. Viers (Wagner, 1971) published norms for 197 children (kindergarten through third grade). Roberts (1971) developed norms for mentally retarded children and bright children in a comparative study. Roberts concluded that the Hand Test appeared to be effective in measuring the difference between response frequency of the two groups. Puthoff (1972) established norms for rural bilingual children in a correlational study of the Hand Test and the Peabody Picture Vocabulary Test.

CHAPTER III

STATEMENT OF THE PROBLEM

The preliminary pilot studies were the joint efforts of James N. Shinder and Bruce K. Munro. Because of the cooperative effort employed, a joint researching of some of the literature and a common control group were used.

The researcher was concerned with the variables of age and sex discrimination of projective stimulus. However, due to the nature of the original Hand Test it is obvious that the investigation of these variables is not possible because of the extreme ambiguity present in the stimulus cards. The problem of this study was to develop a modified Hand Test and provide norms for bright delinquent and bright non-delinquent adolescents. The study was undertaken because there is no published research dealing with either age or sex discrimination of responses to the Hand Test.

This research was designed to determine the effects of expanding Wagner's concepts to include stimulus cards which are more obviously discernible as representative of male, female, and children's hands, but otherwise comparable to the nine original hand drawings. Although an instructional variable was also introduced, scoring and qualitative considerations were based on Wagner's principles. The researcher's primary interest was to ascertain to what degree the variables of age and sex discrimination of the hand drawings affect the

perception of human activity and to assess the test's ability to differentiate delinquent from non-delinquent adolescents with the three sets of stimulus cards.

Increasing the length of the test from 10 to 30 cards facilitates an opportunity for a wider sampling of behavior from which analytical decisions can be made.

The elimination of the existing ambiguity of gender in the Hand Test will increase the reliability because more ambiguous stimuli permits greater error variance where a greater diversity of interpretation can be anticipated. Such interpretations tend to be random and therefore increase error variance and decrease reliability. Additional items of an equal kind and quality will add reliability to the instrument. Usually, though not always, additional items increase reliability by a predictable amount (Anastasi, 1968).

The problem of this study is to develop and to comparatively analyze these norms using the modified Hand Test for delinquents and bright adolescents.

Definition of Terms

For the purpose of this study, the following operational definitions were used:

Adolescent: An individual who has passed his twelfth birthday but has not yet reached his twenty-first year.

Delinquent: An individual who has committed at least two anti-social acts resulting in judicial intervention,

thereby causing the removal of the adolescent from the custody of his immediate family unit.

Intellectually Bright Adolescent: An individual whose I.Q. score is within the range of 110 and 125 as measured on the Otis Intelligence Test (1954) or the California Mental Maturity Short Form (1963). For the subjects on whom this data was not available an abbreviated version of the 1960 Revision of the Stanford Binet, Form L-M was individually administered by the researcher. In addition, each of the children have met the following criteria:

1. Never referred to any clinic or agency for treatment of emotional disorder.
2. No known history of brain injury, or observable characteristics of physical handicaps.
3. No overt behavioral symptoms indicative of maladjustment or severe anxiety.

Lower Socio-economic Status: Combined family income below $3500 annually. This group was largely comprised of individuals on relief, and the chronically unemployed. In relation to socio-economic status it is assumed that possession of economic goods, opportunities, and social interaction are somewhat consistent with income and may be used as a prediction of social behavior.

Middle Socio-economic Status: Combined family income between $3500 and $7000 annually.

Upper Socio-economic Status: Combined family income exceeding $7000 annually.

Hypotheses

In order to determine the parameters of this study, the following null hypotheses will be tested:

H_o-1 There will be no statistically significant differences in the frequency of responses by categories given by bright as compared to delinquent adolescents.

H_o-2 There will be no statistically significant differences in the frequency of responses by categories given by bright as compared to delinquent adolescents, as a function of the sex of the subjects.

H_o-3 There will be no statistically significant differences in the frequency of responses by categories given by bright as compared to delinquent adolescents, as a result of the differing methods of structuring presentation of cards.

H_o-4 There will be no statistically significant differences in the frequency of responses by categories between bright and delinquent adolescents with respect to the responses elicited by the "male" stimulus cards.

H_o-5 There will be no statistically significant differences in the frequency of responses by categories between bright and delinquent adolescents with respect to the responses elicited by the "female" stimulus cards.

H_o-6 There will be no statistically significant differences in the frequency of responses by categories between bright and delinquent adolescents with respect to the responses elicited by the "child" stimulus cards.

CHAPTER IV

METHOD

The Subjects

A sample of 60 bright adolescents equally divided between boys and girls was obtained from Stephens, Grady, Carter, Oklahoma, and Cleveland County school systems. The subjects were selected on the basis of scores obtained within the range 110-125 inclusive, as measured on the Otis Intelligence Test (OIT), or the California Mental Maturity Short Form (1963). None of the selected bright adolescents were known delinquents, or behavior problems.

A sample of delinquent adolescents, equally divided between boys and girls, was obtained from within the state. The delinquents included in this study all possessed long histories of overt acting-out and previous involvement with social service agencies. The researcher observed in interviews that these subjects all seemed to exhibit difficulties in identification, and most exhibited a remarkable awareness of isolated segments of reality. Most of these subjects were overly concerned with contradictions presented by their parents, the social cultural system, the educational system, and the judicial system. At this point in their lives they seemed primarily concerned with freeing themselves from

parental control, and consolidating peer relationships. As the degree of drug involvement was difficult to accurately ascertain, potential subjects indicating histories of drug abuse were eliminated from this study.

Unacceptable behavior in adolescents has been the subject of much literature. Its formal approach in this country was heralded by W. Healy in the early twentieth century. As a consequence, centers for delinquents arose in America, the first of which was established in Chicago, Illinois. Since that time the term "juvenile delinquency" has been used in describing almost every conceivable form of unacceptable behavior in a child. Doctors Martin Gold and J. R. Williams of the Institute of Social Research, University of Michigan, proposed that: "Delinquent behavior is norm-violating behavior which is detected by an appropriate authority that would expose the individual to legally prescribed sanctions." This differs little from the definition used by Stella Chess. She states that: "Delinquency is ultimately defined by legal designation; the youngster has been apprehended and has been judged as delinquent and entered in the records as such." Thus, if the damage is undetected, if financial restitution is made, or if the judge releases the offender, the youngster can no longer be called delinquent, no matter what he has done.

The criterion for selection of the subjects was that they had committed at least two anti-social acts resulting in

judicial intervention, causing, in some cases, the removal of the adolescent from the custody of his immediate family. In some cases these subjects were institutionalized, none in excess of six months duration. Many different agencies were used in data collection because the researcher could not obtain enough bright delinquents in any one setting. These groups were closely matched in respect to sex, chronological age, and I.Q. The researcher also attempted to match subjects for birth order, socio-economic status, and size of family.

The Procedures

Each subject was individually administered the Modified Hand Test by the researcher. Prior to the administration of the test the subjects were interviewed by the researcher at great length to obtain additional data and to facilitate the establishment of rapport. In an effort to demonstrate that those aspects of the response data being used in this dissertation are not products of non-personality factors, administration was limited to clinical settings and all subjects were screened to eliminate persons possessing severe sensory handicaps. Considerable research (Gleser, 1963), (Lindsey, 1961), and (Masling, 1963) concludes that projective technique responses are influenced by temporary psychological states, by the nature of the stimuli, by the number of response sets, by individual differences unrelated to personality factors, and by a wide variety of situational factors. All the subjects included in

this study were volunteers; only one subject requested to terminate testing prior to completion.

The subjects were handed the cards one at a time. On initial exposure to the stimulus card, one-half of the subjects were asked to respond to the following question: "What is the hand doing?" The other matched half of the subjects were asked to respond to: "Tell me about this hand." It is interesting to note that the responses varied in length from two words to several sentences, which included personalized examples. Behavioral observations were also recorded on the answer sheets. On concluding the verbatim recording of the thirty initial responses, there will be a second trial in which each response will be further discussed in order to obtain maximum clarity of meaning. In a further third trial the subjects were asked to classify the hand drawing as being representative of either man, woman, or child.

The Instrument

Eighty-six stimulus cards were developed by the researchers from which fifty were selected for the initial pilot study. Great concern was given to the amount of ambiguity present in each drawing. Originally, it was thought that considerable ambiguity in a drawing was

necessary for projective purposes and, as a corollary, the greater the ambiguity, the greater the likelihood of personal projection. This assumption, however, has not been widely confirmed empirically. Research indicates that there can be too little as well as too much, structure in a drawing. Murstein (1958) has presented evidence that the more clearly structured the picture, the more unpleasant the tone of the story. In the study, the fifty cards were further reduced to thirty cards; ten depicting male hands, ten, female hands, and ten, children's hands. Eighty-one undergraduate students were used in the selection process for the pilot study. A reproduction of the thirty selected cards and the results of the pilot study selected appear in Appendix A.

The Scoring

Each of the subject's responses were independently scored and categorized by both researchers in order to insure rater reliability. None of the questionable responses were scored or categorized until all data were compiled. At that time the need for further content categories could be more adequately assessed. Earlier investigators also had difficulties with category placement of responses (Oswald and Loftus, 1967).

While it is possible to secure more than one response to each card, for experimental purposes only the first response received for each card was further clarified and scored. Every response on the test needed to be categorically

scored as predominantly exhibiting one of the following, as defined by Wagner (1969):

Affection (AFF): Interpersonal responses involving an interchange or bestowment of pleasure, affection, or friendly feeling, e.g., "Waving to a friend--a greeting."

Dependence (DEP): Interpersonal responses involving an expressed dependence on or need for succor from another person, e.g., "Hitch-hiker thumbing a ride."

Communication (COM): Interpersonal responses involving a presentation or exchange of information, e.g., "A child holding fingers up, showing how old he is."

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, e.g., "Showing off his muscles."

Direction (DIR): Interpersonal responses involving influencing the activities of, dominating, or directing others, e.g., "Policeman saying stop."

Aggression (AGG): Interpersonal responses involving the giving of pain, hostility, or aggression, e.g., "Trying to scare someone."

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, e.g., "Reaching for something on a high shelf."

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, e.g., "Might be typing."

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, e.g., "Just resting."

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, e.g., "Hanging on to the edge of a cliff."

Crippled (CRIP): Hand is crippled, sore, dead, disfigured, sick, injured, or incapacitated, e.g., "That hand is bleeding."

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, e.g., "My father's hand . . . like he's going to hit me."

Descriptive (DES): Subject can do no more than acknowledge the presence of the hand with perhaps a few accompanying inconsequential descriptive details or feeling tones, e.g., "Just a hand."

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, e.g., "A crocodile creeping along the wall."

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

In addition, there are four summation symbols which represent combinations of the symbols defined above. For the purpose of this dissertation the subjects were limited to only one response per card, therefore, the summation categories

should be interpreted discriminately as a result of the modified administration procedure. Wagner (1969) defines categories as follows:

Interpersonal (∑ INT): AFF, DEP, COM, EXH, DIR, and AGG are combined for ∑INT responses. That is, those responses involving relations with other people . . . an absence or dearth of ∑INT always has a negative connotation.

Environmental (∑ ENV): ACQ, ACT, and PAS are combined for ∑ENV responses. They 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): TEN, CRIP, and FEAR are combined for ∑MAL responses. They represent difficulty, of which the individual is at least partially aware, in successfully carrying out various action tendencies, and failure to achieve need satisfactions.

Withdrawal (∑WITH): DES, FAIL, and BIZ are combined for ∑WITH responses. They represent those 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.

CHAPTER V

RESULTS

This chapter presents the data and resulting analysis of the data compiled on the 120 subjects (Tables 15 and 16, Appendix B) involved in this study as stated in Chapter I. The non-delinquent subjects were selected from public schools with enrollments exceeding 200 students in predominantly white middle-class communities. The delinquent subjects were located primarily through their involvement with various community service agencies, juvenile shelters, probationary programs; and community mental health centers provided large numbers of voluntary subjects. The data was obtained from individually administered tests which were scored first by the researcher and later re-scored by another professionally employed psychologist. Tables 17 and 18, Appendix B of this study, present the raw data which was utilized in the statistical analysis.

This study was conducted to establish norms on the Modified Hand Test for bright and bright delinquent adolescents and to determine if there are differences among these groups, and to provide some information about the test itself. The F tests for homogeneity revealed that no significant

differences were found to exist in the variables of age, I.Q., family constellation, and socio-economic status of the delinquent and non-delinquent subjects.

Sixty males and 60 females selected equally from delinquent and non-delinquent pools completed the test. Analysis of the descriptive data on these subjects appears in Table 1. The mean C.A. for the delinquents was 14 years and 5 months (S.D. 2 years, 1 month). The mean C.A. for the non-delinquents was 14 years and 9 months (S.D. 2 years, 1 month). The ages of subjects in both groups ranged from 12 to 19 years. The mean I.Q. for delinquents and non-delinquents was 188 (S.D. 4.3) and 117 (S.D. 3.9), respectively. The I.Q.s of the non-delinquent subjects fell into the range of 110 to 125, and the delinquents within the range of 110 to 126. The mean number of children in the family was 3.63 (S.D. 1.70) for delinquents and 3.58 (S.D. 1.59) for non-delinquents. The largest number of children in a family was 9, which occurred in the non-delinquent group. The corresponding statistic for the delinquent group was 8. The mean ordinal position was 2.4 (S.D. 1.46) for non-delinquent subjects and 2.3 (S.D. 1.19) for the delinquent group. In the process of matching subjects the researcher observed a great tendency for the identified delinquent to be either the oldest or youngest child in the family. With the assignment of numerical values to socio-economic status statistical analysis on this variable was made possible. The resulting mean for the non-delinquents was 1.93 (S.D. 0.63) and 1.96 (S.D. 0.64) for the delinquent group.

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The norms were developed in the form of medians and quartile ranges (Q_3-Q_1) for each scoring category. The quartile deviation is obtained by dividing $\frac{Q_3-Q_1}{2}$. This is half the distance between the two quartile points. Whenever the median is used as a measure of central tendency, the quartile deviation is an appropriate measure of variability. The summation categories were deleted from statistical interpretation for several reasons. The limitation of the subjects' response productivity to one response per card is contradictory to the assumptions underlying use of the summation categories. The researcher further felt that these computations would, in the form of medians, mask significant differences and lead to erroneous conclusions.

The Median Test (Downie and Heath, 1970) was used to determine if the differences between the groups were significant. This distribution-free statistical procedure was selected because the data were not normally distributed and the sample sizes were small. The hypotheses of no significant differences between the sets of scores were tested by the median test using Chi square technique. Since the distribution of Chi square is a function of the number of degrees of freedom and frequency of response, Yates' correction for continuity must be applied. This correction factor is necessary because the distribution of the Chi square is discrete. The correction should be used where any of the expected frequencies is less than 5, and some statisticians

suggest 10. Since for large expected frequencies the correction will have negligible effects, it may be argued that the correction should always be used.

No significant differences between the delinquents and non-delinquents were found in the total number of cards perceived as male, female, and child. The hand cards were perceived as predominantly male, frequencies of 715 (Mdn.11.72, Q_3-Q_1 1.50) and 711 (Mdn. 11.67, Q_3-Q_1 2.29) were recorded for non-delinquent and delinquent groups, respectively. The frequencies for delinquent subjects on female and child cards were 575 (Mdn. 9.75, Q_3-Q_1 1.13) and 514 (Mdn. 9.83, Q_3-Q_1 1.14), respectively. The frequencies for the non-delinquents on female and child cards were 586 (Mdn. 8.60, Q_3-Q_1 2.17) and 499 (Mdn. 8.68, Q_3-Q_1 1.26), respectively.

No significant differences between delinquent and non-delinquent subjects were seen in the analysis by sets of the ≤MALE, ≤FEMALE, and ≤CHILD categories. The delinquent subjects displayed greater variability in these categories than did the non-delinquent subjects. The medians for the ≤MALE categories (delinquent 7.92, non-delinquent 8.38) for the male set, and the ≤FEMALE (delinquent 8.17, non-delinquent 8.44) for the female set differed considerably from ≤CHILD (delinquent 6.61, non-delinquent 7.21) for the child set. There was a tendency for the individual delinquent subjects to perceive either a relatively high or relatively low number of ≤CHILD responses. Although rare, there were cases when content of initial

response obviously indicated perception of a child's hand, however, during the second trial the subject reported perception of either a male or female hand.

Hypothesis 1 states that there will be no significant differences in frequency of responses by categories given by bright delinquents as compared to bright non-delinquent adolescents. In testing this hypothesis, scores for the male, female, and child set were totalled. There were three scoring categories, DEP ($p < .001$), DIR ($p < .0003$), and DES ($p < .0003$) which showed statistically significant ($df = 1$, $p < .05$) differences. This seems to indicate that the Modified Hand Test does differentiate delinquent from non-delinquent subjects and the null hypothesis is rejected.

Hypothesis 2 states that there will be no significant differences in the frequency of responses by categories given by bright delinquent and bright non-delinquent adolescents as a function of the sex of the subjects. Analysis of the data in the male set revealed greater differences in the delinquent groups. Significant differences between male and female delinquents were observed in the categories of AFF ($p < .03$) and PAS ($p < .008$). The females perceived more AFF and less PAS responses. Within the female set the female delinquents relayed significantly more AGG ($p < .02$) responses. Significant differences were also observed in the number of female cards perceived as being male cards. The females had greater difficulty in identifying the female cards and perceived

TABLE 2

COMPOSITE NORMS FOR EACH SCORING CATEGORY FOR DELINQUENT AND NON-DELINQUENT GROUPS ON THE MODIFIED HAND TEST

	Delinquent Group			Non-delinquent Group			
	Freq	Mdn	Q_3-Q_1	Freq	Mdn	Q_3-Q_1	Sig
AFF	122	1.59	.90	120	1.88	.75	NS
DEP	30	.36	1.54	22	.20	2.06	.0001
COM	303	4.94	1.55	228	3.77	1.85	NS
EXH	162	2.23	1.03	73	1.75	.73	NS
DIR	83	2.17	1.04	173	2.88	1.02	.0003
AGG	203	3.23	1.77	134	2.04	.92	NS
ACQ	102	2.26	1.19	134	2.18	.79	NS
ACT	284	4.50	1.75	464	7.20	2.17	NS
PAS	129	1.79	.76	156	2.23	1.28	NS
TEN	192	2.60	1.24	170	2.60	1.26	NS
CRIP	55	1.93	1.31	30	.21	2.05	NS
FEAR	20	.20	2.06	6	.06	.28	NS
DES	64	.29	2.18	77	.44	2.00	.0003
FAIL	33	.20	2.06	4	.02	.26	NS
BIZ	18	.27	2.18	4	.03	.26	NS
ΣM	711	11.67	2.29	715	11.72	1.50	NS
ΣF	575	9.75	1.13	586	9.83	1.14	NS
ΣC	514	8.60	2.17	499	8.68	1.26	NS

significantly more ≤MALE ($p < .05$) responses within this set. The highest frequency and greatest range of differences between male and female delinquents was seen in relation to the children's hands. The males cited significantly more ACQ ($p < .002$), ACT ($p < .002$), and PAS ($p < .003$) responses. The male delinquents had considerable difficulty in distinguishing the children's hands; they cited significantly more ≤FEMALE ($p < .05$) within this set. Many of the delinquent males in response to the child set seemed to be attempting to classify the hands as male or female and avoided the child category except in cases of extreme ambiguity.

Significant differences between males and females in the non-delinquents took place only in the female and child sets. In the female set, the non-delinquent females identified significantly more of the female hands as being ≤MALE ($p < .02$). The same tendency was previously noted in relation to the female delinquents. In the child set differences were seen only in the male preference for the TEN ($p < .02$) category. These findings lead to the rejection of Hypothesis 2.

Hypothesis 3 states that there will be no significant differences in the frequency of responses by categories given by bright delinquent as compared to bright non-delinquent adolescents as a result of the differing methods of structuring the presentation of the cards. Analysis of the data revealed more significant differences between instructional variables in the delinquent groups. In the male set the non-conventional

TABLE 3

NORMS FOR MALE AND FEMALE NON-DELINQUENT SUBJECTS
ON THE MODIFIED HAND TEST

	Male					Female					Child				
	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female
AFF	.25	.29	NS	1.57	1.71	.15	.21	NS	.32	2.19	1.86	2.17	NS	.75	.82
DEP	0.0	.04	NS	.25	.26	0.0	.06	NS	.25	.28	.10	.21	NS	.30	1.73
COM	1.86	1.60	NS	.84	.45	2.17	1.57	NS	1.48	.93	1.67	2.17	NS	.69	1.29
EXH	.15	.21	NS	.33	1.73	.44	2.00	NS	1.29	1.33	.10	.21	NS	.30	1.93
DIR	1.75	1.83	NS	.44	.45	1.50	2.00	NS	.78	1.33	.15	.21	NS	.32	1.93
AGG	1.57	2.17	NS	.51	.72	.29	.13	NS	1.71	.32	.50	.25	NS	1.27	1.56
ACQ	.21	.25	NS	1.73	1.44	1.75	1.57	NS	1.17	.89	1.50	2.38	NS	.91	1.25
ACT	1.93	1.65	NS	.69	.57	3.64	3.20	NS	1.29	1.00	2.14	2.21	NS	.59	.77
PAS	1.57	.44	NS	.89	1.51	2.38	2.17	NS	.84	1.46	1.86	.44	NS	1.18	1.13
TEN	1.75	1.29	NS	.71	.40	1.75	2.17	NS	1.13	1.46	1.75	.50	.02	1.12	1.50
CRIP	.06	.04	NS	.28	.27	.08	.06	NS	.26	.28	.18	.08	NS	.34	.29
FEAR	.04	.02	NS	.27	.25	.02	0.0	NS	.26	.25	0.0	.06	NS	.25	.28
DES	.50	.18	NS	1.38	.34	0.0	0.0	NS	.25	.25	.18	.18	NS	.34	.34
BIZ	0.0	.02	NS	.25	.26	0.0	0.0	NS	.25	.25	.02	0.0	NS	.26	.25
FAIL	0.0	.04	NS	.25	.27	0.0	0.0	NS	.25	.25	0.0	.04	NS	.25	.27
MALE	8.06	8.64	NS	.86	.69	1.75	2.38	.02	.65	.89	2.17	2.38	NS	1.25	.79
FEMALE	1.75	1.57	NS	1.12	.99	8.50	8.40	NS	.93	.96	.44	.25	NS	1.21	2.19
CHILD	1.86	1.75	NS	.73	1.12	.06	.18	NS	.28	.34	7.30	7.07	NS	.80	1.23

TABLE 4

NORMS FOR MALE AND FEMALE DELINQUENT SUBJECTS
ON THE MODIFIED HAND TEST

	Male					Female					Child				
	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female	Male Mdn	Female Mdn	Sig	Q_3-Q_1 Male	Q_3-Q_1 Female
AFF	.29	1.59	.03	1.71	1.02	.38	.29	NS	1.69	1.71	1.50	.33	NS	1.71	2.16
DEP	.08	.08	NS	.29	.29	.10	.10	NS	.30	.30	.15	.13	NS	.33	.32
COM	2.40	2.72	NS	1.79	.92	1.86	1.75	NS	.45	1.06	2.38	2.38	NS	1.14	1.58
EXH	.38	.38	NS	1.68	1.79	1.65	1.86	NS	1.06	.62	.44	.33	NS	1.87	1.90
DIR	.44	.33	NS	1.13	2.54	.29	.21	NS	1.55	1.57	.29	.15	NS	1.91	.33
ACG	1.97	1.57	NS	.24	.55	.50	2.00	.02	1.38	1.36	2.17	2.17	NS	.84	.87
ACQ	.15	.15	NS	.32	.32	2.00	.33	NS	.76	1.54	2.38	.33	.002	1.64	1.60
ACT	2.17	1.75	NS	1.45	1.17	1.75	2.38	NS	.71	1.21	3.50	2.30	.002	1.16	.95
PAS	1.57	.38	.008	1.02	1.53	1.86	.29	NS	1.23	1.71	2.17	.38	.003	1.48	1.68
TEN	1.75	1.33	NS	1.17	.42	.50	1.86	NS	1.50	.92	.33	1.65	NS	2.16	.63
CRIP	.18	.04	NS	.34	.27	.15	.18	NS	.32	.34	.15	.33	NS	.33	1.70
FEAR	.10	.08	NS	.30	.29	.06	0.0	NS	.28	.25	.02	.13	NS	.26	.31
DES	.08	.06	NS	.29	.28	.10	.15	NS	.30	.32	.10	.18	NS	.30	.34
BIZ	.12	.04	NS	.31	.27	.04	.13	NS	.27	.31	.06	.02	N	.28	.26
FAIL	.13	.02	NS	.32	.26	.21	.13	NS	2.19	.31	.08	.08	N	.29	.29
MALE	7.50	8.13	NS	3.33	1.14	1.57	2.38	.05	.72	.97	2.50	2.07	NS	1.20	.83
FEMALE	2.17	1.86	NS	.83	1.24	8.00	8.33	NS	1.13	1.11	1.86	.50	.05	1.21	1.28
CHILD	2.38	2.00	NS	1.19	.84	.33	.15	NS	1.90	.32	5.90	7.07	NS	1.60	1.17

instructions elicited from the delinquent subjects significantly more COM ($p < .04$) and AGG ($p < .03$) responses and less DIR ($p < .006$) responses. In the female set, the non-conventional instructions resulted in significantly more COM ($p < .04$) and less DIR ($p < .03$) responses from the delinquent subjects. The non-conventional instructions promoted significantly more PAS ($p < .02$) responses. There was only one category for the delinquent in which significant differences in perception of set appeared. The delinquent subjects perceived significantly more FEMALE ($p < .002$) responses within the child set.

The non-delinquent subjects with non-conventional instructions displayed statistically significant preferences for COM ($p < .03$) responses in the male set, TEN ($p < .03$) in the female set, and COM ($p < .007$) in the child set.

Although on the basis of these findings the null hypothesis can be rejected, the researcher urges caution, since these differences tended to be random and no directional bias could be ascertained. Furthermore, none of the categorical differences were consistent across the three sets of stimulus cards. There was a tendency for the non-conventional instructions to promote greater variability of response and greater accuracy in identification of male, female, and child cards.

Hypothesis 4 states that there will be no significant differences in the frequency of responses by categories between

TABLE 5

NORMS FOR NON-CONVENTIONAL AND CONVENTIONAL INSTRUCTIONS
FOR NON-DELINQUENT GROUPS ON THE MODIFIED HAND TEST

	Male					Female					Child				
	Non Con Ins Mdn	Con Ins Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con	Non Con Ins Mdn	Con Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con	Non Con Mdn	Con Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con
AFF	.32	.22	NS	1.26	2.49	.15	.22	NS	.33	1.87	1.55	1.82	NS	.48	1.66
DEP	.02	.02	NS	.26	.26	0.0	.06	NS	.25	.28	.20	.10	NS	1.98	.30
COM	2.22	1.95	.03	.43	.92	1.91	1.71	NS	.71	1.11	2.05	1.67	.007	.93	.70
EXH	.17	.19	NS	1.99	1.69	.36	1.95	NS	1.34	.74	.10	.10	NS	1.62	.30
DIR	1.91	1.68	NS	.55	.40	2.22	1.41	NS	1.79	.73	.24	.13	NS	1.98	.32
AGG	1.53	1.71	NS	.43	.42	.15	.26	NS	.32	1.52	.27	.47	NS	1.47	1.34
ACQ	.20	.26	NS	1.78	1.39	1.36	2.31	NS	1.22	1.60	1.69	1.95	NS	1.04	1.31
ACT	1.78	1.95	NS	.71	.62	3.86	3.05	NS	1.31	.92	2.36	1.86	NS	.87	1.21
DAS	1.79	1.82	NS	1.21	.71	2.44	2.11	NS	.85	.75	1.61	1.95	NS	1.03	1.33
TEN	1.32	1.71	NS	.31	.40	2.05	1.82	.03	1.41	1.16	1.92	1.95	NS	1.30	1.20
CRIP	.05	.04	NS	.28	.27	.05	.08	NS	.28	.29	.10	.16	NS	.30	.33
FEAR	0.0	.04	NS	.25	.26	.02	0.0	NS	.26	.25	.02	.04	NS	.26	.26
DES	.27	.35	NS	2.25	1.65	0.0	0.0	NS	.25	.25	.24	.13	NS	1.76	.32
BIZ	0.0	.02	NS	.25	.26	0.0	0.0	NS	.25	.25	0.0	.02	NS	.25	.26
FAIL	.02	.02	NS	.26	.26	0.0	0.0	NS	.25	.25	.02	.02	NS	.26	.26
MALE	8.44	8.31	NS	.76	.80	2.05	1.95	NS	.64	.46	2.35	2.14	NS	.91	.78
FEMALE	1.69	1.62	NS	1.10	1.01	8.19	8.67	NS	1.02	.81	.36	.31	NS	1.74	1.38
CHILD	1.91	1.71	NS	.73	.66	.15	.08	NS	.32	.29	7.00	7.35	NS	1.07	.92

TABLE 6

NORMS FOR NON-CONVENTIONAL AND CONVENTIONAL INSTRUCTIONS
FOR DELINQUENT GROUPS ON THE MODIFIED HAND TEST

	Male					Female					Child				
	Non-Con Ins Mdn	Con Ins Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con	Non Con Ins Mdn	Con Ins Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con	Non Con Ins Mdn	Con Ins Mdn	Sig	Q_3-Q_1 Non Con	Q_3-Q_1 Con
AFF	.41	.47	NS	1.33	1.24	.32	.35	NS	1.75	1.65	1.91	1.95	NS	1.76	.74
DEP	.07	.10	NS	.29	.30	.12	.10	NS	.31	.30	.17	.10	NS	1.99	.30
COM	2.25	2.91	.04	.73	1.79	2.22	1.54	.04	.86	.39	2.44	2.31	NS	1.14	.82
EXH	1.71	2.11	NS	.82	1.45	1.79	1.71	NS	.60	1.08	.47	.35	NS	.95	1.49
DIR	2.22	.31	.006	1.54	1.51	.15	.47	.03	.33	1.09	.17	.26	NS	2.27	3.03
AGG	1.64	2.89	.03	.57	.44	.47	1.82	NS	1.60	1.19	2.71	1.82	NS	.82	.89
ACQ	.20	.13	NS	1.98	.31	2.05	2.11	NS	1.39	1.45	2.44	.41	NS	.77	1.64
ACT	2.44	1.62	NS	.77	1.04	1.75	1.69	NS	.84	.60	1.81	1.88	NS	.70	.66
PAS	1.79	1.82	NS	1.22	1.23	.47	.47	NS	1.55	1.34	1.79	.35	.02	1.19	.88
TEN	1.36	1.71	NS	.43	1.08	2.05	2.11	NS	1.02	.89	1.91	2.31	NS	.70	.78
CRIP	.07	.16	NS	.29	.33	.32	.08	NS	1.46	.29	.24	.26	NS	1.98	2.12
FEAR	.12	.08	NS	.31	.29	.02	.06	NS	.26	.28	.06	.04	NS	.31	.27
DES	.15	.02	NS	.32	.26	.15	.13	NS	.32	.31	.17	.13	NS	2.66	.32
BIZ	.07	.10	NS	.29	.30	.12	.06	NS	.31	.28	.03	.06	NS	.27	.28
FAIL	.07	.08	NS	.29	.29	.17	.19	NS	2.65	2.50	.15	.04	NS	.32	.27
MALE	8.00	7.88	NS	1.21	1.62	1.79	1.78	NS	.92	.73	2.00	1.44	NS	.94	1.18
FEMALE	1.91	2.11	NS	.70	1.43	8.69	7.81	NS	1.00	1.19	1.47	.47	.002	.87	.84
CHILD	1.91	2.57	NS	.78	1.39	.24	.22	NS	2.25	2.13	7.25	6.06	NS	1.34	1.35

bright delinquent and bright non-delinquent adolescents with respect to the responses elicited by the "male" stimulus cards. Seven of the scoring categories for the male set showed statistically significant differences between the delinquent and non-delinquent groups. The delinquent subjects offered significantly more COM ($p < .003$), EXH ($p < .014$), and ACT ($p < .0006$) responses. The non-delinquents produced more DIR ($p < .05$) and DES ($p < .002$) responses than their delinquent complement. Although responses in the FEAR ($p < .05$) and BIZ ($p < .035$) scoring categories were limited in number, the delinquent subjects demonstrated a statistically significant preference for these variables. As a result of these findings of significant differences in 7 categories in the male set, Hypothesis 4 is rejected.

Hypothesis 5 states that there will be no significant differences in the frequency of responses by categories between bright delinquent and bright non-delinquent adolescents with respect to the responses elicited by the "female" stimulus cards. The non-delinquent subjects displayed a significant tendency to give more DIR ($p < .001$) and ACT ($p < .0001$) responses. The delinquent subjects gave significantly higher frequency AGG ($p < .015$) responses. These significant differences between the frequency of response of the delinquent and non-delinquent leads to the rejection of Hypothesis 5.

Hypothesis 6 states that there will be no significant differences in the frequency of responses by categories

TABLE 7

NORMS FOR DELINQUENT AND NON-DELINQUENT GROUPS ON EACH SCORING CATEGORY OF THE MODIFIED HAND TEST

	Male					Female					Child				
	Del Mdn	Non-del Mdn	Sig	Q_3-Q_1 Del	Q_3-Q_1 Non-del	Del Mdn	Non-del Mdn	Sig	Q_3-Q_1 Del	Q_3-Q_1 Non-del	Del Mdn	Non-del Mdn	Sig	Q_3-Q_1 Del	Q_3-Q_1 Non-del
AFF	.44	.27	NS	1.29	1.63	.33	.18	NS	1.70	2.06	1.93	2.00	NS	1.27	.83
DEP	.08	.02	NS	.29	.26	.10	.03	NS	.30	.26	.14	.15	NS	.32	.32
COM	2.56	2.08	.003	.86	.86	1.80	1.80	NS	.74	1.18	2.38	2.26	NS	1.01	1.15
EXH	.50	.18	.014	1.86	1.83	1.75	1.93	NS	.75	1.31	.38	.15	.031	1.63	.32
DIR	.38	1.59	.050	1.53	.43	.25	1.70	.001	1.57	1.05	.21	.18	NS	2.36	2.06
AGG	1.74	1.80	NS	.53	.44	2.00	.20	.015	1.36	2.20	2.17	.36	.002	.86	1.41
ACQ	.15	.23	NS	.33	1.57	2.08	1.65	NS	1.43	1.04	.44	1.80	.010	1.67	.77
ACT	1.93	1.62	.0006	1.30	.67	1.64	3.36	.0001	.73	1.15	1.83	2.17	NS	.70	.67
PAS	.50	1.80	NS	1.23	1.18	.44	2.26	NS	1.45	.79	.47	1.75	NS	1.58	1.16
TEN	1.50	1.47	NS	.83	.37	2.00	1.93	NS	.87	1.24	2.08	1.93	NS	1.38	1.30
CRIP	.10	.05	NS	.30	.27	.17	.07	NS	.34	.28	.23	.13	NS	2.05	.31
FEAR	.09	.02	.05	.29	.26	.03	.01	NS	.26	.25	.07	.03	NS	.28	.26
DES	.07	.31	.002	.29	1.91	.13	0.0	NS	.31	.25	.14	.18	NS	.32	2.37
BIZ	.08	.01	.035	.29	.25	.08	0.0	NS	.29	.25	.04	.01	NS	.27	.26
FAIL	.07	.02	NS	.28	.26	.17	0.0	NS	.34	.25	.04	.02	NS	.29	.26
MALE	7.92	8.38	NS	1.45	.76	1.86	2.00	NS	.62	.53	2.29	2.26	NS	.95	.68
FEMALE	2.00	1.65	NS	1.33	1.06	8.17	8.44	NS	1.11	.88	1.86	.33	NS	1.25	1.54
CHILD	2.17	1.80	NS	.98	.69	.23	.11	NS	2.10	.31	6.61	7.21	NS	1.38	1.01

between bright delinquent and bright non-delinquent adolescents with respect to the responses elicited by the "child" stimulus cards. Three content categories displayed statistically significant differences. The delinquent subjects exhibited significant preferences for EXH ($p < .031$) and AGG ($p < .002$) responses. The non-delinquent subjects gave significantly more ACQ ($p < .010$) responses. On the basis of these differences Hypothesis 6 is rejected.

CHAPTER VI

DISCUSSION

The systematic investigation of sex differences (see Tables 3 and 4) revealed significant differences in only three categories for non-delinquent subjects and eight categories for delinquent subjects. The researcher feels that limiting subjects to one response per card may have obscured these differences since girls and young women are more verbally responsive. There is considerable research supporting the conclusion that females are more verbally productive, fluent, and show more imagination and psychological involvement in projective testing than males of comparable background. Females tend to show more affect, and appeared more concerned with nurturance and personal relations.

In general, it can be concluded that differences between males and females are inherently influenced by group affiliation. The female delinquents perceived the male stimulus cards with significantly more affection and friendliness than their male counterparts. In the same set, the male delinquents cited significantly more responses involving rest and relaxation. The females also more readily acknowledged hostility and aggression in relation to the female hand cards, but

tended to have more difficulty in identifying the female hands, tending to see more male hands within this set. The greatest differences between male and female delinquents occurred in the child set. The males saw the children's hands as more involved in acquiring or obtaining goals or physical objects, more involved with attempts to, or attitudes toward promoting manipulation, modification, or attainment of a goal or object. As was seen in the male set, the males cited more responses conveying an attitude of rest or relaxation in the child set. The male delinquents had considerable difficulty in distinguishing the children's hands, therefore they cited significantly more female hands within this set. The delinquent males, in responding to the child set, seemed to be attempting to classify the hands as male or female and avoided the child category except in cases of extreme ambiguity.

The non-delinquents differed only in two categories, with no significant differences occurring in the male set. In the female set, the female non-delinquent subjects, as was seen in their delinquent parallel, had some difficulty identifying the female hand cards and saw significantly more male hands within the set. In viewing the child cards, the male subjects differed significantly in their preference for responses imparting a sense of anxiety and tension.

Since the instructional variable yielded only minor differences in a limited number of response categories (Tables 5 and 6), the researcher collapsed across this variable.

Within the eighteen scoring categories the differences tended to be random and no directional bias could be ascertained. None of the categories displayed consistent differences across the three sets of stimulus cards. There was a tendency for the non-conventional instructions to promote greater variability of response, as evidenced by the semi-interquartile range. Greater differences were seen in the delinquent groups where the non-conventional instructions resulted in greater accuracy in identification of male, female, and child cards.

Affection, Dependence, and Communication responses are considered as being socially positive since they acknowledge some awareness of, and concern for the rights and privileges of others. No significant differences between groups were seen in the frequency and variability of AFF responses to the male and female cards. Both groups perceived AFF primarily in the set of children's cards, however the non-delinquents displayed greater variability.

AFF responses convey an awareness of interpersonal relations involving the reciprocation or presentation of affection. The term affection is generally used to designate positive feelings toward others, but may also encompass attachments to pets, organizations, ideas, and possibly objects. The results of this study do not support the somewhat controversial premise that adolescents either experiencing difficulty in expressing, or devoid of AFF responses tend to become involved in delinquency. It can be concluded

that subjects with high frequencies of AFF responses tend to view others as being kind and benevolent and as generally meeting their needs.

Early psychologists, including William Jones (1890), William McDougall (1908), and Sigmund Freud (1905) approached affection as a derivative of instinct. John B. Watson (1925-26) reported that affection was a primary emotion which is arousable in the newborn. In the process of caring for the child the mother or other primary caretakers become the conditioned affectionate stimulus and later by generalization and conditioning the child develops a broader range of affectionate ties. It is presupposed that some exposure to affectionate stimulus is essential for the infant's survival.

Perception of high frequencies of AFF conveys the expectation that the subject will function well in reciprocal relationships and that he possesses the ability to maintain long-term involvements with others. Since relationships of this nature are self-fulfilling, AFF responses are obviously positive in their psychological interpretation.

No significant differences between groups were seen in the medians and variability of DEP responses. Both groups produced very minimal numbers of DEP responses. The highest frequency of DEP responses was seen in the child set. The frequency of responses involving an expressed dependence on or need for succor from another person may be explained from several viewpoints. Feelings of dependency in younger children are the natural result of socialization. The process of growth

involves shifting one's social orientation from immediate family to community, which provides the child with an increasing sense of competence for dealing with the world and thus provides alternate sources of feelings of security. Adolescence is typically a period during which feelings of dependence tend to be in conflict with strivings for independence.

For many delinquents the process of socialization is obviously incomplete and there is much confusion over sources of security and attachment resulting in diminished feelings of well being. In the absence of security, or in times of great distress, old attachments and sources of security are likely to be called upon. The isolated or rejected child, who has been raised with a limited sense of well being, also has no social base for security. This serves to explain why subjects giving many DEP responses can be expected to make great demands on significant others whom are considered to be essential to their well being and also why they tend to develop especially dependent relationships in therapy. Under these circumstances the base of security remains with the figures on whom attachment and security were built, because no alternative form of security has been substituted. For a person lacking feelings of attachment, the maintenance of an impression to himself and others of complete control and independence becomes very important.

The over-mothered child may have an equally difficult burden to bear. These "smothered persons" are not free to

acquire skills which provide a substitute for the security of the mother. This was obvious with some of the younger delinquents, especially those for whom the mother was the dominant family influence. Although research is scarce, there are some studies demonstrating that dependent patterns of behavior in parents are repeated in children.

The delinquent subjects perceived significantly more COM responses in the male set. No significant differences between groups were found in the female and child sets. The delinquents demonstrated, by frequency of COM responses, a greater cognizance of the many aspects of presenting or exchanging information. Communication is a major adaptive attribute, is essential for social interaction at all levels, and is one of the primary means through which learning takes place. Methods of coping, adapting, and dealing with crises are essentially cumulative and through communication learning is conveyed.

Cultural and social institutions tend to engulf the newborn presenting perplexing and sometimes conflicting information, customs, and sentiments. Communication is the central means of promoting assimilation and assumes a role of increasing importance as the child emerges from the family. The child's efforts to communicate develop in the home setting where he learns how effective communication will be in meeting his needs. Much tends to depend upon the reactions of persons who are essential to helping the child resolve conflict, their

consistency of response, and the degree of honesty the child becomes accustomed to anticipate.

Circumstance which promotes the child's manipulative efforts distorts the development of communicative abilities and may be seen as giving rise to delinquent tendencies, since the child becomes overly reliant upon the usefulness of a particular type of communication as a means of modifying his environment. The non-delinquents perceiving COM responses tended to view communication somewhat differently. Conversation and discussion were seen as being very worthwhile and there also seemed to have been an enjoyment resulting from the involvement with and reliance on others to respond. In many instances the reciprocal exchange of information was described as a means of maintaining interpersonal relations.

Significant exhibitionistic tendencies and expectations as evidenced by EXH responses were more prevalent in the delinquent adolescents. Statistically significant differences were seen in the male and child sets with the highest frequency of response being seen in the female set. Wagner (1969) speculated that EXH people were rewarded as children for "being good" or for displaying special talents, and as a result they have learned to derive pleasure from receiving admiration from others. He further speculates that the essence of the EXH response is the need for praise and the need to be the center of attention. The need for attention stems partly from the lessons parents teach their children: it is important to

be admired, to have people seek you out, and to be a public figure. In the absence of a strong and stable self, the adolescent cannot be satisfied with his own perceptions of himself but needs others to tell him that he is all right. Nor can he judge his own worth in terms of his talents, appearance, and possessions unless he meets with general acclaim. The greater the acclaim, the more it is appreciated. Adolescents have never been characteristically subtle, and unless the audience is loudly appreciative, there is reason to doubt one's acceptance by the group.

EXH response frequency is neither positive nor negative in social value. An unusually high frequency does indicate that special conditions are necessary for optimal functioning and that adjustment potential may be somewhat limited.

Aggression and Direction are considered "socially negative" responses because they convey that the privileges of others are relatively unimportant. The non-delinquents perceived more DIR responses in all three sets with statistically significant differences in the male and female set. The highest frequency of DIR responses was seen in the female set. The DIR response involves a direct influencing of the activities of dominating or directing of others. The dominating or directing individual attempts to exercise a great deal of control over others by strict and authoritarian attitude and frequently resorts to threats of punishment when encountering opposition. Adapting to this role presupposes

that the best means of dealing with others is generally through non-aggressive types of dominance. The mechanisms of transfer and generalization carry over directive attitudes to new situations and apply them whenever they will work. Individuals who devote much energy to directing or dominating others may be seen as displaying little warmth and affection.

Clinical observation of the extreme dominating personality reveals strong underlying feelings of personal inadequacy and rejection. The total absence of DIR responses is indicative of very limited ability for social accomplishment and administration. Wagner stated that in normal records, using the Hand Test, the approximate percentage expectancies for DIR was 20 percent. This study resulted in approximate percentages of 5 percent and 10 percent for delinquent and non-delinquent groups.

The delinquent adolescents more readily acknowledged aggression than did the non-delinquents. Statistically significant preferences for AGG were found in the female and child sets with the highest frequency of AGG occurring in the child set. This may directly reflect the degree of frustration the delinquent adolescents have encountered. The underlying assumption here being that frustration, the obstruction of the occurrence of sought-after goals at its proper time, can lead to aggression. The frustration may be perceived as threats or attacks upon the self which may also give rise to aggressive tendencies seen in these subjects. Two considerations are

essential at this point: First, the instigation to aggression resulting from frustration is usually in direct proportion to the strength of the thwarted drive; and, secondly, that in some situations frustration is anticipated and will not lead to aggressive actions. Rarely is aggression directed against the frustrator, because fear or anxiety function as inhibiting forces. The process of inhibition itself is inhibiting and tends to increase the individual's aggressive tendencies giving rise to the explosive quality seen in many of the delinquent subjects. Further, it may be projected that the aggressive child is one who has watched others acting aggressively and he has modeled his behavior after them. The aggressive child encounters much difficulty in dealing with others since his hostility is so overwhelming. A high frequency of AGG responses is indicative of the anti-social personality typically found in delinquents and criminals.

The non-delinquents showed a preference for ACQ responses indicating a strong desire to exert oneself in order to attain pre-established goals, along with the subjective feeling of desire which accompanies such aspirations. Statistically, significant differences were present only in the child set. The highest frequency of ACQ response occurred in the child set. People striving for higher status, increased knowledge, greater power, etc., can be expected to produce a higher frequency of ACQ responses. Conventionalism may be seen as the mode through which the individual seeks out higher status. Although ACQ responses were less frequently given by delinquents, the

content of their responses obviously conveyed attempts at acquisition that may be regarded as occurring because of a deficiency in conscience developments and may be indicative of underlying hostility. In addition to the hostility, the delinquent subjects giving an unusually high number of ACQ responses were considered by the researcher as being overly concerned with the dominance-submission, i.e., leader-follower dimension, and also overly preoccuppied with power figures. Several of the delinquents scoring high in the ACQ categories voiced exaggerated concern over sexual behavior and incorporated this concern into test responses.

The origins of the ACQ responses would seem to lie in the experiences of the individual with parents and significant others in early childhood. Probably of greatest importance would be the repression and/or denial of aggressive or unacceptable impulses and an externally oriented approach to problem-solving. These strivings can readily be connected to the non-delinquents' environmental orientation toward achievement.

The non-delinquent adolescents showed a preference for constructive accomplishment at all levels, as evidence by the frequency of ACT responses. Statistically significant differences were found in the male and female sets. The highest frequency of ACT responses occurred in the female set. ACT responses are an important index to a person's attitudes and social adjustment. ACT as a category is more concerned

with psychological rather than the physical effort required for the completion of the given task. To some extent, boys' responses should be judged more stringently than girls' because boys have more available physical energy and the expectation and standards in relation to activities and accomplishment for boys are considerably greater. Boys in our society are oriented toward active mastery and control of the environment, whereas girls take on a more passive, accepting orientation.

Early parental emphasis on independence and mastery in children is a contributing factor in the development of high need for achievement. Parents who are dominant authoritarian and interfere with their children's attempts to achieve produce low-achievement-oriented children.

In addition to the sex and parental differences, age differences must be considered. Orientation toward activity tends to fluctuate with age. In general, younger children tend to be more interested in gaining personal and material possessions but as they grow older their orientation toward activity becomes more general and less self-centered. Solitary activity fills an important part of any adolescent's life. As the adolescent gains social competence, he tends to become more involved in group activity. Both men and women tend to engage in fewer activities with increasing chronological age.

There should be some ACT responses on all normal records. Only under very unusual circumstances could an individual perceive no ACT responses and remain environmentally efficient.

The delinquent adolescents perceive less PAS responses, however none of the Chi square values were significant. The highest frequency of PAS responses occurred in the female set. The PAS response means that the individual will, at some point, have need for and will accept conditions allowing psychological and/or physical passivity. In the limited research existing on the topic of passivity it is generally defined as a coping response characterized by complying to demands and/or needs without inner commitment, satisfaction, or pride in one's own ability to accomplish specific tasks. Evaluation of the passive delinquents revealed an inability to direct themselves. Approximately one-third of the delinquent subjects produced records with unusually high frequencies of PAS responses. It is therefore not surprising that these subjects are unable to cope well with demands and appear easily confused and distraught. Because of their inability to initiate their own activities or to maintain them on their own, the passive delinquent's attempts to act independently frequently are unsuccessful, and as a result he is very prone to group influence.

PAS responses with adolescents may be seen as being indicative of the child's incentive toward growth, his

initiative, and his strivings toward independence. Many observers have pointed to the fact that deficient maternal care fails to stimulate a child's early mental processes adequately, which tends to foster passivity. Self-activation is thwarted or punished; passive responses are encouraged and rewarded, and responding passively has acquired survival value. As failures begin to occur, there is an inevitable regression to more discouraged, impatient, frightened, and passive behavior as the child seeks out environmental situations which assure the perpetuation of life without struggle. The control group's preference for PAS may be interpreted as a psychological desire to avoid struggle and confrontation. Relaxation and enjoyment become very important as competition is avoided.

Tension responses indicate a keenly felt expenditure of energy which accomplishes very little, with an accompanying feeling of anxiety and discomfort. The delinquent adolescents displayed preference for these responses, however this preference was not statistically significant. The highest frequency of TEN responses occurred in the child set. Tension is created by powerful conflicts and is probably most often resolved by voluntary inhibition of the impulse, because it is either of dangerous or threatening nature. This voluntary inhibition often leads to avoidance. The unconscious process by which a person deceives himself about the nature of the forces in the conflict is equatable to the frequently

seen self-deception of delinquents. This solution to conflict has serious consequences for the delinquent's later adjustment. Generally, the healthier modes of adjustment involve the resolution of tension without self-deception. It is widely held that ways of coping with tension are learned. Variations in these mechanisms are primarily associated with variations in life experiences. Members of the same society sharing similar kinds of experiences will share many coping mechanisms. The coping mechanisms are conceived of as efforts to reduce the over-stimulation involving strong emotional states. Projection, rationalization, displacement, and reaction formation are mechanisms representing various forms of self-deception frequently seen in adolescents. If a person does not succeed in resolving or coping with the tension by utilizing defense mechanisms, he will remain in a high state of emotion which in itself disturbs the person's psychological comfort and interferes with adequate functioning in other spheres. Associated with self-deception are distortions of reality and narrowing of experiences which results in an increased vulnerability to each new source of tension. As the distortion of reality leads to inappropriate behavior in social situations, many secondary problems are likely to arise. When a person can no longer tolerate or defend himself against severe tension, the more serious process of regression takes place. As the person regresses to more primitive levels of organization of the personality, withdrawal takes place.

Schizophrenia is commonly thought of as a regressive disorder in which the individual functions at a regressed level and tends to give up many or most efforts to deal realistically with both external and internal tension.

Although the presence of TEN responses may have some value in reducing the strength of the conflict and hence the severity of the emotional disturbance, they are also self-defeating in that they have consequences that make for further difficulties. Wagner (1969) states that TEN responses express a partial suppression and/or dissipation of the body's energy resources under conditions of interpersonal and/or environmental stress. Consequently, TEN responses are given by anxiety neurotics, obsessive compulsives, and normals who suppress action tendencies. In many instances the delinquent cannot identify or understand what is happening to him; he is miserable and does not seem to know why. Others react to him in unpleasant ways for reasons he does not understand and he can find no ready solution to his dilemma.

Although the delinquent adolescents demonstrated a preference across all three sets, no statistically significant differences were observed in the frequency of CRIP responses. The highest frequency of CRIP responses occurred in the child set. The CRIP response is primarily a projection of the subject's own psychological insufficiencies and inadequacies. The inferiority may be expressed in many different spheres. Although projection is frequently accompanied by hostility,

projection can be seen as expressing both motivation and hostility. In some ways projection is a subtler and more sophisticated distortion of consciousness than most other defense mechanisms. Projection is not so much a modification of the actual content of consciousness as it is a modification of the organization of consciousness. In projection the thoughts and ideas themselves are conscious. The process of projection serves to break the connection between the ideational representatives of dangerous impulses and self.

CRIP responses are indicative of all types of inferiority which result when a child regularly fails to overcome weaknesses or when for any reason there is too much emphasis on any particular inferior trait. In some instances, the inferiority directly results from such qualities as shyness. In general, it may be concluded that the delinquent subjects had stronger feelings of inferiority. Fearful and needing support, the inadequate delinquent may see the world as divided into the weak and the strong. He wants to feel that he is among the strong. To maintain this position he develops attitudes of distrust and suspicion.

Although some adolescents openly show feelings of inferiority, others take the opposite course. Finding even a suspicion of inferiority frightening, they hide every hint of such feeling from themselves and others by being boastful and overbearing.

There were more frequent FEAR responses given by the delinquent subjects, however the differences were statistically significant only in the male set, which contained the highest frequency of FEAR responses. FEAR responses include those in which the hand is perceived as being threatened with pain, injury, or death and also those in which the hand is clearly perceived as meting out pain, injury, or death to the subject or identified others. The young child is unaffected by many things that frighten him at a later time. The changing susceptibility to fear is intertwined with many other aspects of the child's development. As the child's scope of understanding broadens, he is able to more realistically recognize possibilities of disaster and is also better able to handle some of the situations in which he finds himself. Fears of personal injury are also very much influenced by learned response. A child may learn to perceive fear in situations which in the past have been startling, overwhelming, or painful. Feelings of inadequacy and weakness are obvious conditions underlying the development of fear of injury. Anything which weakens a child, such as illness or physical disability, tends to promote feelings of defenselessness. Attitudes and experiences which lower the child's self-confidence, or involve him in situations fostering insecurity, increase the susceptibility of fear of personal harm in the child, and increase the probability of fearful responses to the environment. Adults may influence a child's

fear through the example they set by their own fears. Either by subtle or obvious manifestations of their own fears of injury, adults suggest to the child the existence of danger which also weakens the child's sense of security.

FEAR responses in which the hand is perceived as inflicting pain more appropriately belong to the aggression (AGG) category. These responses may be seen as influenced by circumstance very similar to that discussed in relation to aggression.

The DES, BIZ, and FAIL responses are classified as withdrawal responses which are indicative of impaired adjustment potential. Detrimental pressures during infancy and childhood, specific emotional trauma, and/or chronically negative interpersonal relations can lead to much difficulty in the assumption of conventional roles.

There were statistically significant differences in the frequency of DES responses in the male set, which contained the highest frequency of DES. The DES response consists of only a mere acknowledgement of the presence of the hand with possibly a few accompanying noncommittal descriptive details or feeling tones. It can be considered as a safe and obviously conventional reaction to the stimuli which involves only minimal organization. With some of the more manipulative bright delinquents the DES responses may be seen as a form of evasion.

Although BIZ responses were rare, the delinquent subjects demonstrated a statistically significant preference for responses of this nature in the male set. The Bizarre response is pathognomonic of severe mental disorder, since the subject is partially or totally ignoring the drawing of the hand. The response is predicated on hallucinatory content, delusional ideation, or other peculiar, pathological thinking. The acknowledgement of BIZ responses may be considered indicative of a state of long-standing bizarre mannerisms. The individual is generally withdrawn and isolated and will at times appear obviously preoccupied with fantasies. Based on Wagner's (1969) observations the Normal subjects were not expected to give BIZ responses.

There were no statistically significant differences in the FAIL category. Failure responses which are those in which the subject gives no scorable response were more frequently given by delinquent subjects. This response should not be mistaken for a conscious refusal to associate, or to report an association. Failure responses for subjects of normal intelligence appear to be due to fear-ridden needs for certainty in which there is no possibility of being "wrong." The subject tends to appear as repressing either intellect or emotion. FAIL responses may also be viewed as indicating the possibility of organic impairment.

The response category of ACT elicited the greatest number of (Mdn. 7.20) responses from the control group subjects.

The highest frequency of ACT responses occurred in the female set (Mdn. 3.36, Child Mdn. 217, and Male Mdn. 1.63). This conveys awareness and concern for constructive activity and the orientation to think in a goal-directed fashion. The non-delinquent subjects also perceived a high frequency of COM (Mdn. 3.77) responses. It was observed that the child set elicited the highest frequency of COM (Mdn. 2.26, Male Mdn. 2.08, Female Mdn. 1.80) responses, which acknowledge a reliance on interpersonal communication as a means of relating to others and as a way of modifying the environment. This further indicates that the non-delinquent subjects have previously experienced gratification from the communication processes. There was also a high frequency of DIR (Mdn. 2.88) responses given by the non-delinquent subjects, indicating a willingness and a desire to direct the activities of others. Striking differences across sets were seen in DIR responses. The female set elicited Mdn. 1.70, the Male set Mdn. 1.59, and the Child set Mdn. 0.18. DIR responses also indicate the tendency to acknowledge the acceptance of authority. There was also considerable emphasis on frustration and anxiety by the non-delinquent subjects as evidenced by the frequency of TEN (Mdn. 2.26) responses. The Medians for TEN responses were identical for Female and Child set (Mdn. 1.93), while the Median for the Male set was 1.47.

The highest frequency of responses given by delinquent subjects were within the COM (Mdn. 4.94) category. COM was

seen primarily in the Male (Mdn. 2.56) and Child (Mdn. 2.38) sets, with considerably less (Mdn. 1.80) responses being perceived in the Female set. The delinquents further perceived a great number of ACT (Mdn. 4.50) responses. Only minor differences were seen across sets. The Medians 1.93, 1.64, and 1.83 were noted for Male, Female, and Child sets. The delinquents offered a high frequency of AGG (Mdn. 3.23) responses which involve the perception of overt acts of hostility. AGG responses may be seen as directly reflecting frustration and in large proportions are indicative of anti-social personality traits. It was observed that the highest frequency of AGG responses took place in the Child set (Mdn. 2.17). The Female set (Mdn. 2.00) and the Male set (Mdn. 1.74) displayed somewhat lower frequencies. Closely paralleling the non-delinquents, the delinquents perceived a high frequency of TEN (Mdn. 2.60) responses. The Medians for the Female (2.00) and Child (2.08) sets were very similar, but somewhat less TEN (Mdn. 1.50) responses were reported in the Male set.

The male cards were perceived by the non-delinquent subjects as primarily expressing behaviors in the scoring categories of COM (Mdn. 2.08), AGG (Mdn. 1.80), and PAS (Mdn. 1.80), whereas the delinquent subjects preferred primarily COM (Mdn. 2.56), ACT (Mdn. 1.93), and AGG (Mdn. 1.74). In comparison, the female cards were seen by the non-delinquent subjects as mainly expressing ACT (Mdn. 3.36), PAS (Mdn. 2.26), and TEN and EXH (Mdn.'s 1.93), however the

delinquents perceived principally ACQ (Mdn. 2.08), AGG and TEN (Mdn.'s 2.00), and COM (Mdn. 1.80). Both groups encountered greater difficulty in differentiation of the children's hands. The non-delinquent adolescents perceived predominantly COM (Mdn. 2.26), ACT (Mdn. 2.17), and AFF (Mdn. 2.00). The delinquents perceived chiefly AGG (Mdn. 2.17), TEN (Mdn. 2.08), and AFF (Mdn. 1.93).

There was much greater agreement in the categorical interpretation of children's hands. Both groups saw the children's hands as involved primarily in constructive activity and secondarily in reciprocal exchanges of information. The non-delinquent adolescents acknowledged the need for, and the positive aspects of relationships which involve the mutual interchange of affect and attitudes. Affection is seen as being nurtured, and relations with others as mutually satisfying and self-perpetuating. The delinquents differed in that they again projected onto the children's hand cards a great deal of overt aggression.

The delinquent subjects had greater difficulty in differentiation of the three (3) sets of hand cards. There was a tendency for delinquents to see more of the male and female hands as children's hands. However, on the set of children's hands they perceived less child responses than did the non-delinquents. The general trend in both delinquent and control group was to perceive slightly more male responses and approximately the same number of female and child responses.

Of particular concern in this study is the prediction of acting out behavior. Acting out refers to the free, deliberate, and often malicious indulgence of impulse, particularly in the sphere of aggression. Similar to psychopathic behavior, acting out conveys a disregard for other people's feelings, and may imply a conscious desire to inflict pain. The acting out ratio, A.O.R., does not predict overt acts, but the tendency to act out aggressively. As the DIR plus AGG exceeds AFF plus DEP plus COM the expectancy of anti-social behavior increases. The composite ratio for the delinquent adolescents was 455:286 ($\bar{X}$ 7.6:4.8) whereas the non-delinquents achieved a ratio of 370:307 ($\bar{X}$ 6.2:5.1).

The delinquent's acting out may be viewed as a means of communicating unconscious conflict and also acknowledges that the delinquent's main mode of functioning is instant need-gratification. As stress burdens the child, he resorts to various coping mechanisms. For the delinquent this frequently entails acting out behavior. For the delinquent, acting out has taken on the dual role of a means of problem-solving and of communication.

Acting out originates in the impulsive acts of infancy during which action is the only means of summoning assistance and/or gratification. If the child learns language from adults whom he learns that he cannot trust, he will not rely on speech as a means of orienting himself to reality and will, as a direct result, resort to pre-verbal means of communication.

Similar to the delinquent adolescent, the infant meets his needs in an impulsive manner which conveys a lack of reality testing. Since the delinquent's acting out is usually fairly well rationalized, it therefore contains elements of advanced thought and an attempt at integration. Acting out is usually accompanied by an indifference to reward and punishment, which further strains the child's relationship with his parents and community. Typically, the delinquent's fantasied notions about himself and the nature of the acting out behavior are at odds with deeper feelings which are harbored with respect to authority figures. If he steals, he usually thinks that his theft is justified on the basis of previous injustices. If he continually fights, it is only to defend himself against danger.

It appears obvious that children need a reasonably constant, dependable, and predictable environment to react to, identify with, and eventually differentiate from. The maladaptive responses of the delinquents may be seen as the result of various perceptions conveying instability. When the external environment is unpredictable, the child seems to construct his own inner world which he continues to prefer to the existing outer world. Children generally attempt to exhibit only those behaviors which will provide protection from anticipated threats of reaction and/or conflict with significant others. It is primarily this consideration which often accounts for the child's assumption of responsibility

for the parents' feelings toward him and attempts to direct his behavior accordingly. The need for a predictable external environment extends beyond childhood and not only makes the distinction between the acceptable and unacceptable aspects of his own behavior but also makes these distinctions in regard to others.

The process of growth incorporates an increasing emphasis on sociability. Constant learning and acquisition facilitate a broadened conception of self and the assumption of specific roles.

When a child starts school, he becomes involved in one of society's most influential institutions. The intellectual, verbal, and reasoning skills developed in school result in considerable changes in the child's notion of himself in relation to the structure of society. The kinds of behaviors which are encouraged or discouraged by the school situation have very important consequences with respect to self-concept.

The child identified as a delinquent has acquired this classification primarily through relationships with other people. The role of delinquent may have been one which the child was driven to by early and continued frustrating and/or traumatic experiences with adults. Possibly the delinquent adolescent may be seen as reacting to parental fears and anticipations that he is bad, by actually identifying with such expectations.

The analysis by card for non-delinquent and delinquent groups (Tables 8 and 9) reveals only four cards which the researcher

TABLE 8

PERCENTAGE OF RESPONSES BY CARD ON THE MODIFIED HAND TEST FOR THE NON-DELINQUENT GROUPS

CARD NO.	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	fM	fF	fC
H5	0.0	0.0	13.3	5.0	0.0	28.3	46.7	1.7	18.3	8.3	28.3	11.7	3.3	0.0	15.0	8.3	0.0	1.7	10.0	90.0	8.3	1.7
H9	0.0	0.0	6.7	0.0	66.7	1.7	75.0	0.0	13.3	0.0	13.3	1.7	0.0	0.0	1.7	10.0	0.0	0.0	10.0	98.3	0.0	1.7
H10	0.0	0.0	66.7	3.3	1.7	0.0	71.7	0.0	21.7	0.0	21.7	1.7	0.0	0.0	1.7	5.0	0.0	0.0	5.0	76.7	11.7	11.7
H12	0.0	0.0	1.7	3.3	3.3	3.3	11.7	0.0	5.0	13.3	18.3	61.7	1.7	0.0	63.3	6.7	0.0	0.0	6.7	83.3	6.7	10.0
H16	0.0	0.0	15.0	0.0	55.0	1.7	71.7	0.0	13.3	0.0	13.3	0.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	80.0	8.3	11.7
H35	8.3	1.7	6.7	1.7	8.3	3.3	30.0	5.0	30.0	20.0	55.0	8.3	1.7	1.7	11.7	3.3	0.0	0.0	3.3	86.7	11.7	1.7
H38	21.7	0.0	3.3	0.0	0.0	16.7	41.7	18.3	31.7	1.7	51.7	5.0	0.0	0.0	5.0	0.0	1.7	0.0	1.7	71.7	8.3	20.0
H42	3.3	1.7	6.7	13.3	13.3	3.3	41.7	1.7	25.0	11.7	38.3	8.3	1.7	0.0	10.0	8.3	1.7	0.0	10.0	41.7	1.7	36.7
H43	6.7	0.0	18.3	1.7	6.7	6.7	40.0	3.3	20.0	30.0	53.3	3.3	0.0	0.0	3.3	3.3	0.0	0.0	3.3	93.3	3.3	3.3
H44	1.7	0.0	3.3	1.7	5.0	66.7	78.3	0.0	3.3	1.7	5.0	15.0	0.0	1.7	16.7	0.0	0.0	0.0	0.0	96.7	3.3	0.0
H13	0.0	3.3	38.3	5.0	48.3	0.0	95.0	0.0	1.7	0.0	1.7	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.3	3.3	93.3	3.3
H15	10.0	0.0	1.7	1.7	10.0	5.0	28.3	1.7	26.7	20.0	48.3	13.3	3.3	0.0	16.7	5.0	0.0	1.7	6.7	21.7	76.7	1.7
H22	6.7	0.0	0.0	0.0	0.0	15.0	21.7	30.0	30.0	5.0	65.0	8.3	0.0	0.0	8.3	5.0	0.0	0.0	5.0	31.7	66.7	1.7
H23	0.0	0.0	10.0	1.7	11.7	1.7	25.0	15.0	45.0	10.0	70.0	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	23.3	71.7	5.0
H24	5.0	1.7	5.0	33.3	1.7	1.7	48.3	6.7	21.7	3.3	31.7	15.0	1.7	0.0	16.7	3.3	0.0	0.0	3.3	1.7	95.0	3.3
H31	1.7	0.0	0.0	23.3	0.0	1.7	26.7	15.0	45.0	1.7	61.7	1.7	5.0	1.7	8.3	1.7	0.0	1.7	3.3	1.7	95.0	3.3
H32	0.0	0.0	6.7	0.0	15.0	3.3	25.0	0.0	61.7	10.0	71.7	1.7	0.0	0.0	1.7	1.7	0.0	0.0	1.7	23.3	75.0	1.7

TABLE 8 - Continued

CARD NO.	AFF	DEP	COM	EXH	DIR	AGG	≤INT	ACQ	ACT	PAS	≤ENV	TEN	CRIP	FEAR	≤MAL	DES	FAIL	BIZ	≤WITH	fM	fF	fC
H40	0.0	0.0	1.7	3.3	1.7	6.7	13.3	1.7	56.7	3.3	61.7	20.0	3.3	0.0	23.3	1.7	0.0	0.0	1.7	21.7	75.0	3.3
H45	6.7	0.0	18.3	3.3	3.3	1.7	33.3	1.7	46.7	8.3	56.7	6.7	0.0	0.0	6.7	3.3	0.0	0.0	3.3	15.0	85.0	0.0
H46	1.7	0.0	10.0	3.3	1.7	5.0	21.7	1.7	23.3	35.0	60.0	13.3	0.0	0.0	13.3	5.0	0.0	0.0	5.0	0.0	98.3	1.7
H14	21.7	3.3	5.0	3.3	1.7	1.7	36.7	13.3	25.0	5.0	43.3	13.3	1.7	0.0	15.0	5.0	0.0	0.0	5.0	35.0	1.7	63.3
H17	5.0	8.3	3.3	3.3	0.0	1.7	21.7	6.7	16.7	33.3	56.7	10.0	5.0	0.0	15.0	5.0	1.7	0.0	6.7	3.3	3.3	93.3
H18	20.0	1.7	8.3	3.3	6.7	5.0	45.0	8.3	21.7	1.7	31.7	10.0	11.7	1.7	23.3	0.0	0.0	0.0	0.0	31.7	18.3	50.0
H28	1.7	0.0	10.0	1.7	1.7	3.3	18.3	1.7	65.0	10.0	76.7	1.7	0.0	0.0	1.7	3.3	0.0	0.0	3.3	53.3	20.0	26.7
H33	36.7	0.0	11.7	0.0	5.0	11.7	65.0	0.0	23.3	1.7	25.0	6.7	0.0	0.0	6.7	3.3	0.0	0.0	3.3	68.3	8.3	23.3
H34	0.0	0.0	1.7	1.7	13.3	16.7	33.3	3.3	31.7	8.3	43.3	18.3	1.7	0.0	20.0	3.3	0.0	0.0	3.3	16.7	3.3	80.0
H36	26.7	5.0	26.7	3.3	1.7	0.0	63.3	11.7	5.0	11.7	28.3	3.3	0.0	0.0	3.3	3.3	1.7	0.0	5.0	3.3	3.3	93.3
H39	5.0	3.3	43.3	0.0	0.0	0.0	51.7	20.0	10.0	1.7	31.7	5.0	1.7	0.0	6.7	8.3	0.0	1.7	10.0	5.0	1.7	93.3
H47	8.3	1.7	28.3	3.3	3.3	1.7	45.0	20.0	21.7	3.3	45.0	5.0	1.7	0.0	6.7	3.3	0.0	0.0	3.3	0.0	1.7	98.3
H49	1.7	5.0	8.3	5.0	5.0	8.3	31.7	35.0	13.3	0.0	48.3	8.3	5.0	3.3	16.7	3.3	0.0	0.0	3.3	13.3	0.0	86.7

TABLE 9

PERCENTAGE OF RESPONSES BY CARD ON THE MODIFIED HAND TEST FOR THE DELINQUENT ADOLESCENTS

CARD NO.	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	fM	fF	fC
H5	8.3	3.3	8.3	16.7	0.0	30.0	66.7	0.0	5.0	5.0	10.0	13.3	0.0	1.7	15.0	6.7	1.7	0.0	8.3	66.7	8.3	25.0
H9	0.0	0.0	61.7	0.0	25.0	1.7	88.3	0.0	3.3	1.7	5.0	1.7	0.0	3.3	5.0	1.7	0.0	0.0	1.7	90.0	5.0	5.0
H10	3.3	0.0	75.0	6.7	1.7	3.3	90.0	1.7	5.0	1.7	8.3	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	73.3	5.0	21.7
H12	0.0	1.7	0.0	1.7	1.7	13.3	18.3	0.0	8.3	13.3	21.7	45.0	0.0	0.0	45.0	3.3	1.7	10.0	15.0	76.7	6.7	16.7
H16	1.7	5.0	51.7	1.7	28.3	0.0	88.3	3.3	0.0	0.0	3.3	5.0	0.0	1.7	6.7	1.7	0.0	0.0	1.7	70.0	8.3	21.7
H35	10.0	1.7	10.0	3.3	5.0	5.0	35.0	8.3	10.0	20.0	38.3	6.7	10.0	0.0	16.7	8.3	1.7	0.0	10.0	73.3	25.0	1.7
H38	33.3	1.7	6.7	1.7	0.0	20.0	63.3	11.7	10.0	1.7	23.3	1.7	3.3	3.3	8.3	1.7	1.7	1.7	5.0	83.3	8.3	8.3
H42	0.0	0.0	16.7	31.7	1.7	0.0	50.0	1.7	25.0	3.3	30.0	15.0	1.7	1.7	18.3	1.7	0.0	0.0	1.7	38.3	8.3	53.3
H43	33.3	0.0	21.7	13.3	3.3	6.7	48.3	1.7	13.3	20.0	35.0	8.3	1.7	0.0	10.0	3.3	1.7	1.7	6.7	75.0	15.0	10.0
H44	0.0	0.0	0.0	1.7	1.7	81.7	85.0	1.7	0.0	0.0	1.7	8.3	0.0	3.3	11.7	1.7	0.0	0.0	1.7	95.0	3.3	1.7
H13	3.3	3.3	61.7	8.3	16.7	0.0	93.3	0.0	3.3	0.0	3.3	1.7	0.0	0.0	1.7	1.7	0.0	0.0	1.7	6.7	81.7	11.7
H15	8.3	1.7	5.0	8.3	0.0	5.0	28.3	1.7	30.0	13.3	45.0	25.0	0.0	0.0	25.0	1.7	0.0	0.0	1.7	15.0	83.3	1.7
H22	6.7	0.0	0.0	5.0	0.0	38.3	50.0	25.0	3.3	0.0	28.3	11.7	6.7	0.0	18.3	0.0	3.3	0.0	3.3	23.3	76.7	0.0
H23	1.7	0.0	25.0	0.0	3.3	3.3	33.3	13.3	15.0	16.7	45.0	11.7	0.0	0.0	11.7	8.3	1.7	0.0	10.0	13.3	78.3	8.3
H24	13.3	3.3	6.7	33.3	3.3	1.7	61.7	5.0	15.0	1.7	21.7	10.0	0.0	1.7	11.7	0.0	5.0	0.0	5.0	6.7	88.3	5.0
H31	5.0	1.7	0.0	28.3	0.0	1.7	36.7	3.3	15.0	5.0	23.3	8.3	21.7	1.7	31.7	0.0	1.7	6.7	8.3	13.3	80.0	6.7
H32	0.0	0.0	15.0	8.3	0.0	11.7	35.0	8.3	31.7	1.7	41.7	8.3	3.3	0.0	11.7	3.3	8.3	0.0	11.7	36.7	56.7	6.7

TABLE 9 - Continued

CARD NO.	AFF	DEP	COM	EXH	DIR	AGG	≤INT	ACQ	ACT	PAS	≤ENV	TEN	CRIP	FEAR	≤MAL	DES	FAIL	BIZ	≤WITH	fM	fP	fC
H40	5.0	1.7	0.0	8.3	5.0	1.7	21.7	3.3	31.7	3.3	38.3	23.3	1.7	1.7	26.7	5.0	6.7	1.7	13.3	26.7	26.7	5.0
H45	3.3	0.0	3.3	13.3	1.7	5.0	26.7	3.3	31.7	10.0	45.0	13.3	0.0	0.0	13.3	11.7	3.3	0.0	15.0	20.0	75.0	5.0
H46	15.0	1.7	6.7	11.7	3.3	1.7	40.0	5.0	16.7	16.7	38.3	11.7	0.0	1.7	13.3	6.7	0.0	1.7	8.3	1.7	93.3	5.0
H14	8.3	6.7	13.3	5.0	1.7	5.0	40.0	18.3	16.7	6.7	41.7	6.7	5.0	0.0	11.7	3.3	3.3	0.0	6.7	46.7	5.0	48.3
H17	3.3	1.7	0.0	10.0	0.0	16.7	31.7	3.3	21.7	23.3	48.3	18.3	0.0	0.0	18.3	1.7	0.0	0.0	1.7	5.0	5.0	90.0
H18	20.0	1.7	11.7	3.3	8.3	6.7	51.7	10.0	8.3	3.3	21.7	6.7	11.7	0.0	18.3	6.7	1.7	0.0	8.3	33.3	20.0	46.7
H28	3.3	0.0	6.7	10.0	0.0	3.3	23.3	3.3	35.0	13.3	51.7	15.0	5.0	0.0	20.0	0.0	3.3	1.7	5.0	53.3	23.3	23.3
H33	18.3	6.7	10.0	3.3	11.7	16.7	66.7	0.0	10.0	10.0	20.0	5.0	1.7	1.7	8.3	1.7	3.3	0.0	5.0	58.3	8.3	33.3
H34	1.7	0.0	1.7	3.3	0.0	26.7	33.3	0.0	26.7	10.0	36.7	16.7	1.7	1.7	20.0	8.3	1.7	0.0	10.0	21.7	15.0	63.3
H36	23.3	1.7	16.7	10.0	5.0	6.7	63.3	3.3	15.0	10.0	28.3	1.7	1.7	1.7	5.0	1.7	0.0	1.7	3.3	10.0	5.0	85.0
H39	1.7	3.3	30.0	6.7	5.0	5.0	51.7	3.3	25.0	0.0	28.3	3.3	6.7	0.0	10.0	8.3	0.0	1.7	10.0	6.7	0.0	93.3
H47	0.0	1.7	26.7	5.0	1.7	6.7	41.7	16.7	21.7	0.0	38.3	6.7	3.3	3.3	13.3	5.0	1.7	0.0	6.7	11.7	0.0	88.3
H49	1.7	0.0	13.3	10.0	3.3	13.3	41.7	13.3	20.0	3.3	36.7	8.3	5.0	3.3	16.7	1.7	1.7	1.7	5.0	33.3	1.7	65.0

feels should be eliminated due to lack of discriminatory power. In order to provide a more comprehensive overview of the stimulus cards, percentages rather than medians were compiled. Card H-10 was interpreted as primarily conveying communication. Sixty-six and seven-tenths percent COM responses were elicited from each of the two groups. Card H-12 elicited mostly TEN; 61.7 percent and 45 percent TEN responses were given by non-delinquent and delinquent subjects, respectively. Card H-44, an obviously clenched fist, represented aggression to most subjects; 78.3 percent non-delinquent and 81.7 percent delinquent subjects gave AGG responses to this card. Since these three cards were from the male set, it may be postulated that the subjects felt more restricted in their interpretation of the male hands. The researcher urges caution when considering conclusions of this nature, since it is empirically impossible to determine to what degree the overt nature of stimulus cards affects the dynamics of these interpretations.

The remaining card suggested for elimination is in the female set. Card H-24 elicited 33.3 percent EXH responses from each group, 21.9 percent ACT from non-delinquent, and 15 percent ACT from delinquent groups; and 15 percent TEN from non-delinquent and 10 percent TEN from delinquent groups.

It is suggested that further elimination of cards be based on variables recommended for future research in Chapter VI.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Summary

As indicated in the review of the literature, there are numerous studies which support the postulate that the Hand Test does adequately identify basic personality characteristics and that it also successfully discriminates aggressive and non-aggressive subjects. The Hand Test also tends to differentiate subjects who possess extremes of pathology, which may or may not be evident in overt behavior.

The primary reason for this study was not to further substantiate previously existing conclusions but to investigate the effects of additional independent variables. The researcher was concerned with the variables of age and sex discrimination of the hand drawings and their effects on the perception of human activity. Due to the nature of the original Wagner Hand Test cards the investigation of these variables was not possible because of the extreme ambiguity of age and gender apparent in the stimulus cards.

The researcher, in developing the Modified Hand Test, attempted to modify Wagner's Hand Test using drawings of female, male, and children's hands which are otherwise comparable to Wagner's nine original hand drawings in line

composition, gesture, and size. The resulting 86 stimulus cards were further researched, resulting in the final 30 card Modified Hand Test. With this modified instrument the researcher was equipped to investigate the previously stated postulate that perception of age and gender will influence the content of the projected response. Although the researcher introduced an instructional variable administration, scoring and qualitative considerations were based on Wagner's principles.

In this study a total of 120 subjects were administered the Modified Hand Test and a comparative statistical analysis was completed. As the results indicated, the Modified Hand Test does differentiate delinquent from non-delinquent adolescents in the three sets of stimulus cards. From the complexity of data presented, some generalizations and inferences can be drawn.

One of the primary interests of the researcher was in the role that social standards and values play in shaping the personality of the individual and the effects of varying degrees of social interaction. Society is in the last analysis an abstraction, a generalization constructed by the social scientist on the basis of data gained by observation of interacting individuals. The behavioral data reveal a consistent pattern of behavior and may be cited as culturally determined or due to physiologically universal characteristics, whereas the differences may be attributed to psychological dynamics. In making this distinction, it becomes possible to

see the effects of, and make statements as to how individual behavior will differ in various settings.

Data in this particular research reveal such a separation of cultural and psychological factors. There is a great body of literature devoted to describing the character of our culture. Although this country is not homogeneous in all respects, there is a significant cultural overlay which affects everyone. All people in American culture must respond in terms of male dominance. That they all must express themselves in male symbols does not explain or account for individual difference of expression as recorded in the data.

All Americans, regardless of ethnic identity, pass through institutions which are normalized throughout the nation. They all relate in some fashion with the legal and social structures. Everyone adapts to the economic necessities of living in a society based on the principles of free enterprise and capitalism. There is a theme of male dominance running through the most significantly influential institutions. Authority and control are associated with masculine dominance in the society and most conventional reward systems are expressed with greater emphasis on the male role. Thus the primary institutions involved in determining individual behavior have the general characteristic of stressing and perpetuating male influence.

An emphasis on virility as a positive value in the test responses is a logical and predictable occurrence in a social milieu that is structurally dependent on control by men. More cards were perceived as male than were perceived as female and child, and more significant differences were observed in the male set than in any other set. Most logically, this can be attributed to the inherent differences in social and cultural experiences of the delinquent and non-delinquent subjects. The preference for male responses can most logically be attributed to the inherent qualities of the social and cultural experiences of the subjects.

Findings and Conclusions

Evidence has been provided which indicates that the Modified Hand Test could, with further research and the elimination of nondiscriminatory cards, prove to be a very useful diagnostic tool. It appraises maturity, flexibility, integration, and sensitivity of the total personality through the process of projection. Administration is simple and brief, and the stimulus cards are essentially non-threatening. Many behavioral tendencies projected onto the hand cards possess the potential to be externalized as overt behaviors. Environmental influence plays a major role in determining the nature and extent to which existing tendencies will be externalized. In this study the Modified Hand Test successfully differentiated bright delinquent from bright non-delinquent adolescents at statistically significant levels.

The Acting Out Ratio (A.O.R.) appeared to be effective in measuring differences between the frequency of responses of delinquent and non-delinquent adolescents in this study. This ratio is an approximation of the probability of overt, hostile, anti-social behavior. It is computed by placing the total number of AFF + DEP + COM responses opposite the total number of DIR + AGG responses. In addition to the categories included in the A.O.R., the ACT and EXH scoring categories appeared to be particularly suited to showing differentiation in the attitudes of delinquent and non-delinquent bright adolescents toward themselves and their environment. Furthermore, the FAIL and BIZ variables, though eliciting a very limited number of responses, clearly pointed out differences between the two groups.

The Modified Hand Test's capacity to uncover dynamic content material makes it an asset to the psychotherapist in eliciting new information to facilitate better understanding of the patient. It may be used to gain an overview of the patient's problems and characteristics to be used in planning a treatment program. In the treatment of non-communicative patients the test may serve as a means of initiating conversation and identifying conflicts and defenses. The individual stimulus cards may serve as a point of departure for free associations. The Modified Hand Test could theoretically be of considerable value in discriminating between over-achievers and under-achievers. High achievers can be expected to show

greater need for achievement, more aggression, and less dependency need.

It is possible to establish concurrent and construct validity for the Modified Hand Test as a result of this research. Concurrent validity is evaluated by demonstrating how well the test scores correspond to criterion measures. The test and criterion data are collected at essentially the same point in time. Correspondence in this case can be demonstrated by the finding of significant differences between identified bright delinquent adolescents and their non-delinquent counterparts. Construct validity investigates the psychological qualities the test measures by demonstrating that certain explanatory constructs account to some degree for performance on the test. Essentially, construct validity evaluates the underlying theories of the test. To establish construct validity, the researcher first must logically determine what predictions can be made regarding the nature of variation of scores from person to person. It was hypothesized that the hand drawings would stimulate fantasy and promote individual responses which reflected the individual's idiosyncratic ways of perceiving the world. Following this, empirical data were gathered and the hypotheses were confirmed.

The traditional reliability methods developed for more conventional psychometric tests, such as measures of achievement or intellective function, cannot be applied to projective techniques like the Modified Hand Test which are

based upon entirely different principles. The split-half reliability method is not suited, because unlike some test items, the hand cards were drawn to yield psychologically different, not equivalent data. In regard to the re-test method, the clinician is not concerned with whether the subject, over a period of time, relates the same perceptions. Moreover, if re-testing is done after a considerable time interval, the psychological state of the subject is likely to have changed. Moods, feelings, problems, and preoccupations, are obviously subject to much greater fluctuations than knowledge or special abilities.

Recommendations for Further Study

In view of the findings and conclusions reported in this research study, it is concluded much additional research is necessary. The importance of selecting a great diversity of representative groups to serve in establishing norms for the test cannot be overstated. Normative data must be established before this test can be widely used in clinical settings. The researcher further suggests the possibility of shortening the test by elimination of some of the less discriminatory cards.

The independent variables which could be considered in future research are age, race, socio-economic status, family size, and parental marital status. Another area for consideration would be a comparative study of individuals

sharing common backgrounds in various stages of cultural assimilation. An inner family study comparing responses of parents to their children would be extremely useful for clinical interpretation.

Further research should be conducted to determine if difficulties in sexual identification correlate with difficulty in perception of gender on the stimulus cards, and the degree to which this factor may be cited as contributing to emotional illness and behavior disorders should be explored. A well controlled, carefully designed research project should be conducted to determine the effect of perception of gender upon attitudes toward and perfornance while in school, and the effect upon retention of students in school.

Of great interest would be the comparison of responses of lower socio-economic blacks and whites and higher socio-economic blacks and whites. Results of such a study could contribute to a better understanding of the influence of socio-economic differences in both black and white subjects.

A final and perhaps most important area of further research is in the development of a more adequate means of interpreting and evaluating both individual responses and overall performance. It has been previously stated that Wagner's scoring categories are ambiguous and contradictory, and a means of assessing response quality also should be devised.

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APPENDIX A

PILOT STUDY AND MODIFIED HAND TEST ILLUSTRATIONS

Table 10

Rank Order of the Fifty Hand Cards in Order of Increasing Sex Discriminability

Hand Card Number	Proportion of the Ss Seeing a Male Hand	Proportion of the Ss Seeing a Female Hand	Chi Square	P
21	.49	.51	.024	>.90
36	.54	.46	.44	<.50
41	.46	.54	.44	<.50
30	.55	.45	.44	<.50
28	.56	.44	1.00	>.30
37	.57	.43	1.23	<.30
4	.42	.58	1.24	<.30
39	.41	.59	2.11	<.20
17	.59	.41		
14	.60	.40	3.16	<.10
47	.61	.39	3.24	<.10
8	.60	.40	3.16	<.10
18	.36	.64	5.51	<.02
26	.65	.35	6.12	<.02
29	.35	.65	6.61	<.01
25	.65	.35	6.61	<.01
33	.65	.35	7.11	<.01
50	.68	.32	8.68	<.01
19	.67	.33	8.55	<.01
2	.33	.67	9.68	<.01
27	.68	.32	9.11	<.01
11	.32	.68	9.11	<.01
12	.71	.29	12.96	<.001
20	.71	.29	13.61	<.001
49	.76	.24	19.01	<.001
16	.76	.24	19.01	<.001
10	.78	.22	23.90	<.001
34	.79	.21	27.13	<.001
3	.70	.30	26.12	<.001
6	.80	.20	28.44	<.001
23	.17	.83	33.38	<.001
43	.83	.17	33.38	<.001
35	.83	.17	33.38	<.001
38	.84	.16	36.00	<.001
32	.16	.84	36.00	<.001
42	.85	.15	38.71	<.001
1	.85	.15	38.71	<.001
5	.86	.14	41.52	<.001
7	.13	.87	44.44	<.001
48	.89	.11	48.65	<.001
40	.10	.90	50.57	<.001
22	.09	.91	52.81	<.001
15	.09	.91	52.81	<.001
9	.93	.07	60.49	<.001
45	.07	.93	60.49	<.001
44	.94	.06	60.49	<.001
13	.07	.93	60.49	<.001
24	.01	.99	75.11	<.001
31	.01	.99	75.11	<.001
46	.00	1.00	78.01	<.001

TABLE 11

Arrangement of Sexually Ambiguous Hands According to Age Discriminability

Hand Card Number	Proportion of Ss Seeing CHILD	Proportion of Ss Seeing ADULT	Chi Square	P
NEITHER CHILD OR ADULT:				
4	.49	.51	0	
21	.41	.59	1.82	<.20
37	.60	.40	3.16	<.10
SEEN AS ADULT HANDS:				
41	.35	.65	7.11	<.01
30	.21	.79	25.31	<.001
SEEN AS CHILDREN'S HANDS:				
28	.65	.35	6.61	<.01
14	.78	.22	23.11	>.001
36	.90	.10	50.57	>.001
39	.96	.04	70.31	>.001
8	.94	.06	60.49	>.001
17	.97	.03	69.32	>.001
47	.98	.02	73.11	>.001

Note: The numbers of sexually ambiguous hands placed in either the "child", "adult", or "age-ambiguous" category were 7, 2, and 3 respectively; these differences were not statistically significant, $(df=2) = 3,50$, p .20. In conclusion, a card that is identified as ambiguous with respect to sex, is just as likely to be seen as a child's hand, as an adult's hand, or as an age-ambiguous hand.

TABLE 12

Arrangement of Male Hands in Terms of Their Age Discriminability

Hand Number	Proportion of Ss Seeing CHILD	Proportion of Ss Seeing ADULT	Chi Square	P
NEITHER CHILD OR ADULT:				
12	.43	.57	1.26	<.30
20	.56	.44	1.01	>.30
6	.58	.42	1.78	<.20
42	.40	.60	3.16	<.10
48	.52	.48	.05	<.80
38	.41	.59	2.41	>.10
SEEN AS ADULT HANDS:				
5	.37	.65	4.93	<.05
9	.13	.87	41.65	<.001
10	.28	.72	14.27	<.001
16	.31	.69	11.11	<.001
44	.09	.91	53.78	<.001
43	.20	.80	28.44	<.001
35	.04	.96	67.60	<.001
SEEN AS CHILDREN'S HANDS:				
27	.93	.07	56.11	<.001
26	.94	.06	58.53	<.001
25	.90	.10	49.61	<.001
19	.89	.11	45.57	<.001
3	.90	.10	49.61	<.001
1	.85	.15	38.71	<.001
49	.80	.20	26.78	<.001
34	.71	.29	12.32	<.001

Note: The numbers of male hands placed in either the "child," "adult," or "age ambiguous" category were 8, 7, and 6; these differences were not statistically significant, (df=2) = 28, P .90. In conclusion, a card that is identified as a male card is as likely to be seen as a child's hand as it is to be seen as an adult's hand or as an age-ambiguous hand.

TABLE 13

Arrangement of Female Hands in Terms of Their Age Discriminability

Hand Number	Proportion of Ss Seeing CHILD	Proportion of Ss Seeing ADULT	Chi Square	P
NEITHER CHILD OR ADULT:				
11	.60	.40	2.81	<.10
2	.43	.57	1.23	<.30
SEEN AS ADULT HANDS:				
7	.32	.68	9.68	<.01
15	.12	.88	44.44	<.001
13	.17	.83	33.38	<.001
22	.15	.85	37.81	<.001
24	.07	.93	57.08	<.001
29	.33	.67	9.11	<.01
31	.31	.69	12.01	<.001
40	.20	.80	28.44	<.001
32	.09	.91	53.77	<.001
45	.04	.96	66.60	<.001
23	.07	.93	57.08	<.001
46	.09	.91	52.81	<.001
SEEN AS CHILDREN'S HANDS:				
18	.71	.29	13.61	<.001
33	.67	.33	8.35	<.01

Note: The numbers of female hands placed in either the "child," "adult," or "age ambiguous" category were 2, 12, and 2 respectively; these differences were statistically significant, (df=2) = 12.50, P .01. In conclusion, a card that is identified as a female hand is most likely to be seen as an Adult hand also.

Differences in Sex-Age Identification between Males and Females

There were 81 college subjects who responded to the 50 original drawings (one blank); among these 55 were females and 26 were males. To determine whether males and females differed in the average number of cards identified as male-adult, male-child, female-adult, and female-child hands, four separate independent sample t-tests (all meeting the homogeneity of variance assumption, F max) were calculated.

Male-Adult Identification. The average number of drawings identified as male-adult hands for males and females were 13.00 and 11.40 respectively, $t(df=79)=1.44$, $p<.10$. Thus, males and females did not differ in their tendency to see male-adult drawings.

Male-Child Identification. The average number of drawings identified as male-child hands for males and females were 13.57 and 14.47 respectively, $t(df=79)=.70$, $p<.10$. Thus males and females did not differ in their tendency to see male-child drawings.

Female-Adult Identification. The average number of drawings identified as female-adult hands for males and females were 14.70 and 13.00 respectively, $t(df=79)=1.75$, $p<.05$). Thus, males tended to see significantly more hands as female-adult hands than did females. This finding may have relevance in interpreting the dynamic significance of responses made to

female-adult hands when administered to male subjects who tend to "see adult-feminine qualities" in hands to a greater extent than do females.

Female-Child Identification. The average number of drawings identified as female-child hands for males and females were 8.15 and 10.62 respectively, $t(df=79)=1.95$, $p < .05$. Thus, females tended to see significantly more hands as female-child hands than did males. This finding may be useful in understanding the psychodynamics of females (or males) to child hands since males will tend to see fewer "female qualities" than females.

Hand Selection Procedure

1. Male Hand Drawings (N = 10) H = 5, 9, 10, 12, 16, 35, 38, 42, 43, 44 (See Table 12)

The following seven hand drawings were selected by a significant majority of the raters as being predominantly adult male hands: (5, 9, 10, 16, 35, 43, 44)

Hand drawings 38 and 42 were selected because they showed a statistical trend toward being perceived as predominantly male adult hands. (38, 42)

From the remaining cards selected as male hand drawing cards, H-12 was selected because it was seen as significantly more male than female and as proportionately more adult than child.

2. Female Hand Drawings (N = 10) H = 13, 15, 22, 23, 24, 31, 32, 40, 45, 46 (See Table 4)

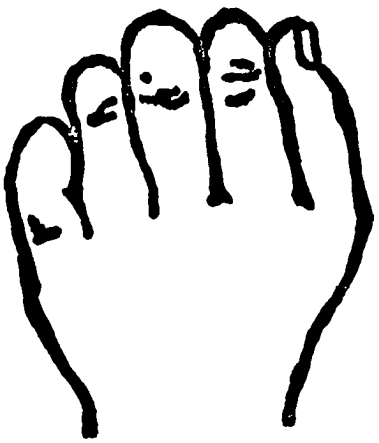
From the twelve cards seen significantly as being both adult and female hands, the ten most discriminating cards were selected.

3. Children's Hand Drawings (N = 10) H = 14, 17, 18, 28, 33, 34, 36, 39, 47, 49 (See Tables 2, 3, and 4)

Seven sexually ambiguous hands were seen as children's hands by a significant majority of the 81 raters (See Table 11). Of these seven only six, 14, 17, 28, 36, 39, 47, were retained

since it was discovered that accidently H-8 and H-17 were the same drawing. The proportion of raters seeing card 8 as a child's hand was .94 while the proportion of raters seeing card 17 as a child's hand drawing was .97; both had Chi Square significances at the .001 level. This evidence lends credibility to the reliability of the raters on age discriminability.

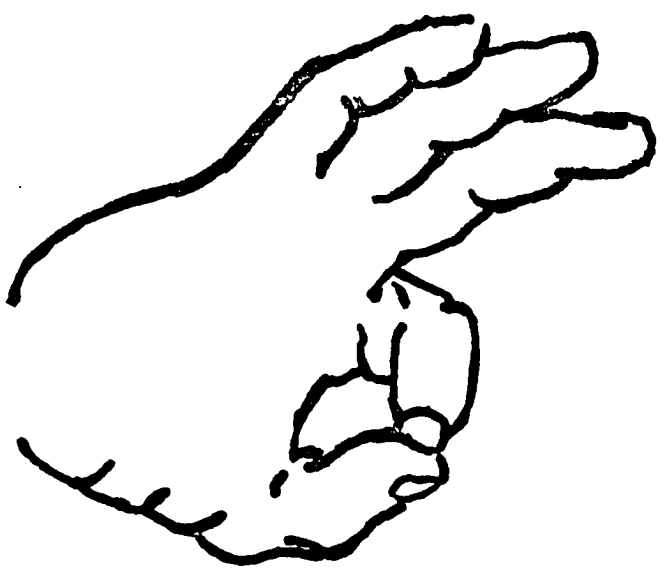
Four cards were selected from the remaining hand drawings which were perceived as being male child and female child. The resulting two male and two female cards were matched primarily for similarity of proportions on the child/adult dimension. (18, 33, 34, 49)



H-5
Male Set



H-9
Male Set



H-10
Male Set



H-12
Male Set



H-16
Male Set



H-35
Male Set



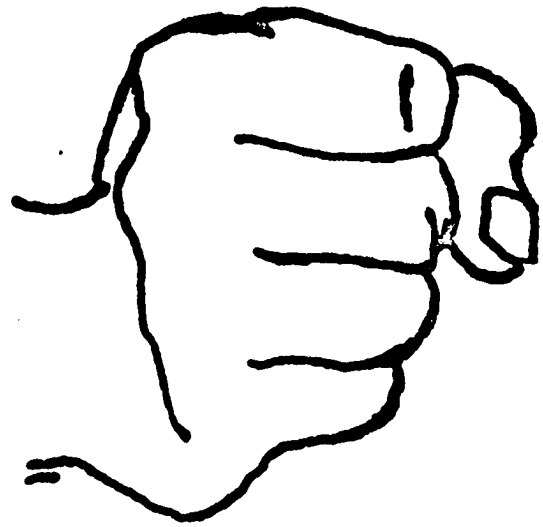
H-38
Male Set



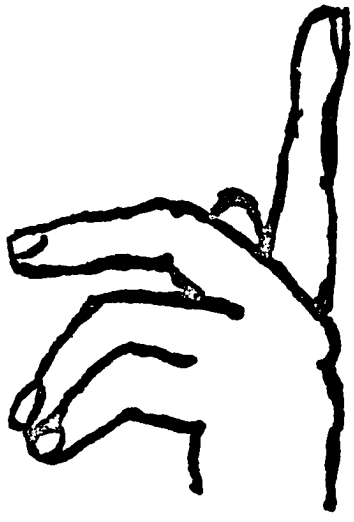
H-42
Male Set



H-43
Male Set



H-44
Male Set



H-13
Female Set



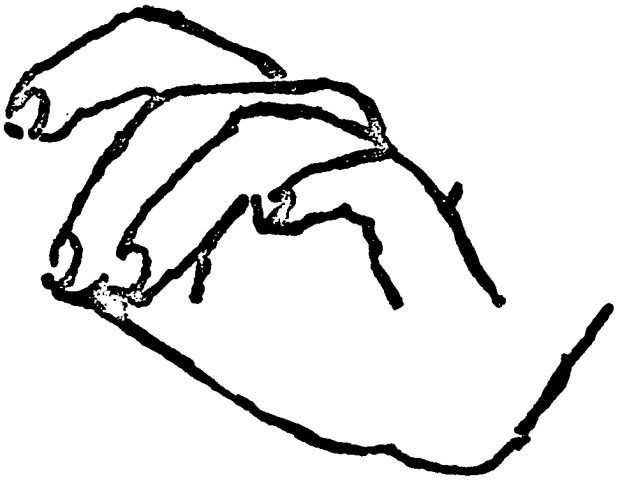
H-15
Female Set



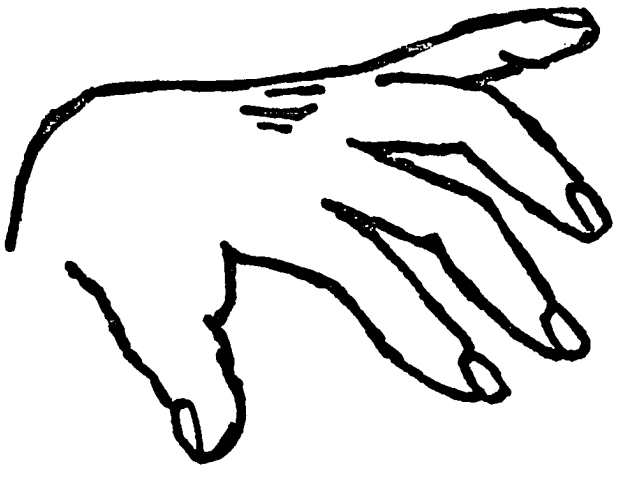
H-22
Female Set



H-23
Female Set



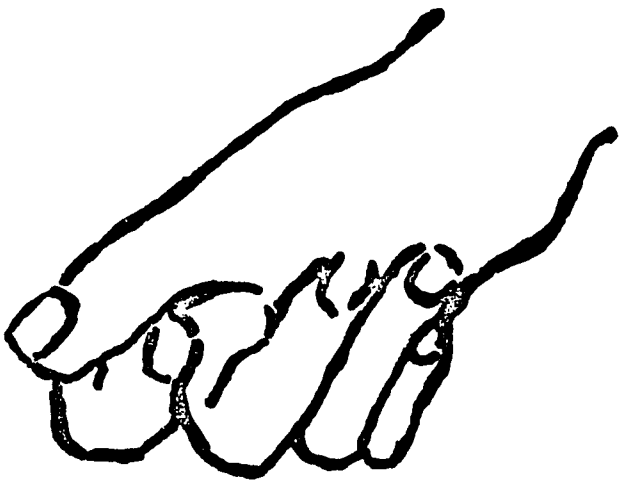
H-24
Female Set



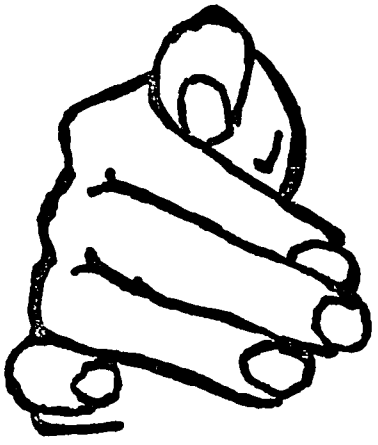
H-31
Female Set



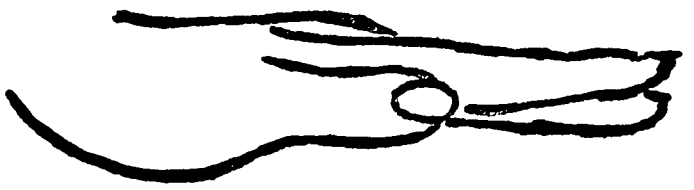
H-32
Female Set



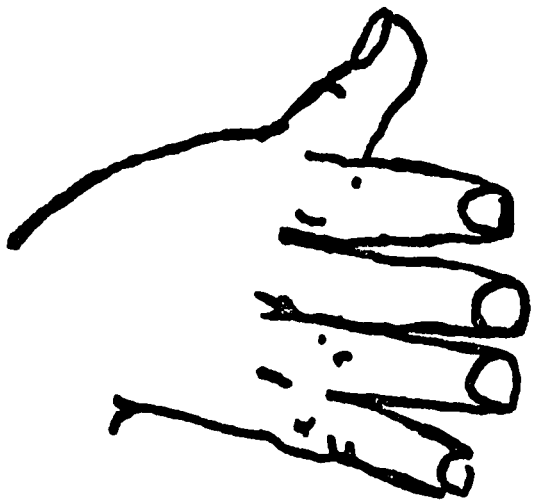
H-40
Female Set



H-45
Female Set



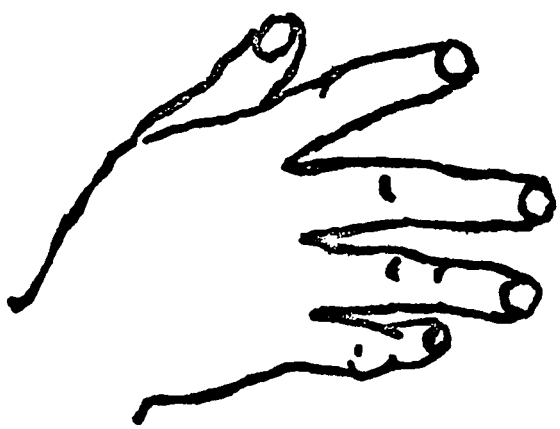
H-46
Female Set



H-14
Child Set



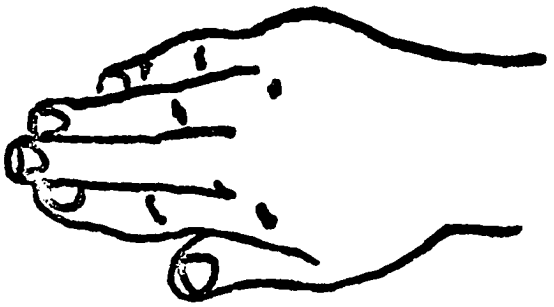
H-17
Child Set



H-18
Child Set



H-28
Child Set



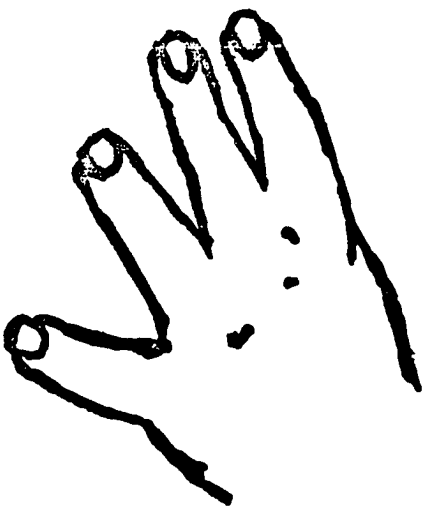
H-33
Child Set



H-34
Child Set



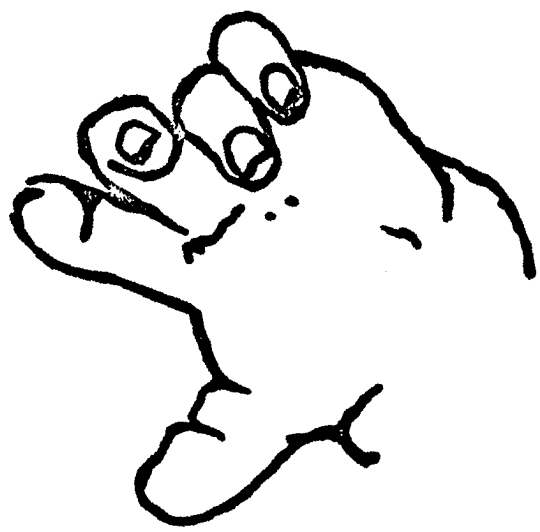
H-36
Child Set



H-39
Child Set



H-47
Child Set



H-49
Child Set

APPENDIX B

INTERPRETIVE DATA

TABLE 14

DESCRIPTIVE INFORMATION FOR NON-DELINQUENT SUBJECTS

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable (N = Novel) (C = Conventional)
S_1	M	13-9	119	3	2	M	C
S_2	F	13-9	122	4	2	L	N
S_3	M	13-11	120	3	2	M	N
S_4	F	16-2	120	2	1	M	C
S_5	M	12-7	116	5	1	L	C
S_6	F	15-7	118	4	2	M	N
S_7	M	13-4	114	3	2	M	N
S_8	F	15-4	118	3	2	M	C
S_9	M	13-2	115	2	2	M	C
S_{10}	F	13-1	112	5	5	L	N
S_{11}	M	15-2	116	2	2	U	N
S_{12}	F	12-8	115	3	1	M	C

TABLE 14 -Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable (N = Novel) (C = Conventional)
S_{13}	M	14-0	120	4	3	M	C
S_{14}	F	17-9	120	3	3	U	N
S_{15}	M	14-1	111	5	1	M	N
S_{16}	F	17-1	111	3	2	U	C
S_{17}	M	15-2	110	5	4	M	C
S_{18}	F	16-5	120	4	4	L	N
S_{19}	M	16-3	115	2	1	M	N
S_{20}	F	18-4	120	2	2	M	C
S_{21}	M	15-0	117	2	1	M	C
S_{22}	F	16-1	113	3	1	M	N
S_{23}	M	12-5	122	5	2	M	N
S_{24}	F	12-7	123	6	4	M	C
S_{25}	M	13-10	122	3	1	M	C
S_{26}	F	14-2	121	3	1	M	N

TABLE 14 -Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable (N = Novel) (C = Conventional)
S_{27}	M	14-4	112	2	2	L	N
S_{28}	F	14-3	110	3	2	M	C
S_{29}	M	14-4	114	7	4	L	C
S_{30}	F	18-1	118	2	2	M	N
S_{31}	M	18-2	111	5	4	M	N
S_{32}	F	17-4	112	9	7	L	C
S_{33}	M	14-3	122	3	2	L	C
S_{34}	F	17-0	117	9	8	L	N
S_{35}	M	12-1	113	2	2	M	N
S_{36}	F	16-3	118	2	2	M	C
S_{37}	M	17-10	115	2	2	U	C
S_{38}	F	17-10	121	3	3	L	N
S_{39}	M	17-11	121	2	2	M	N
S_{40}	F	17-3	120	1	1	U	C

TABLE 14-Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable (N = Novel) (C = Conventional)
S_{41}	M	17-4	110	4	2	M	C
S_{42}	F	18-0	124	3	2	M	N
S_{43}	M	16-6	115	4	4	M	N
S_{44}	F	12-4	120	3	3	L	C
S_{45}	M	17-0	119	6	1	M	C
S_{46}	F	13-1	125	4	2	M	N
S_{47}	M	15-0	113	1	1	U	N
S_{48}	F	13-4	124	4	3	M	C
S_{49}	M	12-5	119	3	3	M	C
S_{50}	F	17-4	116	6	1	M	N
S_{51}	M	13-5	111	3	2	M	N
S_{52}	F	12-6	112	5	4	L	C
S_{53}	M	12-6	117	2	1	M	C
S_{54}	F	12-9	125	4	4	U	N

TABLE 14 -Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable
S_{55}	M	16-2	121	3	1	U	N
S_{56}	F	12-8	125	3	1	U	C
S_{57}	M	12-5	121	5	3	U	C
S_{58}	F	12-9	123	8	5	L	N
S_{59}	M	15-0	117	3	1	M	N
S_{60}	F	17-11	123	3	3	U	C

TABLE 15

DESCRIPTIVE INFORMATION FOR DELINQUENT SUBJECTS

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable
S_{61}	M	13-2	117	3	2	M	C
S_{62}	F	13-0	119	4	2	L	N
S_{63}	M	13-5	124	3	2	M	N
S_{64}	F	16-9	110	2	1	M	C
S_{65}	M	13-1	120	4	1	L	C
S_{66}	F	16-2	117	4	2	M	N
S_{67}	M	13-6	116	3	2	M	N
S_{68}	F	15-11	113	3	2	M	C
S_{69}	M	13-10	122	2	2	M	C
S_{70}	F	13-0	112	5	3	L	N
S_{71}	M	15-10	119	2	2	U	N
S_{72}	F	12-6	112	3	1	M	C
S_{73}	M	14-8	110	3	2	M	C

TABLE 15-Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable
S_{74}	F	18-0	123	4	3	U	N
S_{75}	M	14-8	112	5	2	M	N
S_{76}	F	1-68	122	3	2	U	C
S_{77}	M	15-6	123	5	3	M	C
S_{78}	F	16-4	117	4	4	L	N
S_{79}	M	16-10	118	2	1	M	N
S_{80}	F	18-11	116	3	2	M	C
S_{81}	M	15-8	119	2	1	M	C
S_{82}	F	16-7	118	3	1	M	N
S_{83}	M	12-3	120	4	2	M	N
S_{84}	F	13-6	114	5	4	M	C
S_{85}	M	13-4	111	3	1	M	C
S_{86}	F	14-6	112	3	2	M	N
S_{87}	M	14-11	115	2	2	L	N
S_{88}	F	14-9	116	4	3	M	C
S_{89}	M	14-3	117	6	4	L	C

TABLE 15-Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable
S_{90}	F	18-4	119	2	2	M	N
S_{91}	M	19-0	115	6	5	M	N
S_{92}	F	16-8	114	8	6	L	C
S_{93}	M	14-6	116	3	2	L	C
S_{94}	F	17-5	113	8	6	L	N
S_{95}	M	18-9	118	2	2	M	N
S_{96}	F	16-3	115	2	2	M	C
S_{97}	M	17-1	113	2	2	U	C
S_{98}	F	17-1	117	3	3	L	N
S_{99}	M	17-4	122	2	2	M	N
S_{100}	F	17-7	115	1	1	U	C
S_{101}	M	17-8	112	5	2	M	C
S_{102}	F	18-6	119	3	2	M	N
S_{103}	M	16-7	122	4	4	M	N
S_{104}	F	12-5	120	3	3	L	C
S_{105}	M	17-6	126	6	1	M	C

TABLE 15-Continued

Subject	Sex	C.A.	I.Q.	Number of Children in Family	Ordinal Position of Subject	Socio-Economic Status	Instructional Variable
S_{106}	F	13-9	119	3	2	M	N
S_{107}	M	15-7	112	1	1	U	N
S_{108}	F	13-8	116	4	2	M	C
S_{109}	M	12-8	110	3	3	M	C
S_{110}	F	17-10	117	5	1	M	N
S_{111}	M	13-2	118	4	2	M	N
S_{112}	F	13-1	122	6	4	L	C
S_{113}	M	12-4	116	2	1	M	C
S_{114}	F	12-5	113	3	3	U	N
S_{115}	M	16-9	123	3	1	U	N
S_{116}	F	11-10	117	3	1	U	C
S_{117}	M	12-4	120	5	3	U	C
S_{118}	F	12-3	115	8	4	L	N
S_{119}	M	15-4	121	3	1	M	N
S_{120}	F	17-2	114	3	3	U	C

TABLE 16

ITEM ANALYSIS OF RESPONSES FOR NON-DELINQUENT SUBJECTS ON THE MODIFIED HAND TEST

	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	Σ M	Σ F	Σ C
S_1																						
M	1	0	1	0	2	1		0	2	1		1	0	0		1	0	0		9	0	1
F	0	0	1	1	1	0		1	4	1		1	0	0		0	0	0		0	10	0
C	0	1	2	0	0	0		1	3	1		1	1	0		0	0	0		2	1	7
Total	1	1	4	1	3	1	11	2	9	3	14	3	1	0	4	1	0	0	1	11	11	8
S_2																						
M	0	0	0	0	3	2		1	1	1		2	0	0		0	0	0		9	1	0
F	0	0	1	0	2	0		2	4	1		0	0	0		0	0	0		1	9	0
C	1	0	2	1	0	0		1	5	0		0	0	0		0	0	0		4	0	6
Total	1	0	3	1	5	2	12	4	10	2	16	2	0	0	2	0	0	0	0	14	10	6
S_3																						
M	0	0	0	0	2	2		4	0	1		0	0	0		1	0	0		6	0	4
F	0	0	0	0	1	1		1	2	3		0	1	0		0	0	0		1	9	0
C	0	0	1	0	0	1		0	6	1		0	0	0		1	0	0		4	0	6
Total	0	0	1	0	3	4	8	5	8	5	18	0	1	0	1	2	0	0	2	11	9	10

Continued

	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	Σ M	Σ F	Σ C
S_4																						
M	0	0	1	1	2	2		0	1	1		2	0	0		0	0	0		9	0	1
F	0	0	1	1	1	0		1	3	2		1	0	0		0	0	0		2	8	0
C	1	1	0	0	0	1		4	1	0		1	0	1		0	0	0		3	0	7
Total	1	1	2	2	3	3	12	5	5	3	13	4	0	1	5	0	0	0	0	14	8	8
S_5																						
M	0	0	1	0	2	1		0	3	3		0	0	0		0	0	0		9	1	0
F	0	0	1	1	1	0		0	6	1		0	0	0		0	0	0		5	5	0
C	0	0	3	0	0	0		3	4	0		0	0	0		0	0	0		4	1	5
Total	0	0	5	1	3	1	10	3	13	4	20	0	0	0	0	0	0	0	0	18	7	5
S_6																						
M	1	0	5	0	0	2		0	1	0		1	0	0		0	0	0		10	0	0
F	2	0	4	0	0	0		1	3	0		0	0	0		0	0	0		1	9	0
C	2	1	1	1	0	0		3	1	1		0	0	0		0	0	0		4	0	6
Total	5	1	10	1	0	2	19	4	5	1	10	1	0	0	1	0	0	0	0	15	9	6
S_7																						
M	1	0	2	0	1	1		0	2	1		2	0	0		0	0	0		7	2	1
F	0	0	1	0	0	1		1	3	0		4	0	0		0	0	0		2	8	0
C	0	0	4	0	2	0		0	2	0		1	0	0		1	0	0		0	3	7
Total	1	0	7	0	3	2	13	1	7	1	9	7	0	0	7	1	0	0	1	9	13	8

Continued

	AFF	DEP	COM	EXH	DIR	AGG	∑INT	ACQ	ACT	PAS	∑ENV	TEN	CRIP	FEAR	∑MAL	DES	FAIL	BIZ	∑WITH	∑M	∑F	∑C
S_8																						
M	2	0	2	1	1	0		1	0	0		2	0	0		0	1	0		8	2	0
F	0	0	1	2	1	0		0	3	1		2	0	0		0	0	0		1	9	0
C	0	1	1	2	1	0		1	0	3		1	0	0		0	0	0		4	0	6
Total	2	1	4	5	3	0	15	2	3	4	9	5	0	0	5	0	1	0	1	13	11	6
S_9																						
M	0	0	1	0	0	4		0	2	1		0	1	0		1	0	0		8	0	2
F	0	0	0	1	1	0		0	2	2		0	1	0		0	0	0		1	9	0
C	0	0	0	0	0	1		0	2	2		0	2	0		3	0	0		3	1	6
Total	0	0	1	1	1	5	8	0	6	5	11	0	4	0	4	4	0	0	4	12	10	8
S_{10}																						
M	0	0	0	1	3	2		0	1	0		2	1	0		0	0	0		8	2	0
F	0	0	0	1	1	0		1	4	2		0	1	0		0	0	0		0	8	2
C	1	0	1	0	0	1		0	2	0		1	3	0		1	0	0		2	4	4
Total	1	0	1	2	4	3	11	1	7	2	10	3	5	0	8	1	0	0	1	10	14	6
S_{11}																						
M	0	0	3	0	3	3		0	1	0		0	0	0		0	0	0		8	1	1
F	0	0	1	0	2	0		1	5	0		1	0	0		0	0	0		0	10	0
C	2	3	0	0	0	1		1	2	0		1	0	0		0	0	0		1	1	8
Total	2	3	4	0	5	4	18	2	8	0	10	2	0	0	2	0	0	0	0	9	12	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{12}																						
M	0	0	2	0	1	1		0	1	3		1	1	0		0	0	0		8	1	1
F	2	0	1	2	0	0		0	3	1		0	1	0		0	0	0		0	10	0
C	2	0	3	0	0	1		1	2	1		0	0	0		0	0	0		2	0	8
Total	4	0	6	2	1	2	15	1	6	5	12	1	2	0	3	0	0	0	0	10	11	9
S_{13}																						
M	2	0	3	0	2	1		0	0	0		1	0	0		1	0	0		7	0	3
F	1	0	2	2	1	1		0	1	0		2	0	0		0	0	0		1	9	0
C	0	0	3	0	0	1		1	1	1		1	1	0		0	1	0		3	1	6
Total	3	0	8	2	3	3	19	1	2	1	4	4	1	0	5	1	1	0	2	11	10	9
S_{14}																						
M	0	0	2	1	4	0		0	2	0		1	0	0		0	0	0		9	1	0
F	0	0	0	2	2	0		1	2	1		1	0	0		0	0	0		0	10	0
C	3	0	0	1	4	0		1	1	0		0	0	0		0	0	0		4	1	5
Total	3	0	2	4	10	0	19	2	5	1	8	2	0	0	2	0	0	0	0	13	12	5
S_{15}																						
M	0	0	3	1	1	2		0	1	1		0	0	0		1	0	0		8	0	2
F	0	0	2	1	0	0		2	2	2		1	0	0		0	0	0		1	9	0
C	1	0	3	0	1	0		0	2	1		2	0	0		0	0	0		3	0	7
Total	1	0	8	2	2	2	15	2	5	4	11	3	0	0	3	1	0	0	1	12	9	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	Σ M	Σ F	Σ C
S_{16}																						
M	1	0	3	0	1	1		0	1	0		1	0	0		1	0	1		10	0	0
F	0	1	1	3	0	0		4	0	0		1	0	0		0	0	0		2	8	0
C	1	0	1	0	0	0		3	3	1		0	0	0		0	0	1		3	0	7
Total	2	1	5	3	1	1	13	7	4	1	12	2	0	0	2	1	0	2	3	15	8	7
S_{17}																						
M	0	0	0	0	0	1		1	1	3		2	0	0		2	0	0		7	1	2
F	0	0	0	1	0	0		0	2	5		0	0	0		0	0	0		0	10	0
C	4	0	0	0	0	1		2	0	1		0	1	0		1	0	0		3	0	7
Total	4	0	0	1	0	2	7	3	3	9	15	2	1	0	3	3	0	0	3	10	11	9
S_{18}	0	0	1	0	3	2		0	3	0		1	0	0		0	0	0		7	1	2
M	0	0	1	0	3	2		0	3	0		1	0	0		0	0	0		7	1	2
F	0	0	1	0	0	3		1	5	0		0	0	0		0	0	0		0	10	0
C	2	0	1	1	0	0		0	3	1		2	0	0		0	0	0		2	0	8
Total	2	0	3	1	3	5	14	1	11	1	13	3	0	0	3	0	0	0	0	9	11	10
S_{19}																						
M	1	0	1	0	1	1		0	4	1		1	0	0		0	0	0		10	0	0
F	0	0	1	0	1	0		1	6	0		1	0	0		0	0	0		10	0	0
C	2	0	3	0	0	0		1	3	1		0	0	0		0	0	0		3	0	7
Total	3	0	5	0	2	1	11	2	13	2	17	2	0	0	2	0	0	0	0	23	0	7

Continued

	AFF	DEP	COM	EXH	DIR	AGG	∑INT	ACQ	ACT	PAS	∑ENV	TEN	CRIP	FEAR	∑MAL	DES	FAIL	BIZ	∑WITH	∑M	∑F	∑C
S_{20}																						
M	2	0	1	0	3	0		0	1	2		1	0	0		0	0	0		9	1	0
F	0	0	1	1	1	0		0	3	0		4	0	0		0	0	0		1	9	0
C	1	0	3	0	0	0		3	3	0		0	0	0		0	0	0		2	1	7
Total	3	0	5	1	4	0	13	3	7	2	12	5	0	0	5	0	0	0	0	12	11	7
S_{21}																						
M	0	0	3	0	0	1		1	3	0		2	0	0		0	0	0		8	1	1
F	0	0	0	0	1	1		0	5	0		2	0	0		0	0	0		2	8	0
C	0	0	3	0	0	2		1	3	0		1	0	0		0	0	0		0	0	10
Total	0	0	6	0	1	4	11	2	11	0	13	5	0	0	5	0	0	0	0	10	9	11
S_{22}																						
M	0	0	2	0	0	1		0	2	0		3	0	0		2	0	0		9	0	1
F	0	0	2	0	0	0		1	6	0		1	0	0		0	0	0		2	8	0
C	1	0	2	1	0	0		1	2	1		0	0	1		1	0	0		4	1	5
Total	1	0	6	1	0	1	9	2	10	1	13	4	0	1	5	3	0	0	3	15	9	6
S_{23}																						
M	0	0	0	0	1	2		0	3	1		2	0	0		1	0	0		6	2	2
F	0	0	3	0	1	2		2	2	0		0	0	0		0	0	0		1	8	1
C	3	0	1	0	0	1		1	2	0		2	0	0		0	0	0		2	0	8
Total	3	0	4	0	2	5	14	3	7	1	11	4	0	0	4	1	0	0	1	9	10	11

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{24}																						
M	0	0	1	0	1	2		0	1	0		0	0	0		5	0	0		8	1	1
F	1	0	0	0	3	1		0	4	0		0	0	0		0	0	0		1	7	2
C	0	0	0	0	0	1		0	6	0		0	1	0		2	0	0		1	0	9
Total	1	0	1	0	4	4	10	0	11	0	11	0	1	0	1	7	0	0	7	10	8	12
S_{25}																						
M	0	0	2	1	2	0		0	2	1		1	0	1		0	0	0		7	1	2
F	0	0	1	1	1	0		1	5	0		1	0	0		0	0	0		1	9	0
C	1	1	4	1	1	0		1	1	0		0	0	0		0	0	0		3	0	7
Total	1	1	7	3	4	0	16	2	8	1	11	2	0	1	3	0	0	0	0	11	10	9
S_{26}																						
M	0	0	3	0	2	2		0	2	0		1	0	0		0	0	0		9	0	1
F	0	0	1	0	3	0		1	5	0		0	0	0		0	0	0		3	7	0
C	0	0	3	1	0	0		1	4	1		0	0	0		0	0	0		5	0	5
Total	0	0	7	1	5	2	15	2	11	1	14	1	0	0	1	0	0	0	0	17	7	6
S_{27}																						
M	1	0	0	0	2	2		0	3	1		1	0	0		0	0	0		8	2	0
F	1	0	0	0	2	0		0	2	1		2	1	0		0	0	0		3	7	0
C	1	0	0	0	0	0		3	4	1		1	0	0		0	0	0		0	1	9
Total	3	0	0	0	4	2	9	3	9	3	15	4	1	0	5	0	0	0	0	11	10	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	Σ M	Σ F	Σ C
S_{28}																						
M	0	0	0	0	2	2		0	5	0		1	0	0		0	0	0		6	3	1
F	0	0	0	0	2	1		2	2	1		2	0	0		0	0	0		1	8	1
C	0	1	1	0	1	2		0	4	1		0	0	0		0	0	0		0	0	10
Total	0	1	1	0	5	5	12	2	11	2	15	3	0	0	3	0	0	0	0	7	11	12
S_{29}																						
M	0	0	0	0	1	1		1	2	1		2	0	0		2	0	0		7	1	2
F	0	0	1	0	1	0		1	4	1		0	1	0		0	0	0		2	8	0
C	1	0	1	0	0	0		0	3	2		3	0	0		0	0	0		1	1	8
Total	1	0	2	0	2	1	6	2	9	4	15	5	1	0	6	2	0	0	2	10	10	10
S_{30}																						
M	1	0	2	1	2	0		0	1	2		1	0	0		0	0	0		10	0	0
F	0	0	3	0	1	0		1	1	3		1	0	0		0	0	0		0	10	0
C	1	1	0	0	0	0		3	3	1		1	0	0		0	0	0		2	2	6
Total	2	1	5	1	3	0	12	4	5	6	15	3	0	0	3	0	0	0	0	12	12	6
S_{31}																						
M	0	0	1	0	1	2		0	3	2		1	0	0		0	0	0		8	1	1
F	0	0	0	1	2	3		0	2	2		0	0	0		0	0	0		4	6	0
C	3	0	3	0	0	2		1	0	1		0	0	0		0	0	0		2	0	8
Total	3	0	4	1	3	7	18	1	5	5	11	1	0	0	1	0	0	0	0	14	7	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{32}																						
M	0	0	3	0	0	1		1	3	0		0	0	0		2	0	0		8	0	2
F	1	0	1	1	0	0		0	5	2		0	0	0		0	0	0		2	8	0
C	1	0	3	0	0	0		0	2	0		2	1	0		1	0	0		2	0	8
Total	2	0	7	1	0	1	11	1	10	2	13	2	1	0	3	3	0	0	3	12	8	10
S_{33}																						
M	0	0	0	0	2	2		0	2	2		1	0	0		1	0	0		9	1	0
F	0	0	2	1	0	1		0	3	0		1	0	0		0	0	0		1	9	0
C	0	0	3	0	1	0		0	2	1		2	1	0		0	0	0		1	0	9
Total	0	0	5	1	3	3	12	0	7	3	10	4	1	0	5	1	0	0	1	11	10	9
S_{34}																						
M	1	1	3	0	2	1		0	1	0		1	0	0		0	0	0		8	1	1
F	0	0	1	1	1	0		1	5	1		0	0	0		0	0	0		2	7	1
C	3	1	0	0	1	0		2	2	0		0	0	0		0	0	1		3	0	7
Total	4	2	4	1	4	1	16	3	8	1	12	1	0	0	1	0	0	1	1	13	8	9
S_{35}																						
M	1	0	2	1	2	0		0	0	2		1	1	0		0	0	0		8	1	1
F	1	0	1	0	0	0		0	6	1		1	0	0		0	0	0		2	8	0
C	1	0	1	0	1	0		0	3	2		2	0	0		0	0	0		2	1	7
Total	3	0	4	1	3	0	11	0	9	5	14	4	1	0	5	0	0	0	0	12	10	8

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{36}																						
M	1	0	0	0	2	0		1	3	1		2	0	0		0	0	0		9	1	0
F	1	1	0	1	0	0		2	3	2		0	0	0		0	0	0		0	10	0
C	3	0	0	0	0	0		4	1	1		1	0	0		0	0	0		5	0	5
Total	5	1	0	1	2	0	9	7	7	4	18	3	0	0	3	0	0	0	0	14	11	5
S_{37}																						
M	0	0	0	0	3	1		0	3	0		3	0	0		0	0	0		9	0	1
F	1	0	0	0	2	0		0	4	2		1	0	0		0	0	0		3	7	0
C	1	0	2	0	0	0		5	1	0		1	0	0		0	0	0		3	0	7
Total	2	0	2	0	5	1	10	5	8	2	15	5	0	0	5	0	0	0	0	15	7	8
S_{38}																						
M	0	0	2	0	2	2		0	2	1		1	0	0		0	0	0		9	1	0
F	0	0	1	1	0	0		1	4	1		2	0	0		0	0	0		2	7	1
C	3	0	0	0	0	0		2	4	0		1	0	0		0	0	0		2	0	8
Total	3	0	3	1	2	2	11	3	10	2	15	4	0	0	4	0	0	0	0	13	8	9
S_{39}																						
M	0	0	2	1	0	2		0	3	0		0	0	0		2	0	0		8	0	2
F	0	0	0	0	1	0		2	2	4		1	0	0		0	0	0		3	7	0
C	2	0	1	1	0	1		1	2	1		1	0	0		0	0	0		2	0	8
Total	2	0	3	2	1	3	11	3	7	5	15	2	0	0	2	2	0	0	2	13	7	10

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{40}																						
M	0	0	3	1	1	0		0	1	3		1	0	0		0	0	0		7	1	2
F	0	0	1	3	0	0		1	2	2		1	0	0		0	0	0		2	8	0
C	2	0	3	2	0	0		0	1	0		2	0	0		0	0	0		1	1	8
Total	2	0	7	6	1	0	16	1	4	5	10	4	0	0	4	0	0	0	0	10	10	10
S_{41}																						
M	0	0	1	1	2	1		0	1	2		2	0	0		0	0	0		9	0	1
F	0	0	2	2	1	0		0	3	1		1	0	0		0	0	0		2	8	0
C	1	0	3	1	0	0		1	1	2		1	0	0		0	0	0		2	0	8
Total	1	0	6	4	3	1	15	1	5	5	11	4	0	0	4	0	0	0	0	13	8	9
S_{42}																						
M	0	0	2	1	3	2		0	1	0		1	0	0		0	0	0		7	1	2
F	0	0	1	1	1	0		0	5	0		2	0	0		0	0	0		1	8	1
C	1	1	0	0	1	0		0	5	0		2	0	0		0	0	0		0	1	9
Total	1	1	3	2	5	2	14	0	11	0	11	5	0	0	5	0	0	0	0	8	10	12
S_{43}																						
M	0	0	2	0	0	1		0	1	1		3	0	0		2	0	0		9	0	1
F	1	0	0	0	1	0		0	4	1		2	0	1		0	0	0		2	8	0
C	2	1	2	0	0	1		1	1	1		1	0	0		0	0	0		1	2	7
Total	3	1	4	0	1	2	11	1	6	3	10	6	0	1	7	2	0	0	2	12	10	8

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{44}																						
M	2	0	1	0	2	3		1	0	1		0	0	0		0	0	0		9	0	1
F	2	0	0	2	2	0		0	3	1		0	0	0		0	0	0		1	9	0
C	6	0	0	0	0	1		0	3	0		0	0	0		0	0	0		1	0	9
Total	10	0	1	2	4	4	21	1	6	2	9	0	0	0	0	0	0	0	0	11	9	10
S_{45}																						
M	1	0	3	1	1	1		0	0	1		0	0	1		1	0	0		9	1	0
F	0	0	0	2	0	0		0	4	2		1	0	0		0	0	0		1	9	0
C	2	0	1	0	0	2		0	0	0		1	2	0		2	0	0		5	0	5
Total	3	0	4	3	1	3	14	0	4	3	7	2	2	1	5	3	0	0	3	15	10	5
S_{46}																						
M	0	0	2	0	2	1		1	2	0		1	0	0		1	0	0		9	1	0
F	1	0	3	0	0	0		1	3	0		2	0	0		0	0	0		1	9	0
C	2	0	3	0	2	0		1	2	0		0	0	0		0	0	0		1	0	9
Total	3	0	8	0	4	1	16	3	7	0	10	3	0	0	3	1	0	0	1	11	10	9
S_{47}																						
M	1	0	1	0	1	2		1	2	0		1	0	0		1	0	0		9	1	0
F	0	0	2	1	2	0		1	4	0		0	0	0		0	0	0		1	9	0
C	2	1	1	1	0	0		0	2	2		0	0	0		1	0	0		1	0	9
Total	3	1	4	2	3	2	15	2	8	2	12	1	0	0	1	2	0	0	2	11	10	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{48}																						
M	0	0	2	0	3	0		1	1	1		2	0	0		0	0	0		9	1	0
F	0	0	0	0	1	0		1	3	1		2	0	0		0	0	0		0	10	0
C	0	0	3	0	0	0		0	0	1		4	0	1		1	0	0		3	0	7
Total	0	0	5	0	4	0	9	2	4	3	9	8	0	1	9	1	0	0	1	12	11	7
S_{49}																						
M	0	0	1	1	1	3		0	1	0		3	0	0		0	0	0		7	3	0
F	1	0	0	1	1	1		2	3	0		1	0	0		0	0	0		1	9	0
C	1	0	2	0	0	2		1	2	0		2	0	0		0	0	0		1	1	8
Total	2	0	3	2	2	6	15	3	6	0	9	6	0	0	6	0	0	0	0	9	13	8
S_{50}																						
M	1	0	1	0	1	1		1	3	1		1	0	0		0	0	0		8	0	2
F	0	0	0	1	0	1		0	7	0		1	0	0		0	0	0		4	3	3
C	2	1	0	0	1	1		1	3	0		0	0	0		1	0	0		3	4	3
Total	3	1	1	1	2	3	11	2	13	1	16	2	0	0	2	1	0	0	1	15	7	8
S_{51}																						
M	1	0	1	0	1	0		1	4	0		2	0	0		0	0	0		5	3	2
F	0	0	2	0	0	2		0	5	0		0	0	0		0	0	0		3	6	1
C	0	0	2	1	0	1		1	5	0		0	0	0		0	0	0		3	1	6
Total	1	0	5	1	1	3	11	2	14	0	16	2	0	0	2	0	0	0	0	11	10	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{52}																						
M	0	0	2	0	2	2		1	0	2		0	0	0		1	0	0		5	2	3
F	0	0	3	0	0	1		0	4	0		0	1	0		0	0	0		3	6	1
C	0	0	3	1	0	1		3	0	0		2	0	0		0	0	0		1	2	7
Total	0	0	8	1	2	4	15	4	4	2	10	2	1	0	3	1	0	0	1	9	10	11
S_{53}																						
M	0	0	0	0	2	0		1	3	1		3	0	0		0	0	0		7	2	1
F	0	0	0	0	2	3		1	2	0		2	0	0		0	0	0		2	6	2
C	1	0	0	0	1	1		1	6	0		0	0	0		0	0	0		2	1	7
Total	1	0	0	0	5	4	10	3	11	1	15	5	0	0	5	0	0	0	0	11	9	10
S_{54}																						
M	0	0	1	0	1	2		0	2	1		1	0	0		1	0	1		9	0	1
F	0	0	0	1	3	0		0	3	2		1	0	0		0	0	0		2	8	0
C	2	0	1	0	0	1		0	1	1		1	1	0		2	0	0		2	0	8
Total	2	0	2	1	4	3	12	0	6	4	10	3	1	0	4	3	0	1	4	13	8	9
S_{55}																						
M	1	0	1	0	1	1		1	0	1		1	1	0		2	0	0		9	0	1
F	1	0	0	1	2	0		1	4	1		0	0	0		0	0	0		1	9	0
C	0	0	0	0	1	0		0	3	3		1	1	0		1	0	0		2	0	8
Total	2	0	1	1	4	1	9	2	7	5	14	2	2	0	4	3	0	0	3	12	9	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	Σ_M	Σ_F	Σ_C
S_{56}																						
M	1	1	0	0	2	1		1	2	1		1	0	0		0	0	0		8	1	1
F	0	1	1	0	1	0		3	2	2		0	0	0		0	0	0		0	10	0
C	2	0	1	0	1	1		4	0	1		0	0	0		0	0	0		3	0	7
Total	3	2	2	0	4	2	13	8	4	4	16	1	0	0	1	0	0	0	0	11	11	8
S_{57}																						
M	0	0	0	0	2	3		0	1	2		1	0	0		1	0	0		8	0	2
F	0	0	0	0	1	1		1	7	0		0	0	0		0	0	0		0	10	0
C	1	0	1	0	0	1		1	2	4		0	0	0		0	0	0		1	0	9
Total	1	0	1	0	3	5	10	2	10	6	18	1	0	0	1	1	0	0	1	9	10	11
S_{58}																						
M	1	0	0	3	2	1		0	2	0		1	0	0		0	0	0		9	0	1
F	1	0	0	4	0	0		1	4	0		0	0	0		0	0	0		3	7	0
C	0	2	1	0	1	0		2	3	0		1	0	0		0	0	0		4	0	6
Total	2	2	1	7	3	1	16	3	9	0	12	2	0	0	2	0	0	0	0	16	7	7
S_{59}																						
M	0	0	1	0	1	1		1	5	0		1	0	0		0	0	0		9	1	0
F	0	0	1	0	0	0		1	5	2		0	0	0		0	0	0		1	9	0
C	1	0	2	0	0	0		0	2	2		0	1	0		2	0	0		3	1	6
Total	1	0	4	0	1	1	7	2	12	4	18	1	1	0	2	2	0	0	2	13	11	6

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{60}																						
M	0	0	1	1	0	2		0	2	0		1	0	0		3	0	0		9	0	1
F	1	0	2	0	1	1		2	2	0		1	0	0		0	0	0		2	8	0
C	2	0	0	0	0	0		3	2	1		1	0	0		1	0	0		0	1	9
Total	3	0	3	1	1	3	11	5	6	1	12	3	0	0	3	4	0	0	4	11	9	10

TABLE 17

ITEM ANALYSIS OF RESPONSES FOR
DELINQUENT SUBJECTS ON THE MODIFIED HAND TEST

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	Σ M	Σ F	Σ C
S_{61}																						
M	0	0	2	0	0	3		0	1	1		1	0	2		0	0	0		4	0	6
F	1	0	1	0	0	0		4	2	0		0	0	1		0	0	1		1	9	0
C	0	0	2	0	0	2		1	2	0		1	1	0		0	1	0		1	0	9
Total	1	0	5	0	0	5	11	5	5	1	11	2	1	3	6	0	1	1	2	6	9	15
S_{62}																						
M	1	0	4	1	0	1		0	1	1		1	0	0		0	0	0		6	0	4
F	1	0	0	1	0	0		0	2	1		1	1	0		1	2	0		0	10	0
C	0	0	0	5	0	0		0	1	1		2	1	0		0	0	0		1	1	8
Total	2	0	4	7	0	1	14	0	4	3	7	4	2	0	6	1	2	0	3	7	11	12
S_{63}																						
M	1	0	3	0	0	2		0	1	2		0	0	0		0	0	1		5	4	1
F	3	0	2	1	0	0		1	2	0		0	1	0		0	0	0		3	2	5
C	1	1	1	0	0	0		0	6	0		0	0	0		0	0	1		1	1	8
Total	5	1	6	1	0	2	15	1	9	2	12	0	1	0	1	0	0	2	2	9	7	14

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	Σ M	Σ F	Σ C
S_{64}																						
M	0	0	4	2	0	2		1	0	0		1	0	0		0	0	0		10	0	0
F	0	1	3	1	0	0		3	0	0		0	1	0		0	0	1		1	9	0
C	2	0	1	2	0	0		0	2	0		1	0	1		0	0	1		0	1	9
Total	2	1	8	5	0	2	18	4	2	0	6	2	1	1	4	0	0	2	2	11	10	9
S_{65}																						
M	0	1	5	0	0	1		0	0	1		0	0	0		1	0	1		4	3	3
F	0	0	1	0	3	3		0	1	2		0	0	0		0	0	0		2	6	2
C	0	1	1	0	1	2		0	3	0		0	0	0		2	0	0		2	2	6
Total	0	2	7	0	4	6	19	0	4	3	7	0	0	0	0	3	0	1	4	8	11	11
S_{66}																						
M	1	1	1	0	4	1		0	0	1		1	0	0		0	0	0		8	1	1
F	2	1	0	3	0	0		1	1	0		2	0	0		0	0	0		0	9	1
C	1	0	1	1	0	1		0	1	1		1	1	1		1	0	0		3	0	7
Total	4	2	2	4	4	2	18	1	2	2	5	4	1	1	6	1	0	0	1	11	10	9
S_{67}																						
M	1	0	3	0	0	2		0	2	1		0	0	0		0	1	0		6	2	2
F	0	0	2	1	1	0		2	3	1		0	0	0		0	0	0		2	8	0
C	2	0	1	1	0	1		2	2	1		0	0	0		0	0	0		3	2	5
Total	3	0	6	2	1	3	15	4	7	3	14	0	0	0	0	0	1	0	1	11	12	7

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{68}																						
M	0	0	4	0	0	2		1	1	0		2	0	0		0	0	0		7	2	1
F	0	0	1	2	0	2		0	1	1		2	0	0		0	1	0		2	8	0
C	1	0	2	0	0	1		0	3	1		2	0	0		0	0	0		3	0	7
Total	1	0	7	2	0	5	15	1	5	2	8	6	0	0	6	0	1	0	1	12	10	8
S_{69}																						
M	1	0	3	0	0	4		0	0	1		0	1	0		0	0	0		9	1	0
F	1	2	0	1	1	1		2	0	0		0	0	0		1	0	1		1	9	0
C	1	0	3	0	2	0		0	1	0		0	3	0		0	0	0		6	1	3
Total	3	2	6	1	3	5	20	2	1	1	4	0	4	0	4	1	0	1	2	16	11	3
S_{70}																						
M	1	0	3	0	0	2		0	0	1		1	0	0		0	1	1		8.	1	1
F	0	0	2	1	0	1		0	2	1		0	0	0		0	1	2		0	10	0
C	0	0	0	1	0	5		0	1	0		0	0	0		2	0	1		2	1	7
Total	1	0	5	2	0	8	16	0	3	2	5	1	0	0	1	2	2	4	8	10	12	8
S_{71}																						
M	0	0	3	1	0	2		1	1	0		1	1	0		0	0	0		5	1	4
F	0	0	2	0	0	0		1	1	4		0	0	0		0	1	1		1	8	1
C	1	1	3	0	0	0		1	2	2		0	0	0		0	0	0		1	0	9
Total	1	1	8	1	0	2	13	3	4	6	13	1	1	0	2	0	1	1	2	7	9	14

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	Σ M	Σ F	Σ C
S_{72}																						
M	1	1	4	0	0	2		0	1	0		1	0	0		0	0	0		1	1	0
F	1	0	1	1	0	2		0	5	0		0	0	0		0	0	0		3	7	0
C	2	0	0	0	3	3		0	1	1		0	0	0		0	0	0		4	0	6
Total	4	1	5	1	3	7	21	0	7	1	8	1	0	0	1	0	0	0	0	16	8	6
S_{73}																						
M	2	0	1	2	1	2		0	0	0		1	0	0		0	0	0		8	1	1
F	0	0	1	1	1	2		0	2	1		2	0	0		0	0	0		2	8	0
C	0	0	2	2	0	2		2	3	0		0	0	0		0	0	0		4	2	4
Total	2	0	4	5	2	6	19	2	5	1	8	3	0	0	3	0	0	0	0	14	11	5
S_{74}																						
M	0	0	3	0	0	0		0	0	0		0	2	0		5	0	0		9	1	0
F	1	0	1	0	0	0		0	0	0		1	3	0		4	0	0		2	8	0
C	0	0	0	0	0	0		0	1	0		1	3	0		5	0	0		3	1	6
Total	1	0	4	0	0	0	5	0	1	0	1	2	8	0	10	14	0	0	14	14	10	6
S_{75}																						
M	0	0	2	2	1	4		0	0	0		0	0	0		1	0	0		10	0	0
F	1	1	1	0	0	1		1	3	0		1	0	0		0	0	1		2	8	0
C	1	1	0	1	0	0		2	3	0		0	1	0		0	0	1		2	1	7
Total	2	2	3	3	1	5	16	3	6	0	9	1	1	0	2	1	0	2	3	14	9	7

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	Σ M	Σ F	Σ C
S_{76}																						
M	0	0	2	2	0	2		0	1	2		1	0	0		0	0	0		9	0	1
F	0	0	0	2	1	0		1	1	1		3	1	0		0	0	0		1	9	0
C	1	0	0	3	0	1		0	1	0		1	2	1		0	0	0		2	0	8
Total	1	0	2	7	1	3	14	1	3	3	7	5	3	1	9	0	0	0	0	12	9	9
S_{77}																						
M	2	0	2	1	1	0		0	2	0		1	0	0		0	1	0		3	2	5
F	1	1	0	0	0	0		0	6	1		1	0	0		0	0	0		3	7	0
C	1	0	5	1	0	0		0	0	1		1	0	0		1	0	0		2	0	8
Total	4	1	7	2	1	0	15	0	8	2	10	3	0	0	3	1	1	0	2	8	9	13
S_{78}																						
M	1	0	3	1	0	2		0	2	0		1	0	0		0	0	0		7	1	2
F	0	0	2	1	0	2		0	3	0		2	0	0		0	0	0		4	6	0
C	0	0	2	0	1	2		0	1	2		2	0	0		0	0	0		1	0	9
Total	1	0	7	2	0	6	17	0	6	2	8	5	0	0	5	0	0	0	0	12	7	11
S_{79}																						
M	0	0	1	0	2	0		0	2	1		3	0	0		1	0	0		8	0	2
F	0	0	1	1	0	0		1	3	1		3	0	0		0	0	0		3	7	0
C	2	0	3	0	0	0		1	0	1		3	0	0		0	0	0		5	0	5
Total	2	0	5	1	2	0	10	2	5	3	10	9	0	0	9	1	0	0	1	16	7	7

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{80}																						
M	0	1	4	0	0	2		0	1	0		2	0	0		0	0	0		10	0	0
F	0	0	2	1	0	1		0	4	0		2	0	0		0	0	0		2	8	0
C	3	0	0	0	0	1		1	4	0		1	0	0		0	0	0		3	1	6
Total	3	1	6	1	0	4	15	1	9	0	10	5	0	0	5	0	0	0	0	15	9	6
S_{81}																						
M	1	0	2	1	1	2		0	1	0		0	1	0		0	0	1		9	1	0
F	1	0	1	2	0	2		1	1	2		0	0	0		0	0	0		2	6	2
C	2	0	0	0	2	8		1	0	2		0	0	0		0	0	0		4	1	5
Total	4	0	3	3	3	7	20	2	2	4	8	0	1	0	1	0	0	1	1	15	8	7
S_{82}																						
M	1	0	4	0	0	1		0	2	1		0	0	1		0	0	0		8	0	2
F	0	0	1	3	0	0		0	2	2		1	0	0		1	0	0		3	7	0
C	2	0	2	0	0	1		0	2	1		1	0	0		1	0	0		2	0	8
Total	3	0	7	3	0	2	15	0	6	4	10	2	0	1	3	2	0	0	2	13	7	10
S_{83}																						
M	0	0	2	0	1	2		0	4	1		0	0	0		0	0	0		6	2	2
F	0	0	2	2	0	0		1	3	0		1	1	0		0	0	0		0	8	2
C	1	0	0	2	0	1		0	6	0		0	0	0		0	0	0		3	2	5
Total	1	0	4	4	1	3	13	1	13	1	15	1	1	0	2	0	0	0	0	9	12	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	Σ INT	ACQ	ACT	PAS	Σ ENV	TEN	CRIP	FEAR	Σ MAL	DES	FAIL	BIZ	Σ WITH	Σ M	Σ F	Σ C
S_{84}																						
M	1	0	3	1	0	1		1	1	0		2	0	0		0	0	0		10	0	0
F	0	0	0	1	1	1		0	2	0		3	0	0		1	1	0		0	10	0
C	0	0	0	0	3	1		2	0	0		2	1	0		1	0	0		4	0	6
Total	1	0	3	2	4	3	13	3	3	0	6	7	1	0	8	2	1	0	3	14	10	6
S_{85}																						
M	1	1	2	0	0	2		1	1	1		0	0	0		0	1	0		4	0	6
F	1	0	1	1	1	0		2	2	1		1	0	0		0	0	0		1	9	0
C	2	0	1	1	0	1		1	3	0		1	0	0		0	0	0		1	0	9
Total	4	1	4	2	1	3	15	3	6	2	12	2	0	0	3	0	1	0	1	6	9	15
S_{86}																						
M	0	0	1	0	1	1		0	1	1		1	0	0		4	0	0		7	1	2
F	0	0	0	0	0	2		0	3	0		0	1	0		2	0	2		1	9	0
C	0	0	3	0	0	0		0	2	0		3	0	1		1	0	0		0	0	10
Total	0	0	4	0	1	3	8	0	6	1	7	4	1	1	6	7	0	2	9	8	10	12
S_{87}																						
M	0	1	0	1	0	3		0	1	0		2	0	1		0	0	1		6	3	1
F	1	0	2	1	0	4		0	0	0		1	0	0		1	0	0		0	9	1
C	1	0	0	2	1	0		0	3	0		1	0	1		1	0	0		2	1	7
Total	2	1	2	4	1	7	17	0	4	0	4	4	0	2	6	2	0	1	3	8	13	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{88}																						
M	1	0	2	2	2	3		0	0	0		0	0	0		0	0	0		6	4	0
F	0	1	0	3	1	1		1	0	1		1	0	0		1	0	0		9	1	0
C	0	0	1	0	0	2		0	3	2		1	0	1		0	0	0		4	6	0
Total	1	1	3	5	3	6	19	1	3	3	7	2	0	1	3	1	0	0	1	19	11	0
S_{89}																						
M	1	0	4	0	1	2		0	1	1		0	0	0		0	0	0		5	0	5
F	2	1	2	0	0	0		2	1	0		0	0	0		0	0	2		3	6	1
C	4	0	0	0	1	4		0	1	0		0	0	0		0	0	0		2	0	8
Total	7	1	6	0	2	6	22	2	3	1	6	0	0	0	0	0	0	2	2	10	6	14
S_{90}																						
M	1	1	3	0	0	1		0	1	1		2	0	0		0	0	0		10	0	0
F	1	0	2	1	0	1		0	4	0		1	0	0		0	0	0		0	10	0
C	1	0	0	0	0	2		3	3	0		1	0	0		0	0	0		4	0	6
Total	3	1	5	1	0	4	14	3	8	1	12	4	0	0	4	0	0	0	0	14	10	6
S_{91}																						
M	0	0	0	0	1	6		0	0	0		1	0	2		0	0	0		9	0	1
F	0	0	0	3	2	1		2	1	0		0	1	0		0	0	0		1	7	2
C	0	0	0	3	1	3		1	0	0		2	0	0		0	0	0		1	3	6
Total	0	0	0	6	4	10	20	3	1	0	4	3	1	2	6	0	0	0	0	11	10	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{92}																						
M	2	0	0	2	2	2		0	0	0		1	0	0		0	1	0		9	1	0
F	2	0	1	1	1	0		1	2	0		0	2	0		0	0	0		2	8	0
C	0	0	0	0	2	0		1	5	0		0	2	0		0	0	0		4	0	6
Total	4	0	1	3	5	2	15	2	7	0	9	1	4	0	5	0	1	0	1	15	9	6
S_{93}																						
M	1	0	4	0	0	3		0	0	1		0	1	0		0	0	0		9	1	0
F	1	0	2	0	1	1		1	2	0		0	0	0		1	0	1		1	9	0
C	1	0	3	0	1	1		0	2	0		0	2	0		0	0	0		6	1	3
Total	3	0	9	0	2	5	19	1	4	1	6	0	3	0	3	1	0	1	2	16	11	3
S_{94}																						
M	1	0	1	2	2	1		0	1	0		1	0	0		1	0	0		8	1	1
F	0	0	3	0	1	0		1	0	1		3	0	0		0	1	0		1	9	0
C	0	1	0	0	0	3		1	3	0		1	0	0		0	1	0		1	0	9
Total	1	1	4	2	3	4	15	2	4	1	7	5	0	0	5	1	2	0	3	10	10	10
S_{95}																						
M	0	0	4	0	0	2		1	0	2		1	0	0		0	0	0		9	0	1
F	0	0	1	0	0	1		1	4	2		1	0	0		0	0	0		1	9	0
C	1	0	2	0	0	2		2	1	2		0	0	0		0	0	0		3	1	6
Total	1	0	7	0	0	5	13	4	5	6	15	2	0	0	2	0	0	0	0	13	10	7

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{96}																						
M	0	0	0	1	0	3		2	1	0		1	2	0		0	0	0		8	1	1
F	0	0	1	0	0	0		2	5	0		1	1	0		0	0	0		1	9	0
C	0	0	1	0	0	4		2	3	0		0	0	0		0	0	0		2	2	6
Total	0	0	2	1	0	7	10	6	9	0	15	2	3	0	5	0	0	0	0	11	12	7
S_{97}																						
M	3	0	2	0	1	3		0	0	0		0	0	0		0	1	0		10	0	0
F	2	0	0	1	0	2		0	4	1		0	0	0		0	0	0		1	9	0
C	2	1	3	0	0	2		0	0	1		1	0	0		0	0	0		5	1	4
Total	7	1	5	1	1	7	22	0	4	2	6	1	0	0	1	0	1	0	1	16	10	4
S_{98}																						
M	1	0	2	0	2	1		1	0	0		3	0	0		0	0	0		9	1	0
F	0	0	1	3	0	0		1	1	0		3	0	0		0	0	1		0.	10	0
C	0	0	3	0	0	0		1	4	1		0	1	0		0	0	0		4	1	5
Total	1	0	6	3	2	1	13	3	5	1	9	6	1	0	7	0	0	1	1	13	12	5
S_{99}																						
M	0	0	1	1	0	1		2	2	1		1	0	0		1	0	0		7	2	1
F	0	0	3	2	1	0		0	2	1		0	1	0		0	0	0		1	9	0
C	1	0	3	0	1	1		0	1	1		1	0	0		1	0	0		7	0	3
Total	1	0	7	3	2	2	15	2	5	3	10	2	1	0	3	2	0	0	2	15	11	4

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{100}																						
M	0	0	3	1	1	1		1	0	3		0	0	0		0	0	0		9	0	1
F	0	0	1	0	1	0		0	0	0		7	0	0		0	0	1		2	8	0
C	0	1	0	1	0	0		1	3	0		2	1	0		1	0	0		1	3	6
Total	0	1	4	2	2	1	10	2	3	3	8	9	1	0	10	1	0	1	2	12	11	7
S_{101}																						
M	0	2	3	0	1	1		0	2	0		0	1	0		0	0	0		6	0	4
F	0	0	2	0	1	1		1	2	1		1	0	1		0	0	0		5	4	1
C	0	2	2	1	0	0		2	3	0		0	0	0		0	0	0		2	0	8
Total	0	4	7	1	2	2	16	3	7	1	11	1	1	1	3	0	0	0	0	13	4	13
S_{102}																						
M	0	0	2	2	1	0		1	1	1		1	0	0		1	0	0		9	0	1
F	1	0	1	2	0	0		0	2	2		2	0	0		0	0	0		0	9	1
C	2	0	1	2	0	0		2	3	0		0	0	0		0	0	0		0	1	9
Total	3	0	4	6	1	0	14	3	6	3	12	3	0	0	3	1	0	0	1	9	10	11
S_{103}																						
M	0	0	2	1	1	2		1	0	2		1	0	0		0	0	0		8	2	0
F	0	0	2	1	0	0		2	1	0		3	0	0		0	1	0		1	9	0
C	0	0	1	2	0	0		1	2	1		2	1	0		0	0	0		3	1	6
Total	0	0	5	4	1	2	12	4	3	3	10	6	1	0	7	0	1	0	1	12	12	6

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{104}																						
M	0	0	3	1	1	2		0	1	1		1	0	0		0	0	0		6	0	4
F	0	0	0	0	0	1		1	4	3		1	0	0		0	0	0		0	6	4
C	1	0	0	0	0	1		0	3	3		1	1	0		0	0	0		0	0	10
Total	1	0	3	1	1	4	10	1	8	7	16	3	1	0	4	0	0	0	0	6	6	18
S_{105}																						
M	0	0	3	2	1	1		0	0	1		2	0	0		0	0	0		8	1	1
F	0	0	3	0	0	1		0	0	0		4	0	0		0	0	2		2	7	1
C	2	0	3	0	0	1		1	0	0		2	0	0		0	1	0		4	1	5
Total	2	0	9	2	1	3	17	1	0	1	2	8	0	0	8	0	1	2	3	14	9	7
S_{106}																						
M	1	0	4	2	0	1		0	0	0		1	0	1		0	0	0		5	2	3
F	1	0	0	2	0	1		0	5	1		0	0	0		0	0	0		3	7	0
C	0	0	1	1	0	0		1	3	1		2	1	0		0	0	0		1	2	7
Total	2	0	5	5	0	2	14	1	8	2	11	3	1	1	4	0	0	0	0	9	11	10
S_{107}																						
M	1	0	2	2	0	2		0	1	0		1	0	0		0	0	1		10	0	0
F	2	0	2	1	0	1		0	2	2		0	0	0		0	0	0		3	7	0
C	1	0	0	0	3	3		0	0	3		0	0	0		0	0	0		5	0	5
Total	4	0	4	3	3	6	20	0	3	5	8	1	0	0	1	0	0	1	1	18	7	5

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	WITH	ΣM	ΣF	ΣC
S_{108}																						
M	0	0	3	1	0	2		0	0	2		1	0	1		0	0	0		10	0	0
F	0	0	4	3	1	0		0	0	0		1	0	0		0	1	0		1	8	1
C	0	0	0	1	1	1		1	0	3		2	1	0		0	0	0		2	1	7
Total	0	0	7	5	2	3	17	1	0	5	6	4	1	1	6	0	1	0	1	13	9	8
S_{109}																						
M	0	0	3	1	0	1		0	0	0		1	1	1		0	2	0		10	0	0
F	2	1	3	1	1	0		0	0	0		0	0	0		1	0	1		4	5	1
C	1	1	1	0	0	1		0	0	2		2	1	0		0	1	0		0	2	8
Total	3	2	7	2	1	2	17	0	0	2	2	3	2	1	6	1	3	1	5	14	7	9
S_{110}																						
M	2	0	1	2	2	3		0	0	0		0	0	0		0	0	0		8	1	1
F	0	0	0	2	1	0		0	1	1		3	1	0		0	0	1		1	9	0
C	0	1	2	0	0	0		1	2	0		1	2	0		0	0	1		2	0	8
Total	2	1	3	4	3	3	16	1	3	1	5	4	3	0	7	0	0	2	2	11	10	9
S_{111}																						
M	0	0	2	0	0	2		0	5	1		0	0	0		0	0	0		9	0	1
F	0	0	0	1	0	1		0	3	0		4	1	0		0	0	0		4	6	0
C	1	0	0	1	0	1		4	2	1		0	0	0		0	0	0		4	1	5
Total	1	0	2	2	0	4	9	4	10	2	16	4	1	0	5	0	0	0	0	17	7	6

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	EFAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{112}																						
M	1	0	4	0	0	1		0	0	2		1	0	1		0	0	0		8	0	2
F	0	0	1	3	0	2		0	3	0		1	0	0		0	0	0		4	6	0
C	1	0	1	1	0	4		0	1	0		1	0	0		1	0	0		3	0	7
Total	2	0	6	4	0	7	19	0	4	2	6	3	0	1	4	1	0	0	1	15	6	9
S_{113}																						
M	0	0	4	0	0	0		0	1	0		3	2	0		0	0	0		7	3	0
F	0	0	1	0	0	1		1	3	1		1	1	0		1	0	0		1	9	0
C	0	0	0	2	0	0		0	1	2		3	0	0		2	0	0		7	3	0
Total	0	0	5	2	0	1	8	1	5	3	9	7	3	0	10	3	0	0	3	15	15	0
S_{114}																						
M	0	0	2	1	3	1		0	2	0		1	0	0		0	0	0		6	2	2
F	1	1	1	3	0	1		1	1	0		1	0	0		0	0	0		2	7	1
C	0	1	4	0	1	1		0	1	0		1	0	0		0	0	1		2	1	7
Total	1	2	7	4	4	3	21	1	4	0	5	2	0	0	3	0	0	1	1	10	10	10
S_{115}																						
M	0	0	2	0	1	2		1	0	1		1	0	2		0	0	0		9	1	0
F	0	0	2	0	1	0		3	1	2		0	1	0		0	0	0		1	9	0
C	2	0	2	0	2	1		2	0	1		0	0	0		0	0	0		0	1	9
Total	2	0	6	0	4	3	15	6	1	4	11	1	1	2	4	0	0	0	0	10	11	9

Continued

	AFF	DEP	COM	EXH	DIR	AGG	ΣINT	ACQ	ACT	PAS	ΣENV	TEN	CRIP	FEAR	ΣMAL	DES	FAIL	BIZ	ΣWITH	ΣM	ΣF	ΣC
S_{116}																						
M	0	0	3	0	0	3		0	0	1		3	0	0		0	0	0		7	2	1
F	1	0	1	1	0	1		1	1	0		4	0	0		0	0	0		1	9	0
C	2	1	0	1	0	0		0	4	0		2	0	0		0	0	0		4	1	5
Total	3	1	4	2	0	4	14	1	5	1	7	9	0	0	9	0	0	0	0	12	12	6
S_{117}																						
M	0	0	1	1	1	2		1	2	1		0	0	0		0	0	1		6	1	3
F	0	0	1	1	0	0		0	1	1		2	0	1		0	0	3		1	8	1
C	1	0	2	1	0	0		0	2	3		0	0	0		0	0	1		4	0	6
Total	1	0	4	3	1	2	11	1	5	5	11	2	0	1	3	0	0	5	5	11	9	10
S_{118}																						
M	1	0	2	2	1	3		0	0	0		1	0	0		0	0	0		8	0	2
F	0	1	0	1	1	1		2	0	0		2	0	0		2	0	0		2	7	1
C	0	0	1	2	0	2		0	2	2		0	0	1		0	0	0		1	1	8
Total	1	1	3	5	2	6	18	2	2	2	6	3	0	1	4	2	0	0	2	11	8	11
S_{119}																						
M	0	0	3	2	0	2		0	0	0		1	1	0		0	1	0		7	1	2
F	0	0	1	4	0	0		2	1	1		1	0	0		0	0	0		1	9	0
C	1	0	1	3	1	0		2	0	1		0	1	0		0	0	0		2	0	8
Total	1	0	5	9	1	2	18	4	1	2	7	2	2	0	4	0	1	0	1	10	10	10

Continued

	AFF	DEP	COM	EXH	DIR	AGG	∑INT	ACQ	ACT	PAS	∑ENV	TEN	CRIP	FEAR	∑MAL	DES	FAIL	BIZ	∑WITH	∑M	∑F	∑C
S_{120}																						
M	3	0	2	0	0	1		0	2	0		2	0	0		0	0	0		2	3	5
F	3	0	3	2	0	0		0	1	0		1	0	0		0	0	0		0	6	4
C	0	1	3	0	1	0		0	4	1		0	0	0		0	0	0		0	0	10
Total	6	1	8	2	1	1	19	0	7	1	8	3	0	0	3	0	0	0	0	2	9	19