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A Validation Study of Three Non-Verbal Maps Test Signs as Indicators of Hostility Among Delinquent Boys

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**A VALIDATION STUDY OF THREE NON-VERBAL MAPS TEST SIGNS AS
INDICATORS OF HOSTILITY AMONG DELINQUENT BOYS**

by

Basil Edward Hajjar

**A Thesis Submitted to the Faculty of the Graduate School of
Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Master of Arts**

June

1958

LIFE

Basil Edward Hajjar was born in Paterson, New Jersey, November 5, 1925.

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Basil E. Najjar

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CHAPTER I

INTRODUCTION

A. Make-A-Picture Story Test. The Make-A-Picture Story Test, commonly known as the MAPS, is a picture thematic technique developed by Shneidman (15) in 1947 as a variation of the Thematic Apperception Test (TAT) principle. The MAPS test differs from the TAT in that the figures are separated from the backgrounds thereby loosening the structure of the stimulus material. This gives rise to expressive action in response to the stimulus presented.

In its present form, the MAPS test consist of twenty-one background pictures and sixty-seven different figures. Each background along with the sixty-seven figures are presented to a subject with instructions to select and populate one or more of the figures on each background and then tell a story about the situation he has created. The rationale underlying the MAPS test is stated by Shneidman (16 p. 315) as follows:

It is felt that when a subject is presented with the opportunity to select figures with which he can populate a social or ambiguous background picture and then tell a story of the situation he has created, he is apt to "forget himself" and reveal personal tendencies, thoughts, aspirations, tensions and perturbations, in the figures he chooses, their rela-

tionship to one another, their relationship to the backgrounds on which they are placed and in the stories he relates.

Thus the added degree of freedom provided by the selection and placement of the various figures offers an additional dimension of projection through which the subject can reveal more idiomatic aspects of his personality heretofore unknown.

Shneidman (15 p. 151) considers the selection and handling of the figures as the "formal" aspects of the MAPS test. He makes the following distinction:

Formal relates to certain aspects concerning the structure of the performance, as opposed to the content of the performance. The term "formal" can gain operational meaning by referring to the aspects of performance which will be measured: The formal analysis will be in terms of which figures are chosen, how many are chosen, where they are placed on the background, how they are handled by the subject and what relationship they bear to each other. The scoring will thus be in terms of items of performance and will necessitate the identification of a number of "signs".

B. MAPS Test Non-Verbal Signs. A MAPS test sign is defined as an objectively discernable aspect of the subject's treatment of the test material. (16 p. 316) Shneidman (15 p. 190) has experimentally established a number of these non-verbal signs which lend themselves to quantitative analysis. Among these signs are those which deal with figure number, figure repetition, figure selection, figure placement and figure interaction.

Although these signs have been tentatively established

and shown to differentiate significantly between psychotic and normal populations, nevertheless further validating research using all or some of these specific signs remains to be investigated. Available MAPS test research to-date reveals very little emphasis placed on the experimental validation of these various non-verbal signs with other than different nosological groups. Therefore the need for investigating the validity of certain of these non-verbal signs seems warranted.

C. Purpose and Value. The purpose of this research is directed primarily toward validating three non-verbal MAPS test signs, namely, figure number, figure repetition and figure selection against two objective criteria. These criteria are the Manifest Hostility Scale (18) and the TAT Hostile-Aggressive Content Scale. (19) The three non-verbal signs are being validated to determine their discriminatory value as indicators of hostility among delinquent boys. The value of this research is twofold: First, it is aimed at partially fulfilling the need for some experimental validation of these non-verbal signs as diagnostic tools. Secondly, it is aimed at sharpening the clinical usefulness of these signs with delinquent boys. An effort will be made to indicate any significant patterns which exhibit differential validity between the two delinquent groups. This study will be restricted to the three non-verbal signs while the psychodynamic

aspects are neglected in the interest of empirical validity.

D. Hypothesis. The following hypothesis were formulated for testing in this research:

- 1) The three non-verbal MAPS test signs will significantly distinguish between the high and low hostile delinquent groups in the following ways:
 - a) The high hostile group will average a smaller number of figures per background than the low hostile group.
 - b) The high hostile group will repeatedly use more hostile figures on the total backgrounds than the low hostile group.
 - c) The high hostile group will select more specific types of hostile figures on the total backgrounds than the low hostile group.
- 2) The high hostile group will show a greater amount of verbal hostile content than the low hostile group on the total backgrounds.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

A. MAPS Test Studies. The most important experimental research dealing with the non-verbal signs is the original study by Shneidman. (15) He investigated the extent to which the objective signs statistically differentiate between normal and schizophrenic groups. The subjects consisted of fifty male veterans in each group obtained from a VA neuropsychiatric and general hospital respectively. Shneidman found sixty-four non-verbal signs which differentiated statistically between the two groups on the basis of critical ratios at or above the ninety per cent level. Among these sixty-four signs, forty-two were manifested by a greater proportion of normals and twenty-two by a greater proportion of psychotics.

In order to test the validity of these signs with new groups, Shneidman conducted an intra-group study comparing one-half of each of the two groups with the other halves using the sixty-four signs. He found that the statistical use of the MAPS test non-verbal signs may be employed to distinguish between new groups and the stability of these measures would not diminish with

larger samplings. (15 p. 203)

Walther (21) studied the use of the MAPS test with fifty disturbed adolescents between the ages of eleven and eighteen at a children's unit of a state mental hospital. The MAPS test was found to be applicable with disturbed adolescents because they produced good projective stories and also many unusual and varied non-verbal sign patterns were elicited which lend themselves well to quantitative scoring and analysis. The analysis of the non-verbal data revealed the following factors: The average number of figures used per background varied widely from one to four or more. The greatest average number of figures were used for the livingroom, cave and dream backgrounds. The smallest average number were used for the bedroom, bathroom and cemetery. The six most frequently used figures were A-1 (dog), L-4 (ghost), M-2 (man undressing), M-7 (supine figure), L-6 (witch) and C-9 (boy crying). The group tended to select proportionally more male and female figures than children figures. The group showed more of a preference for adult male figures on the bridge background and least in the cave background. Female figures were used more with the bedroom background and less with the dream background. Children figures were used more in the shanty background and less in the bedroom background. Walther concludes by saying that the absence of available norms based on adequate samples of normal ado-

lescents makes it impossible to determine to what extent these various sign patterns deviate in the direction of abnormality.

(21 p. 3)

Fine (23) in his investigation of Asthmatic and Non-Asthmatic male and female children found the quantitative usefulness of the non-verbal signs in differentiating between the two groups in figure number, figure repetition and figure activity. In figure number, the asthmatic children used slightly more than four figures per background while the non-asthmatic children tended on the average to use fewer figures. With regard to figure repetition, the asthmatic children used more parent, medical and faceless figures and fewer nude figures. Hostile figures (M-6, M-7, M-5) were used more frequently on the dream scene and less frequently on the street scene. The figure activity of the asthmatic children had to do with family interaction in which the mother and father figures were placed together in an acceptant situation more often. There was more dependency, sexual conflict, illness and depression in the asthmatic children than in the non-asthmatic children. Another interesting feature was the differences found between the sexes which was just as striking as the differences between the two groups.

Walker (20) compared the hostility manifestations of Hostile Male Adults in psychotherapy on the Rorschach and the MAPS

test performances. Walker found that the hostility ratings based on the content analysis of the Rorschach and the MAPS tests were very significantly related at the .01 level of confidence. Hence, the implication of this finding is that the projective test are predictive of hostile behavior of which the patient is unaware. The analysis of the figure number pattern revealed the use of 2.75 figures per background. Figure repetition patterns revealed similar selections as those made by normal adults with the exception of the use of F-4 (slattern young woman). A considerable amount of figure activity had to do with hostility. The hostility was usually expressed indirectly by humorous or witty derogatory comments with the most common objects of hostility being male figures either authority or peer.

Farberow (13) conducted a study in which he compared the personality patterns of sixty-four male suicidal mental hospital patients. The subjects were veterans ranging from twenty to sixty-four years in age with various neurotic and psychotic classifications. They were on an "observational ward" of a neuropsychiatric hospital following an abortive attempt at suicide or a threat of suicide. The subjects were equally divided into two groups designated as "Attempt" and "Threat".

The findings indicate the attempt suicide group used an average of 3.37 figures per background while the threat suicide

group used an average of 2.75 figures per background. For the attempt group, the most frequent figure repeatedly chosen was M-5 (policeman) and for the threat group, the figure most often chosen was M-15 (nonchalant male with hands in pocket). Several subjects of both groups made relatively bizarre figure placements but this kind of placement was not typical and appeared only in the record of those subjects known to be the most disturbed. The figure activity of the threat group was mostly concerned with hostility and aggression in which the figures were frequently frustrated and characteristically reacted with irritability and agitation. In contrast, the attempt group showed less frustration and agitation but the characters were depressed and much more resigned and melancholic. The single most important background for the diagnosis of suicidal tendencies seemed to be the bridge. In conclusion, Farberow (13 p. 76) states that the threat group is more seriously disturbed than the attempt group. He assumes that the act of threatening suicide acts in an abreactive, apparently therapeutic manner upon the seriousness of the disturbance of the personality.

Genant (22) compared the MAPS test records of normals, neurotics and schizophrenics. There were thirty subjects in each group with an age range from nineteen to fifty-five and an intelligence range from dull normal to superior. All the subjects were male veterans obtained from a VA general and neuropsychiatric hos-

pital. The following comparisons of the non-verbal sign patterns of the three groups are statistically meaningful at or below the .05 level of confidence. The average figure number per background revealed the normal group employed 3 to 3.5 figures, the neurotic group used 3.2 figures with a large inter-variability, while the schizophrenic group used 0 to 8 or more figures. In figure repetition, the normal group frequently chose figures M-9, M-10, M-14, M-16, M-19, F-9 and A-1. The neurotic group frequently chose figures M-2, M-5, M-9 and A-1 while the schizophrenic group chose figures M-8 and F-4 most frequently. The figure placement of both the normal and neurotic groups showed no bizarre placement or inappropriate choice of figures for any specific backgrounds. However, the schizophrenic group manifested many unusual bizarre placements such as figures upside down, along the margin and in mid-air. The figure activity of the three groups revealed the following characteristics: The neurotic subjects were like the normals in that their stories showed much striving for interpersonal relationships but unlike the normals, they were only able to manifest these strivings in marital settings. The neurotic and schizophrenic groups were similar in their greater use of defensive mechanisms in interpersonal strivings, domination of others in fantasy as a means of securing status, perception of the environment as dangerous. They differed from the normal group in that

their stories showed little reciprocity in human relationships. In general, the neurotic group was frequently overproductive in contrast to the schizophrenic group's marked constriction. The neurotic group was more passive than the normal group yet less passive than the schizophrenic group. Unlike the schizophrenic and normal groups, the neurotic group revealed more aggression, emotional lability and less acceptance of social mores. (22)

Shneidman (17) reports on some observations made on the MAPS test results of twenty-five Organic Psychotic Male Adults. The observations indicate that the organic psychotic subjects use an average of 3 figures per background with marked variability within a given record from 0 to 8 or more figures. The figures most frequently chosen were the two nude figures M-1 and F-1. Figure placement were more normal than schizophrenic in gross appearance, that is, the figures were standing erect with their feet on the ground. There was much sexual activity among the figures and often on inappropriate backgrounds. Open hostility, such as murder and rape, was evident and often usual moral standards were forsaken. Frequently the subjects made self-reference to the figures used. In general, the records were neither nosological or bizarre as much as they were uncontrolled and minus super-ego formation. (17 p. 54)

Shneidman, Nielsen and Schultz (24) studied the MAPS

test records of thirty-three Aphasic subjects, all of whom were male veterans in an "Aphasic Ward" of a VA general hospital. The median age was thirty-five with a range from twenty-one to sixty-five. Shneidman and al (24) found the aphasic subjects tended to use 2 figures per background with little deviation. There was no figure typically chosen but the aphasic subjects did not seem to choose figures typically selected by normal male adults. There were infrequent bizarre placements of figures with most of the placements being normal in that the figures were standing erect with their feet on the ground. The interaction of the figures revealed a paucity of narrative material. The figure activity indicated a general uninhibited use of hostility and sexuality. In addition, there was concern with three areas, namely, controlling aggressive impulses, maintaining masculine status and anxiety over dependency status. (14 p. 82)

Bindon (10) investigated the difference between the formal psychosocial MAPS test signs of Rubella¹ and Non-Rubella Deaf Children. The groups consisted of thirty-six rubella deaf, fifteen non-rubella deaf and thirty hearing children. All the children were fifteen years old. The three groups were matched

1 Rubella deaf children are those born deaf through the mother's contraction of German measles during pregnancy.

according to age, sex, educational classification and approximate socio-economic status. In addition, two other criteria, namely, the degree of hearing loss and residential factor, were included in the matching of the rubella deaf group with the non-rubella deaf group.

The results indicate that both the MAPS test composite sign scores, "normal" and "schizophrenic", failed to differentiate between the rubella deaf and the non-rubella deaf groups at the .01 level of significance. When the deaf sub-groups were compared neither the degree of deafness, sex nor institutional residence was found to have had any specific influence on their performance ($p > .01$). (10 p. 42) However, the rubella deaf, in comparison with the non-deaf group, scored fewer "normal" signs ($p > .001$) and more "schizophrenic" signs ($p > .01$). The six "normal" signs and the three "schizophrenic" signs were found to differentiate these two groups ($p > .05$). Furthermore, a comparison of the deaf group as a whole (rubella and non-rubella) with the non-deaf group revealed that the six "normal" signs and the three "schizophrenic" signs could also distinguish these two populations at the .05 level of significance in all instances. Bindon concludes by stating that the fantasy production of the deaf children, in general, are indicative of their social isolation and illogical, unrealistic thinking. (10 p. 42)

B. Expressive Movement Studies. A person's psychomotor movements like his selection and handling of MAPS test figures is a similar form of non-verbal expressive behavior in that both are projections of some underlying personality correlates. In view of this it seems important at this time to review some interesting studies concerned with expressive psychomotor movement.

Researchers, in the field of personality, have been always keenly interested in studying the dynamic relationships between expressive movement and personality characteristics. The assumption underlying such a relationship is expressed by Precker (7 p. 458) in this way:

A person's movements are not accidental nor chance-determined, but are consistent under different environmental conditions, and are related to the basic motivations of the organism.

Experimental investigations of expressive behavior have been primarily concerned with such psychomotor aspects as, facial expression, gestures, gait and postural patterns as well as many others. Some of these studies will be reviewed and discussed briefly in the following paragraphs.

In an interesting study, Deutsch (11) an analyst, graphed the expressive behavior of his patients in terms of their postural patterns. He found a distinct relationship between the motor behavior of the individual and the verbal expression of the

unconscious material.

Bateson (1) studied cultural groups in terms of the tension evident in the groups as a whole. He found, for example, that the occidental usually has his hands in a relaxed posture when not in use, with the fingers bent at the knuckles and joints. Whereas the Balinese has his fingers extended in an awkward position when at rest. Bateson's interpretation is that the tremendous amount of emotional strain the Balinese undergoes in his difficult socialization process is manifested in his expressive postural patterns.

Kretschmer (5) differentiated between the expressive behavior of his schizoid and cycloid temperaments. He found the cycloid temperament tends to vary between fast and slow, while the schizoid's varied between tenacious and jerky.

In a simple sensory motor task, Langer (6) found that motor impulsion (tendency to act without thinking) was correlated with aggression .52, dominance .43, exocathexis .52, exhibition .40, and impulsion .38, as determined by the other measures utilized in the extensive Harvard study of personality, under Murray. When these five attributes were considered as ascendance syndrome, the correlation was .65 between ascendance and motor impulsion. Impedance (the requiring of a disproportionate amount of time to produce the task) correlated negatively with aggression, counter-

action, defensiveness, dominance and impulsiveness, indicating feelings of inferiority, insecurity, poor integration and self-abasement.

Balken and Masserman (9) devised a method of formal analysis of style of speech. Using such criteria as average number of words, parts of speech used and certain quotients, such as, the total number of verbs divided by the total number of adjectives, they were able to differentiate between cases of such neurotic manifestations as conversion hysteria, anxiety states and obsessive-compulsive. There were typical speech patterns or styles for the various diagnostic groups. For instances, conversion hysterics had a low verb-adjective quotient, while patients suffering from anxiety states had a high verb-adjective quotient. According to the authors, these language pictures correspond to the theoretical clinical picture of these syndromes.

Duffy (12), using three techniques, measured the muscular tension of the hand during performance of eight different tasks. Measurements were taken on three different occasions. The scores for the twenty-five subjects were studied and a generally consistent individual tension level was found. Thus, in terms of appearance as well as muscular tension, there seems to be evidence of both consistency and validity of the hand as a form of expression.

Efron (2) in his extensive studies of traditional

groups of Jews and Italians and assimilated Jews and Italians, found that gestures are not racially inherited, but are strongly influenced by the environment, that is, by factors of a socio-psychological nature.

C. Summary. Research with MAPS test non-verbal signs, although showing early promise for further investigation, has been slow in taking shape. The limited number of studies have been exploratory in nature and aimed at quantitative and comparative types of investigations. The great majority of these studies were conducted with various normal and pathological male adult groups. The remaining few have dealt with some children and adolescent groups. The non-verbal sign patterns obtained from these various studies reveal certain unique group characteristics which generally seem to differentiate between the groups being studied. The non-verbal signs which seem to lend themselves to quantitative analysis consist of figure number, figure selection, figure placement, figure repetition and figure activity.

The wide applicability of the non-verbal signs has been clearly demonstrated by the various related studies but the results obtained have merely indicated that further investigations of a validating nature need to be undertaken. However, some initial strides have been made in exploring the non-verbal area of behavior in terms of obtaining unique personality correlates.

The Expressive movement studies dealing with the non-verbal psychomotor facets of behavior as related to underlying personality dynamics has held the interest of experimental researchers for many years. These studies have been quite extensive and systematic with many intra-personality and group investigations. The approaches have varied from psychophysiological to socio-anthropological. In general, there seems to be consistent agreement among various researchers that expressive psychomotor behavior is strongly influenced by factors of a socio-psychological nature.

In conclusion, the limited number of related studies dealing with the validation of the various non-verbal signs points up the pressing need for pursuing such investigations, in particular with normal and disturbed adolescent groups.

CHAPTER III

PROCEDURE

A. Subjects. The subjects of this study consist of sixty male delinquents selected from the Reception Depot of the Illinois Youth Commission located at St. Charles, Illinois. The design of the experiment is such that the subjects will be divided into two groups of thirty. The two groups will be designated as high hostile and low hostile.

Each new boy committed to the Illinois Youth Commission is sent to the Reception Depot for processing prior to transference to one of the three Illinois Youth Commission Facilities. These boys are adjudicated "delinquents" by the courts and committed to the Illinois Youth Commission for an indeterminate period of time. Their commitment charges consist of truancy, runaway from home and institutions, shoplifting, purse snatching, larceny, burglary, auto theft, assault and strong armed robbery.

In order to obtain the two experimental groups, the following method was employed: During an eight week period, the first two hundred boys admitted to the reception depot were administered the revised Siegel's Manifest Hostility Scale (18) as part

of the regularly scheduled group diagnostic testing battery. A frequency distribution of the two hundred manifest hostility scores showed a slight skewness toward the higher end of the scores. The mean and the standard deviation of the distribution were found to be 21 and 7.46. The probable error rather than the standard deviation was selected as a measure for establishing the high and low cut-off points. This choice is based on the fact that the use of the probable error would eliminate only fifty per cent of the middle scores while the standard deviation would eliminate sixty-eight per cent of these scores. Consequently, the application of the P.E. provided many additional scores from which the two groups were selected. The P.E. was found to be 5. The formula for the P.E. was suggested by Guilford. (4) The cut-off points were established by using only those subjects whose scores fell above $+1$ PE and below -1 PE of the mean. Consequently, any scores falling above twenty-six ($+1$ PE) constituted the high hostile group and any scores falling below sixteen (-1 PE) constituted the low hostile group. In the former group there were forty-four subjects and in the latter group there were forty-nine subjects from which the groups of thirty subjects were selected. The arbitrary deleting of the middle group was not intended to force or distort the significance of the expected results but rather to select the extreme ends so as to sharpen the difference between

the groups to be tested thereby avoiding any overlapping which the writer felt would occur if the middle group was included.

The two groups were matched according to Race, Age, I.Q. and Education as shown in Table 1.

Table 1
Summated Variables of the
Two Groups of Subjects

Population Variables	Low Hostile	High Hostile
Race		
White	22	22
Negro	8	8
Age		
Mean	15.6	15.7
SD	11.1	9.1
Range	14-17	14-17
Education		
Mean	8.3	8.6
SD	1.3	.9
Range	6-10.5	7-10
I.Q.		
Mean	97	95.7
SD	9.6	11.5
Range	76-115	71-117

The CR's calculated for the age variable revealed no significant differences between the two groups ($t = .42$, $P = .54$). In addition, the CR's for the education variable indicated no significant differences in the mean of the two groups ($t = 1.04$, $P = .25$). Finally, the CR's revealed no significant differences in the mean I.Q.'s of the two groups ($t = .46$, $P = .53$). The I.Q. scores were obtained from the Revised Beta Examination. Subjects whose I.Q. scores fell within the mental defective range (sixty-nine or below) were not used in this study.

B. Material and Administration. The MAPS test material used in this study included forty-four figures and eleven background pictures consisting of the following: livingroom, street, medical, bathroom, bridge, bedroom, nursery, camp, closet, cemetery and shanty. The first six backgrounds were chosen because they are the cards most often used in routine testing. Three of the backgrounds (closet, cemetery and shanty) were selected because of their hostility pull. The remaining two backgrounds (nursery and camp) were selected arbitrarily to see if they would have any hostility pull. Hostile pull cards were suggested by Shneidman. (17 p. 19) The MAPS test was administered individually to both groups by one examiner who followed Shneidman's instructions for MAPS test administration. (17 p. 7)

C. Non-Verbal Signs. The three non-verbal signs which

are to be validated as measures of hostility consist of, a) Figure Number (FN), b) Figure Repetition (FR) and Figure Selection (FS). Figure Number is defined as, the average number of figures used per background. Figure Repetition is defined as, the total frequent use of each figure on all the backgrounds. Figure Selection is defined as, the total number of specific types (male, female, children and etc.) of figures chosen on all the backgrounds.

D. Design For Rating MAPS Figures. The rating of the sixty-seven MAPS test figures as hostile or non-hostile was deemed necessary in order to establish a finer measuring device for determining the differences in the non-verbal sign patterns of the two groups. With this purpose in mind, the sixty-seven figures were submitted to six independent judges, all of whom were psychologist. The following instructions were given to the six judges for rating the sixty-seven figures:

Here are sixty-seven different figures and what you are asked to do is to rate each figure separately as either hostile or non-hostile. The criteria for selecting a figure as hostile or non-hostile is to be based on any facial expression, gesture or postural position which would indicate to you hostility or non-hostility.

The ratings of the six judges are shown in Appendix L. The criterion for selecting the predominate rating assigned to each figure was based on that of generalized agreement among four or more of the judges. On the basis of this, sixty-two figures were found to

have sixty-seven per cent or more generalized agreement among the six judges. The remaining five figures (M-12, P-10, A-2, H-9 and L-6) were eliminated because of the low percentage of agreement among the six judges. Of the sixty-two figures, forty were rated non-hostile and twenty-two were rated hostile. In view of the wide difference in number between the non-hostile and hostile figures rated, the writer decided to equalize the number in each category by discarding eighteen of the forty non-hostile figures. This was done by selecting twenty-two of the forty non-hostile figures which had eighty-three or more per cent of agreement among the six judges. So for the purpose of this study only twenty-two hostile and twenty-two non-hostile figures will be used as shown in Appendix II.

E. Verbal Content Scoring. The verbal content was scored according to Stone's TAT Hostile-Aggressive Content Scale as applied to the MAPS test Stories. (19) Stone states that each response is considered individually and placed in one of the four categories and assigned the appropriate numerical value from zero to three. (19 p. 446) The numerical values and the description of the four categories is shown in Appendix III.

F. Manifest Hostility Scale. This scale is an objective test consisting of fifty true or false items most of which were drawn from the MMPI and judged to be indicative of manifest hos-

tility. The initial study undertaken with this scale attempted to determine the authoritarian personality's predisposition toward hostility. Two independent populations were used, one consisting of sixty male white university students and the other consisting of sixty male white veterans from a mental hygiene clinic. The P-scale score ranges for the high, middle and low groups for each of the two populations were obtained. Within each population there were twenty subjects in each of the three P-scale categories and these subjects were all tested with the Rorschach and the Manifest Hostility Scale. Discrepant results were obtained with the two hostility tests. However, the fact that the more authoritarian group obtained the highest MHS scores while the less authoritarian groups obtained the highest RCT-h scores suggest that, contrary to expectations, the groups may not differ as greatly in amount of hostility they possess, but instead may differ in their readiness to express their hostility. (18 p. 371)

The Manifest Hostility Scale was selected for use in this study because it is a fairly consistent measure of overt hostility. Besides, it is a relatively simple and quick scoring objective test which can be administered in a group setting.

G. Revision of Siegel's Manifest Hostility Scale. In a preliminary examination of Siegel's MHS, which was validated on an adult population, the writer detected many words and phrases which

would be difficult for the delinquent subjects to understand because of their limited vocabulary and low educational level. In order to avoid the possibility of invalidating the results of later testing, the author decided to conduct a random sample testing of new delinquent boys to determine whether or not the MHS was too difficult for this select population. A sample group of fifty boys with a wide range of intelligence were administered the MHS. The results indicated there were many words and phrases which the boys could not understand. In an effort to rectify this difficulty, the author made some modifications in the Siegel's MHS. These changes consisted of, a) substituting easier and more familiar words in the place of those found to be too difficult and b) shorten the long and complex phrases into more understandable ones. In both modifications, the original meaning of either the word or the phrase was not basically changed by the new replacement. The revised MHS is shown in Appendix IV.

In order to test the reliability of the revised form of the MHS, a test-retest reliability was undertaken. One hundred of the original two hundred subjects previously tested with the revised scale were retested four months later with the same revised scale. Sixteen of the one hundred subjects retested were eliminated because they either marked double answers or failed to answer all the questions. The remaining eighty-four subjects were

used to test reliability. A test-retest reliability of the eighty-four scores, using Pearson's Product Moment Coefficient of Correlation was found to be .81. The formula was suggested by Garrett.

(3) This reliability coefficient closely approximates Siegel's original reliability coefficient of .84. On the basis of the results obtained, the writer is justified in concluding that the revised form of the manifest hostility scale is reliable as a consistent measure of manifest hostility with delinquent boys.

H. Statistical Procedures. The data collected in this study were all of a frequency type. Hence, each non-verbal sign is treated as a discrete entity. The following statistical steps were employed to test the significance of differences in the three non-verbal signs in discriminating hostility among delinquent boys:

- a) The two groups were compared on the basis of the individual total differences found in each of the three non-verbal signs which each group contributed to the eleven backgrounds presented.
- b) The two groups were compared on the basis of the individual total verbal hostile content which each group contributed to all eleven background stories which they created.

The Chi Square test of homogeneity was used in the above statistical analysis. In the comparison between the difference scores, the one-tailed tests of significance were used. The .05 level of confidence was adopted as a criterion of significance. All differences significant at or beyond this level will be noted

in the Chi Square test.

CHAPTER IV

RESULTS AND DISCUSSION

In the preceding chapter, the statistical steps involved in the analysis of the data were outlined. The findings, relative to these analysis will be discussed in terms of the two proposed hypothesis adopted originally as the foci of this study.

A. Hypothesis I. The three MAPS test non-verbal signs will significantly distinguish between the high and low hostile delinquent groups in the following ways:

1) The high hostile group will average a smaller number of figures per background than the low hostile group.

In order to test this, the total average figure number score obtained by each of the thirty high and low hostile delinquent subjects were compared by selecting the median, then totaling the frequency scores above and below the median for the total group of sixty subjects. Appendix V shows the individual total figures and the individual average figure number for each of the thirty high and low hostile subjects. Table 2 shows the total group frequencies above and below the median along with the Chi-Square and the P value. The Chi-Square test of homogeneity using

a twofold table yielded a chi-square value of 1.68 (χ^2 corrected for continuity, 1 df) and a P value of .10. This P value is not significant because it fails to reach the .05 level of confidence established. Hence, we accept the hypothesis of no difference and we assume that the average figure number sign is not a significantly valid indicator of hostility among delinquent boys.

Table 2
Comparison of the Two Hostile Groups on
Frequency of Non-Verbal Average
Figure Number Responses

Group	Average Figure Number		χ^2	P
	Above Median	Below Median		
High Hostile	19	11	1.68	.10
Low Hostile	14	16		

* With 1 df, chi-square must reach 2.71 to be significant at .05 level.

2) The high hostile group will repeatedly use more hostile figures on all the backgrounds than the low hostile group.

In order to test this, the total number of hostile figures repeatedly used by each of the thirty subjects in the high and low hostile groups were compared by selecting the median, then totaling the frequency scores above and below the median for the total group of sixty subjects. Table 3 shows the total group fre-

Table 3
Comparison of the Two Hostile Groups on
Frequency of Non-Verbal Figure
Repetition Responses

Group	Figure Repetition		χ^2	P
	Above Median	Below Median		
High Hostile	16.5	13.5	.13	.37
Low Hostile	14.5	15.5		

* With 1 df, chi-square must reach 2.71 to be significant at .05 level.

quencies above and below the median along with the Chi-Square and the P value. Appendix VI shows the total hostile figure repetition for each of the thirty high and low hostile subjects. The results of the test of independence yielded no significant difference: chi-square equals 0.13 (χ^2 corrected for continuity, 1 df) and a P of .37. Again the hypothesis of nullity must be accepted with the assumption that the figure repetition sign is not significantly valid as a measure of hostility among delinquent boys.

3) The high hostile group will select more specific types of hostile figures on all the backgrounds than the low hostile group.

To test this, the total frequency for each of the three specific hostile type figures (male, female and children) selected by each of the thirty high and low hostile subjects were compared by obtaining the median for each of the three specific hostile type figures, then totaling the frequency scores above and below the median for each of the three specific figure types for the total group of sixty subjects. Appendix VII shows the individual total of the three specific hostile type figures for each of the thirty high and low hostile subjects. Table 4 shows the total group frequencies above and below the median for each of the three specific hostile type figures along with the Chi-Square and the P values. The Chi-Square test of homogeneity again revealed

no significant differences; Chi-square equals 2.26 for male figures, 2.14 for female figures and .34 for children figures (χ^2

Table 4

Comparison of the Two Hostile Groups on Frequency
of the Three Specific Hostile Types of Non-
Verbal Figure Selection Responses

Group	Specific Hostile Type Figures					
	Male		Female		Children	
	Above Median	Below Median	Above Median	Below Median	Above Median	Below Median
High Hostile	16.5	13.5	15.5	14.5	14	16
Low Hostile	10.5	19.5	10.5	19.5	13	17

* With 1 df, chi-square must reach 2.71 to be significant at .05 level.

corrected for continuity, 1 df) and the corresponding P values equal .07 for male figures, .08 for female figures and .27 for children figures. Hence we ~~reject~~ accept the null hypothesis of no difference, and we assume that the specific figure selection

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sign is not a significantly valid measure of hostility among delinquent boys.

The failure of the three non-verbal signs to demonstrate significant group differences even though some of these differences were in the predicated direction, raises the possibility that the Type II error is being committed by the researcher. That is, the hypothesis of no difference is accepted when in fact this is false. Perhaps the original arbitrary selection of the .05 level of confidence was too rigid a level to apply to such a refined and homogeneous groups used in this research. It seems probable that a comparison of two heterogeneous groups, such as a delinquent with a non-delinquent group, using these three non-verbal signs might yield group differences significant well beyond the .05 level of confidence. Whereas with the present extreme yet homogeneous groups compared in this study, a less rigid .10 level might be a more accurate indicator of group differences among delinquent boys.

B. Hypothesis II. The high hostile group will show a greater amount of verbal hostile content than the low hostile group on all the backgrounds.

To test this, the total individual verbal hostile content score obtained by each of the thirty high and low hostile subjects were compared by selecting the median, then totaling the

group frequencies above and below the median for the total group of sixty subjects. Appendix VIII shows the total verbal hostile content scores for each of the thirty high and low hostile subjects. Table 5 shows the total group frequencies above and below the median along with the Chi-Square and the P value. The Chi-

Table 5

Comparison of the Two Hostile Groups on Frequency
of Verbal Hostile Content Responses

Group	Verbal Hostile Content		χ^2	P
	Above Median	Below Median		
High Hostile	20	10	5.40	.01
Low Hostile	10	20		

square test of homogeneity using a twofold table yielded a chi-square equal to 5.40 (χ^2 corrected for continuity, 1 df). The P value is significant at the .01 level of confidence using a one-tailed test of significance. Hence, we reject the hypothesis of

no difference and assert that verbal hostile content is significantly valid discriminator of hostility among delinquent boys. The significant results obtained tend to substantiate other related findings which have indicated a high degree of correlation exist between manifest hostility and verbal content as measured by thematic projective techniques.

CHAPTER V

SUMMARY AND CONCLUSION

A. Procedure. This study was designed to validate the discriminatory powers of three non-verbal MAPS test signs, namely, Figure Number, Figure Repetition and Figure Selection, as indicators of hostility among delinquent boys. The subjects consisted of sixty male delinquent boys obtained from the Reception Depot of the Illinois Youth Commission. The two experimental groups were selected on the basis of high and low scores obtained on the Revised Manifest Hostility Scale. Subjects with hostility scores falling above and below established cut-off points were designated as high hostile and low hostile groups respectively. The two groups were matched according to Race, Age, Education and I.Q..

The MAPS test material consisted of forty-four test figures (twenty-two hostile and non-hostile) and eleven background scenes. Six backgrounds were chosen because they are the cards most often used in routine MAPS testing. Three were selected because of their hostility pull and the remaining two were added arbitrarily to see whether they would have any hostility pull.

A special system was designed for rating the sixty-

seven MAPS test figures in order to provide a finer measuring device for determining the differences in non-verbal sign patterns of the two groups. The sixty-seven figures were submitted to six independent judges, all of whom were psychologist, and they were asked to rate each figure either hostile or non-hostile. The criteria applied by the six judges for assigning these ratings was based on any expression, gesture or postural position which would indicate that the figures were hostile or non-hostile. The selection of the predominate rating for each of the sixty-seven figures was based on generalized agreement among four or more of the six judges. As a result, sixty-two figures rated either hostile or non-hostile were found to have sixty-seven or more per cent agreement among the six judges. Five figures were eliminated because of the low percentage of agreement among the judges. Of the sixty-two figures rated, forty were rated non-hostile and twenty-two were rated hostile. The difference in number between the non-hostile and hostile figures was equalized by discarding eighteen of the forty non-hostile figures on the basis of these figures having less than eighty-three per cent or more agreement among the six judges.

Since the verbal content of the stories between the hostile groups were to be compared, a method for scoring verbal content was needed. The "TAT Hostile-Aggressive Content Scale",

was adopted. The scoring system is based on a four point numerical values ranging from zero to three.

A revision of the Manifest Hostility Scale was undertaken after a random sampling of fifty boys revealed many words and phrases were too difficult for them to understand. The revision consisted of substituting easier and more familiar words in the place of the more difficult ones and shortening the long complex phrases into more comprehensible ones. A test-retest reliability of eighty-four scores, using Pearson's Product Moment Coefficient of Correlation was found to be .81. This closely approximates Siegel's original reliability coefficient of .84. On the basis of this, the revised MHS is adjudged reliable as a stable measure of manifest hostility among delinquent boys.

Two statistical steps were taken to compare the two groups on the basis of the three non-verbal signs and the verbal hostile content. First, the chi-square was employed to compare the groups in terms of the individual total differences found in each of the three non-verbal signs for each of the thirty high and low hostile subjects. Secondly, the chi-square was employed to compare the two groups on the basis of the individual total verbal hostile content which each member of the two groups contributed to the eleven background stories. The .05 level of confidence was adopted as the criterion of significance.

B. Results. Two hypothesis dealing with the discriminatory powers of three non-verbal signs and verbal hostile content with high and low hostile delinquent groups were tested. The analysis of the data revealed the following tenable findings: The three non-verbal MAPS test signs do not differ significantly between a high and low hostile delinquent groups at or below the .05 level of confidence. In some instances, the differences were in the predicated direction, indicating that perhaps differences do exist but not at such a rigid level of significance with such homogeneous groups. The verbal hostile content does differ significantly between the high and low hostile delinquent groups at the .01 level of confidence. The significant findings substantiates the hypothesis that high and low hostile group differences can be discriminated by verbal hostile content. These results also bear out other investigations which found a high correlation between manifest hostility and verbal hostile content as revealed by thematic projective techniques.

C. Conclusions. The following conclusions were tentatively formulated: The three non-verbal signs are not precise enough as instruments to discriminate between extremes within homogeneous groups, whereas they might be more accurate as measures of group differences with more heterogeneous groups. The possibility of committing a Type II error is greatly enhanced when the

arbitrary level of significance is much too rigid for measuring differences with even the extremes of the homogeneous groups used in this research. Another important factor is that the verbal content is sensitive to the manifest hostility variable as measured by thematic projective techniques, like the TAT and the MAPS test.

Finally, the tentative results obtained in this investigation suggest that further research is needed with populations of delinquents and non-delinquents in order to test the validity of these three non-verbal signs with heterogeneous groups.

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APPENDIX I

THE SIX JUDGES RATINGS OF THE SIXTY-SEVEN MAPS TEST FIGURES AND THE PERCENTAGE OF AGREEMENT

Figure Number	Judges						Predom- inate Rating	% of Agree- ment
	#1	#2	#3	#4	#5	#6		
M-1	NH	NH	NH	NH	NH	H	NH	83
M-2	NH	NH	NH	H	H	NH	NH	67
M-3	H	H	NH	NH	NH	NH	NH	67
M-4	H	H	H	H	H	H	H	100
M-5	H	H	H	NH	H	NH	H	67
M-6	H	H	H	H	H	H	H	100
M-7	H	H	NH	NH	H	H	H	67
M-8	NH	NH	H	H	NH	NH	NH	67
M-9	NH	NH	NH	NH	NH	NH	NH	100
M-10	NH	NH	NH	H	H	NH	NH	67
M-11	H	H	H	H	H	H	H	100
M-12	NH	H	H	NH	H	NH	*	50
M-13	H	H	H	NH	H	H	H	83
M-14	H	H	H	NH	H	NH	H	67
M-15	NH	NH	NH	NH	NH	NH	NH	100
M-16	H	H	H	NH	NH	H	H	67
M-17	NH	NH	NH	NH	NH	NH	NH	100
M-18	NH	NH	NH	NH	H	H	NH	67
M-19	H	H	H	H	NH	NH	H	67
P-1	NH	NH	NH	NH	NH	NH	NH	100
P-2	NH	NH	NH	NH	NH	NH	NH	100
P-3	NH	NH	H	NH	NH	NH	NH	83
P-4	NH	NH	NH	NH	H	NH	NH	83
P-5	H	H	H	H	H	H	H	100
P-6	NH	NH	NH	NH	H	H	NH	67
P-7	H	H	H	H	H	NH	H	83
P-8	H	H	H	H	H	H	H	100
P-9	NH	NH	H	NH	H	NH	NH	67
P-10	H	NH	H	NH	H	NH	*	50
P-11	H	H	H	H	H	NH	H	83

Figure Number	Judges						Predom- inate Rating	% of Agree- ment
	#1	#2	#3	#4	#5	#6		
A-1	NH	NH	NH	NH	H	NH	NH	83
A-2	H	H	NH	NH	H	NH	*	50
I-1	NH	H	NH	NH	H	NH	NH	67
I-2	NH	H	NH	NH	NH	NH	NH	83
S-1	NH	H	NH	NH	H	NH	NH	67
S-2	NH	NH	NH	NH	NH	NH	NH	100
S-3	NH	NH	NH	NH	NH	NH	NH	100
S-4	NH	NH	NH	NH	NH	NH	NH	100
S-5	NH	NH	NH	NH	NH	NH	NH	100
N-1	NH	NH	NH	NH	NH	NH	NH	100
N-2	NH	NH	NH	NH	H	NH	NH	83
N-3	NH	NH	NH	NH	NH	NH	NH	100
N-4	H	NH	H	H	H	NH	H	67
N-5	H	H	H	H	H	H	H	100
N-6	NH	NH	H	H	NH	NH	NH	67
N-7	NH	NH	H	NH	NH	NH	NH	83
N-8	H	NH	NH	H	NH	NH	NH	67
N-9	NH	NH	H	H	H	NH	*	50
N-10	NH	NH	H	H	NH	NH	NH	67
L-1	NH	NH	NH	NH	NH	NH	NH	100
L-2	H	H	H	NH	H	H	H	83
L-3	NH	NH	NH	NH	H	NH	NH	83
L-4	H	H	NH	H	H	NH	H	67
L-5	NH	H	NH	NH	H	NH	NH	67
L-6	H	H	NH	NH	H	NH	*	50
C-1	NH	NH	NH	NH	NH	H	NH	83
C-2	NH	NH	H	H	NH	NH	NH	67
C-3	NH	NH	NH	H	H	NH	NH	67
C-4	NH	NH	NH	NH	NH	NH	NH	100
C-5	NH	NH	NH	NH	NH	NH	NH	100
C-6	NH	NH	NH	NH	NH	NH	NH	100
C-7	H	H	NH	NH	NH	NH	NH	67
C-8	H	H	H	H	H	H	H	100
C-9	H	H	H	NH	H	H	H	83
C-10	H	H	H	H	H	H	H	100
C-11	H	NH	H	H	H	NH	H	67
C-12	H	H	H	H	H	NH	H	83

* These figures were eliminated because of the low percent of agreement among the six judges.

APPENDIX II

LIST AND DESCRIPTION OF THE FORTY-FOUR HOSTILE AND NON-HOSTILE FIGURES

Hostile Figures	Description
M-4	Military figure; right hand pointing down.
M-5	Policeman
M-6	Gangster; man with gun in hand.
M-7	Supine figure with blood spots.
M-11	Man with right fist raised.
M-13	Man with both hands folded in front of him.
M-14	Man with polka-dot necktie; eyebrows raised.
M-16	Older man with mustache; dressing gown; left fist raised.
M-19	Figure with back of right hand on hip; left arm extended; possibly effeminate.
F-5	Both hands to mouth.
F-7	Eyes wide open; eyebrows raised.
F-8	Left hand up; right hand holding book-like object.
F-11	Young woman in defensive position; left elbow in air.
N-4	Negress in business suit.
N-5	Negro zoot-suitor; with knife.
L-2	Pirate
L-4	Ghost
C-8	Boy with left fist raised.
C-9	Boy with left hand to eye.
C-10	Boy; both arms outstretched; bandage on left leg.
C-11	Boy; hands on chest; looking up.
C-12	Little boy; right hand extended.

Non-Hostile Figures

Description

M-2	Man undressing
M-9	Man with briefcase; coat over arm.
M-15	Man with right hand in pants pocket.
M-17	Rear view of man on haunches looking at picture.
P-1	Nude Female
P-2	Female undressing
P-3	Woman; both hands on left thigh.
P-4	Rear view; dress torn at left.
S-2	Man with blank face.
S-3	Woman with blank face.
S-4	Boy with blank face.
S-5	Girl with blank face.
N-1	Old man; negro; patched clothes.
N-2	Mammy-type negress; handkerchief.
N-3	Negro man reading paper.
N-7	Man with beard and skull cap.
L-1	King; 16th century costume.
L-3	Santa Claus
C-1	Sad girl; hands behind back.
C-4	Girl; rear view; running.
C-5	Nude girl
C-6	Nude boy

APPENDIX III

LIST AND DESCRIPTION OF THE TAT HOSTILE- AGGRESSIVE CONTENT SCALE

The following directions are to be used in scoring hostile-aggressive content on the TAT. Each response is to be considered individually and placed in one of the following four categories:

Category 0: Non-Aggressive Responses

Point rating: 0

This category consists of themes which are considered to be non-aggressive. They are responses which are not scorable in the other three categories.

Category 1: Verbal Hostile-Aggression

Point rating: 1

This category includes those stories in which hostility is displayed on a verbal level.

Category 2: Physical Hostile-Aggression

Point rating: 2

This category includes those responses involving physical assault, illness, bodily malformation, destruction to inanimate objects. The direction of the aggression (turned inward or outward) is not considered in the scoring. Arbitrarily, "Punishment" and "Fighting" themes are scored in this category.

Category 3: Death Concepts

Point rating: 3

This category includes those responses in which death is involved. Again, the direction of the aggression is not taken into account.

In some cases, the hostile-aggressive action of the story is implied or potential rather than active. In this case, a "P" (for Potential) is added to the category number, and the point score that would ordinarily be attributed to the category is cut in half.

APPENDIX IV

REVISED FORM OF THE MANIFEST HOSTILITY SCALE

1. I often find people jealous of my good ideas because they did not think of them first. (T)
2. I don't blame anyone for trying to grab everything he can get in this world. (T)
3. It is safer to trust nobody. (T)
4. I often tend to go out of my way to win a point with someone who has opposed me. (T)
5. I have very few arguments with members of my family. (F)
6. I think nearly anyone would tell a lie to keep out of trouble. (T)
7. I am easily defeated in an argument. (F)
8. I am not easily angered. (F)
9. When someone does me a wrong I feel I should pay him back if I can, just to get even. (T)
10. I sometimes stand in the way of people trying to do something, just for the heck of it. (T)
11. Some of my family have habits that bother and annoy me very much. (T)
12. I sometimes had to be rough with people who were rude or annoying. (T)
13. It is all right to get around the law if you don't actually break it. (T)
14. I like to poke fun at people. (T)
15. Someone has it in for me. (T)
16. I easily become impatient with people. (T)
17. I do not blame anyone for taking advantage of someone who ask for it. (T)
18. Most people are honest chiefly because they are afraid of being caught. (T)
19. I sometimes tease animals. (T)
20. I have often found people who have things fixed so they get credit for other's good works but are quick to pass mistakes off on them. (T)
21. Some people are so bossy that I feel like doing just the opposite of what they ask, even though I know they're right. (T)
22. I like to play practical jokes on others. (T)

23. I am often so annoyed when someone tries to get ahead of me in a line of people that I speak to him about it. (T)
24. I know who is responsible for most of my troubles. (T)
25. At times I have a strong urge to do something harmful or shocking. (T)
26. In school I was sometimes sent to the principal for messing up. (T)
27. I am often sorry because I am so cross and angry. (F)
28. I often feel irritable. (T)
29. I am sure I get a raw deal from life. (T)
30. At times I feel like smashing things. (T)
31. I get angry sometimes. (T)
32. In school my grades in conduct were quite regularly bad. (T)
33. I think most people would lie to get ahead. (T)
34. Sometimes I feel as if I must injure either myself or someone else. (T)
35. If people had not had it in for me I would have been much more successful. (T)
36. I believe I am being followed. (T)
37. I never have fits of anger. (T)
38. I believe somebody is out to get me. (T)
39. Someone has been trying to rob me. (T)
40. I have no enemies who really want to harm me. (F)
41. I try not to hide my poor opinion or pity of a person so he won't know how I feel. (T)
42. I am often accused of being a hothead. (T)
43. I often wonder what hidden reason another person has for doing something nice for me. (T)
44. I get mad easily and then get over it soon. (T)
45. At times I feel like picking a fist fight with someone. (T)
46. Sometimes I enjoy hurting people I love. (T)
47. I can easily make other people afraid of me, and sometimes do just for the fun of it. (T)
48. Horses that don't pull should be beaten or kicked. (T)
49. Most people make friends because friends are likely to be useful to them. (T)
50. There are certain people I dislike so much that I am glad that they are catching it for something they have done. (T)

APPENDIX V

TABULATION OF THE INDIVIDUAL TOTAL AND AVERAGE FIGURE NUMBER FOR THE TWO HOSTILE GROUPS

High Hostile Group		Low Hostile Group	
Total Figure Number	Average Figure Number	Total Figure Number	Average Figure Number
23	2.0	18	1.6
28	2.5	16	1.4
34	3.3	31	2.8
27	2.4	30	2.7
14	1.3	30	2.7
23	2.0	19	1.7
16	1.4	25	2.2
21	1.9	30	2.7
16	1.4	18	1.6
36	3.3	13	1.2
18	1.6	14	1.3
22	2.0	45	4.1
26	2.3	31	2.8
25	2.2	13	1.2
41	3.7	16	1.4
30	2.7	21	1.9
22	2.0	27	2.4
21	1.9	15	1.4
26	2.3	31	2.8
24	2.2	13	1.2
20	1.8	17	1.5
30	2.7	28	2.5
13	1.2	23	2.0
31	2.8	32	3.0
22	2.0	22	2.0
23	2.1	22	2.0
22	2.0	18	1.6
27	2.4	17	1.5
23	2.1	24	2.2
30	2.7	22	2.0

APPENDIX VI

TABULATION OF THE INDIVIDUAL TOTAL HOSTILE FIGURE REPETITION FOR THE TWO GROUPS

High Hostile

17
18
22
15
9
14
9
10
7
19
0
11
15
16
20
17
14
12
10
11
13
23
5
17
13
12
15
20
10
13

Low Hostile

8
8
20
9
17
9
16
19
9
5
10
20
16
6
7
16
16
8
18
6
9
19
10
14
18
12
8
9
15
13

APPENDIX VII

TABULATION OF THE INDIVIDUAL TOTAL SCORES FOR THE THREE SPECIFIC HOSTILE TYPE FIGURES SELECTED BY TWO GROUPS

APPENDIX VIII

TABULATION OF THE INDIVIDUAL TOTAL VERBAL HOSTILE CONTENT SCORES FOR THE TWO GROUPS

High Hostile

12.5
19
18.5
25
9.5
15
15
16
12
20.5
22
14
10
19
29
15.5
18
12
17
16.5
13
27
13
16.5
15.5
21
16.5
24.5
14
6

Low Hostile

6.5
7
7
12
18.5
16
10
14
12
6
17.5
10
11
6.5
13
25
18
19
9.5
22.5
4
6
7
16
21.5
14.5
13
11
15
14

APPROVAL SHEET

The thesis submitted by Basil Edward Najjar has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

May 19, 1958
Date

Frank Kofler
Signature of Adviser