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Epinephrine Induced Experimental Medical Aortopathy and Its Pathogenesis

Donal D. O'Sullivan
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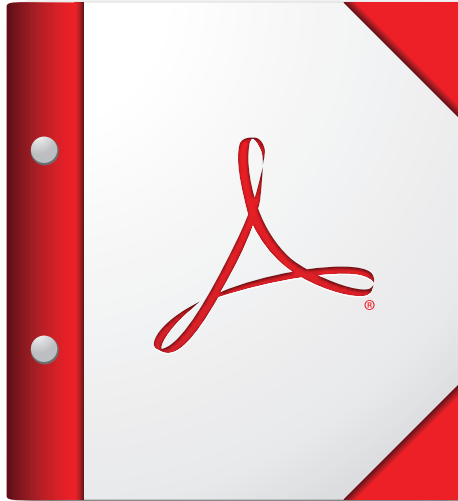
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PERSONALITY DIFFERENCES BETWEEN SOCIALLY MALADJUSTED
AND SOCIALLY ADJUSTED NEGRO BOYS, AS INDICATED
BY THE RORSCHACH AND TAT TECHNIQUES

by

Norman C. Kerr, Jr.

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Doctor of Philosophy

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LIFE

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CHAPTER I

INTRODUCTION: STATEMENT OF THE PROBLEM

In the past ten years the problem of maladjusted behavior on the part of Negro youth has assumed serious proportions. Although Negro families make up approximately ten percent of the entire population of the United States Negro Juveniles reportedly contribute almost 20 percent to the total delinquency rate (Block & Flynn, 1956). In a survey of delinquency areas in Chicago (Ehlers, 1955, P 180) the rate of delinquency in the Negro area was found to be eight times that in the rest of the city.

A recent survey made by the writer in the Chicago Public Schools revealed the fact that the majority of pupils, approximately 75 percent, transferred to the two social adjustment schools and their branches because of serious conduct problems were Negroes. Since Negro children have been estimated as making up approximately one-third of the public school population (Rich, 1957) their assignment to the social adjustment schools represents a highly disproportionate ratio.

Various theories have been offered in efforts to account for the high rate of social maladjustment among Negro youth. Some theorists have asserted that this group possesses certain inherent attitudes or traits which lead to maladaptive behaviour (Burlingame, 1940). Other theorists have asserted that the behavior problems of Negroes merely reflect the cultural, social and economic

disadvantages under which they generally live. For example, Block and Flynn (1956, P 45) wrote the following: "It is almost wholly a consequence of the barrier to adjustment on social, cultural and economic levels placed in their way and the ecological concentration and cultural segregation they experience ...". Perhaps due to the almost total acceptance of the latter theory, Negro children have virtually been excluded from systematic psychological research concerned with the problem of the socially maladjusted juvenile. However, it is an undeniable fact that there are Negro children, who though handicapped by home background, area of residence, discrimination by reason of race, deviant companions and the many other hypothetical causes of social maladjustment manage to steer a course away from antisocial behavior and to function in a socially adjusted and conforming fashion. This fact cannot be ignored. It suggests that to merely attribute a Negro child's misbehavior to cultural and economic disadvantages is scientifically without value until it is determined how often a well-behaved Negro child is faced with similar disadvantages. It also suggests that in the search for causes attention must be focused on influences other than those that are social, cultural and economic.

One recent hypothesis is that there must be within the socially maladjusted child certain personality qualities which lead him to respond to frustrating conditions with maladaptive behavior and that these qualities of personality are different from those of the child, who though confronted by identical handicaps manages to make an adequate social adjustment (Knaraceus, 1945, P 121). The present study was designed to test out this basic hypothesis.

Before proceeding further, the writer should define the concepts of social maladjustment and social adjustment as used in the present study.

For the purposes of this research the term social maladjustment refers to Negro public school pupils who have school histories of conduct problems such as, fighting, destructiveness, stealing, truancy, cruelty, unruliness, bullying and assault which necessitated their removal from a regular public school and placement in a social adjustment school. The pupils in this group can be considered as predelinquents. Juvenile delinquents, i.e., those on whom the Juvenile Court has passed sentence, were not included in the present study.

The term social adjustment is confined to those Negro pupils who are free from conduct problems discernible to their school and who are well-adjusted socially according to their classroom teachers.

The primary question asked in the present study is the following: What is the difference between the personality of a Negro child transferred from a regular public school to a social adjustment school because of overt behavior problems and the personality of a Negro child attending a regular public school who is free from overt behavior problems? If that difference can be clearly demonstrated, school psychologists, knowing the deviant factors in the personality of the maladjusted child may be better able to identify the pupil who is prone or vulnerable to the development of undesirable behavior patterns without waiting for the actual appearance of serious misconduct. Likewise, educators, knowing the important indicators of the qualities of personality in which the socially adjusted and socially maladjusted differ may be able to develop more effective remedial programs for the behavior deviate.

With the foregoing aims in view reliance has been placed on the following two projective techniques: The Rorschach Ink Blot Test and the Thematic Apperception Test. To the writer's knowledge neither of these two projective

methods has been employed, either jointly or independently, to determine whether a group of socially maladjusted Negro children can be differentiated from an equivalent group of socially adjusted Negro children. Because of this lack of scientific information, the following question can be raised: Can the two criterion groups in this study be differentiated in terms of their Rorschach and TAT responses?

In the evaluation of the Rorschach and the TAT results conventional statistical methods as well as a new statistical method of pattern analysis (Rimoldi & Grib, 1959) will be utilized. The latter method is being used in this study because it lends itself to the handling of patterns of interrelated scores. Conventional statistical methods do not cope with patterns but rather with one score at a time through a range of variation. Since the full meaning of the results on such tests as the Rorschach can be understood only through study of interrelated patterns of scores the use of a statistical method which can cope with such score patterns is of crucial importance in terms of the present study.

Considering the Rorschach technique first, almost all previous research has been concerned with quantitative comparisons of various single scores rather than with patterns of interrelated scores. As a consequence there are a lack of published data involving the pattern analysis of Rorschach scores which would serve as a basis of comparison with the results of the present study. It was therefore decided that the specific Rorschach hypotheses under test in this study would be based on comparisons of single scores (such as D, M, H, etc.).

In spite of the limited value of working with isolated Rorschach scores it was felt that such a single variable approach would serve the following purposes:

first, the scores could be compared one by one with scores reported in related Rorschach research involving socially maladjusted or delinquent children contrasted with normal controls; and second, the trends, if any, shown by these scores could raise questions regarding their significance, which, in turn, may serve as the basis for future Rorschach research.

The first hypothesis defined for testing was that the socially adjusted pupils would exceed the socially maladjusted pupils to a statistically significant degree with regard to the psychological qualities symbolized by any one of the following variables: R, D, M, FM, FK, Fc, FC, F%, H, and P.

The second hypothesis under test was that the socially maladjusted pupils would exceed the socially adjusted pupils to a statistically significant degree with regard to the psychological qualities symbolized by any one of the following variables: W, Dd, n, CF, C, Sum C, F%, FC and A%.

The rationale for the foregoing hypotheses was based on trends shown by the Rorschach scores of two white groups of pupils (Robbertse, 1955) one socially maladjusted and the other a control group.

The TAT responses of the two groups will be considered only in relation to a secondary concern of this investigation. This concern is with the problem of the relationship of hostile aggressive behavior to aggressive content in projective protocols. Since the Rorschach is also thought to give indications of the nature and possible intensity of aggression its contentual aspects will be evaluated along with but independent of the TAT themes.

The problem of aggression is of concern in this study because it is the variable which is assumed to be involved in the behavior of the two criterion groups. The assumption is that the socially maladjusted boys were confined to

a correctional school because of their overt hostile aggression while the adjusted pupils were not confined because they were either less aggressive or handled their hostile-aggressive inclinations in a different manner.

As a basis for formulating specific hypotheses various research studies concerned with the problem of the relationship between overt aggression and test aggression were reviewed. The writer found no experimental studies involving Negro children. Studies comparing maladjusted white children with normal controls were found to be not only scarce but contradictory in their results. However, in one of the few studies designed to determine what the TAT differences were between abnormal and normal groups of white boys (Cox & Sargent, 1950), trends were revealed by the data which seemed significant enough to serve as a basis for the specific hypotheses of the present study. One of the significant findings of Cox and Sargent's research was that the normal group displayed significantly more aggression in their TAT stories than the emotionally disturbed group.

In accordance with the trends found in the foregoing investigation, the following specific hypothesis was formulated for testing in the present study: the socially maladjusted Negro pupils will show significantly lower levels of hostile content in their TAT and /or/ Rorschach protocols than will the socially adjusted group of pupils.

If the above hypothesis is confirmed it would suggest that the chief difference between the two groups is in terms of the manner with which they handle their aggressive inclinations rather than in terms of the intensity of the aggression itself. In other words, the aggressive inclinations of the maladjusted pupils tend to break out on an overt action level while the

socially adjusted pupils' aggressions tend to be expressed in fantasy.

Finally, since the Rorschach and TAT are being used together it was decided to examine the possible association between these tests with regard to the variable of aggression. The specific hypothesis under test was that those pupils (of both groups) who obtain higher levels of hostile content on the Rorschach will similarly obtain higher levels of hostile content on the TAT.

The recently devised content hostility rating scales of Hafner and Kaplan (1960) were selected for the quantitative measurement of the hostile content in the Rorschach and TAT protocols.

In summary then, this research was undertaken for the purpose of obtaining an insight into the psychological differences between socially maladjusted Negro pupils and an equivalent group of socially adjusted Negro pupils, as indicated by the Rorschach and TAT techniques.

CHAPTER II

REVIEW OF THE LITERATURE

In reviewing the literature on the use of the Rorschach and TAT methods with preadolescents and adolescents the writer found no studies concerned with personality differences between normal and maladjusted Negro children of similar age, intelligence and cultural background. This is unfortunate since it permits no sound generalizations about the comparative personality qualities of different groups of Negro children. Recent research studies have indicated that the interpretation of a child's responses to the Rorschach and TAT techniques must take account of the cultural and racial factors in his background. For example, Fiedler and Stone (1956) demonstrated the pronounced effect of socio-economic status on Rorschach norms. In investigating the differences between the contents of the TAT stories of Negro and white children Mussen (1953) found significant differences in the fantasy productions of the two groups. He concluded that since Negro and white children grow up in different social milieux and consequently are subjected to different social pressures, their responses to projective materials are not directly comparable. However, there have been recent studies of white groups of children who were homogeneous with regard to sociocultural and situational criteria but who differed with respect to certain adjustment criteria. By far the greatest number of such studies of contrasted groups dealt with delinquency. The most pertinent of these studies, in terms of their relation to the present investigation will be discussed in this chapter.

One of the most relevant studies using the Rorschach test with socially maladjusted and socially adjusted children was undertaken by Robbertse (1955). The aim of this investigation was to apply the Rorschach to two groups of European children attending the public schools in Pretoria, South Africa. The first group consisted of a hundred socially maladjusted pupils between the ages of 10-13 years who had displayed behavior problems such as stealing, truancy, fighting, teasing, vagrancy, assault and arson. The second was a control group, corresponding in age and constituting a representative sample of school children in Pretoria, a city with a population of about 160,000.

By comparing the different facets of the pupils' personality structure as shown by the Rorschach an attempt was made to obtain insight into the psychological make-up of the socially maladjusted pupils. Robbertse attempted this, however, by limiting the statistical treatment to an atomistic analysis of each Rorschach variable. No effort was made to cope with the pattern of variables. Content analysis was limited to only three categories. Nevertheless, statistically significant differences were ascertained between the two groups of subjects with regard to a number of single Rorschach variables. The control group was found to surpass the experimental group to a statistically significant degree with regard to D, M, and F+%. The control group also gave slightly higher averages for R, FM, FC, FK, Fc, P, and H but these differences were not statistically significant. On the other hand, the experimental group was found to exceed the control group to a statistically significant degree with regard to CF, C, Sum C, and F%. The averages for W, Dd, m, C and A% responses were slightly higher for the experimental group but not to a statistically significant degree.

The most impressive, though only partially related, study using the Rorschach test in distinguishing between delinquents and matched controls was carried out by Schachtel (1951). The investigation was initiated by Glueck and Glueck (1950), in a large-scale study of 500 delinquents and 500 matched controls. The Rorschach tests were administered by the psychologists attached to the staff of the research study but were not interpreted by them. Instead the protocols were forwarded to Schachtel without identifying which were those of the delinquents and which were those of the non-delinquents. Nevertheless he succeeded in arriving at a correct judgment as to whether the subject was delinquent or not in 67 percent of the cases. Only 7 percent of his judgments were incorrect while in 26 percent of the cases the Rorschach protocols failed to provide adequate material for judgment. Schachtel's statistical presentations were limited to mean scores for a number of the discrete variables (e.g., R, Dd, S, M, M and C) and to a few total frequency distributions of scores. He found that the nondelinquents gave higher R and higher Dd%, as well as higher M and M4 (FM m) scores. In the color range more delinquents had CF C scores than nondelinquents. Although Schachtel considered these differences significant he used no precise statistical techniques to determine the range of the sampling error. Instead he used the term "significant" where inspection showed the numerical results of the two groups to be so discrepant that they seemed obviously statistically significant.

More important to Schachtel than statistical analysis of the results, however, was his use of a checklist of 54 psychological traits that could be scored by means of the Rorschach technique. He found that the delinquents, as a group, were significantly more assertive, defiant and ambivalent to authority; that

they were more resentful of others and far more hostile, suspicious and destructive than the nondelinquents. He also found the delinquents to be considerably less cooperative with and dependent upon others and markedly less conventional in their ideas, feelings and behavior. Although Schachtel's research is by far the most impressive of all studies which have used the Rorschach with contrasted groups his results and conclusions are open to serious question. As indicated earlier his statistical analysis of the Rorschach protocols was inadequate. In consequence, we do not know whether the observed differences which he found were within the range which could easily occur by chance or whether they represented real differences. Another crucial weakness was that his personal clinical experience and intuition entered into his final diagnostic judgments of the Rorschach protocols to the degree that it is unlikely that his findings could be duplicated by other competent investigators.

But this may be reality - people reflect + react to their world as in psychics
 Although there have been a few other Rorschach studies involving the comparison of delinquents with normal controls (e.g., Boynton & Wadsworth, 1943; Corlow, Zimet & Fine, 1952) these investigations failed to define adequately the crucial characteristics and distinctions of their groups. In addition, the groups were compared on only a few Rorschach variables. Other Rorschach studies on delinquent groups used no nondelinquent controls but instead simply contrasted their findings with the published norms of Rorschach manuals.

TAT studies involving the comparison of delinquent and non-delinquent groups have been very scarce. In a review of the Psychological Abstracts from 1948 to 1961 the writer found very few studies concerned with TAT comparisons of delinquent and non-delinquent groups. One recent investigation (Nishimura, 1958) involved the comparison of Japanese juvenile delinquents with Japanese

nondelinquents. The purpose of the study was to determine the psychological distinctions between the two groups, as indicated by the TAT. According to the investigator, rejection of parents and other family problems were projected more frequently by the delinquent group. In addition, descriptions of the sexual activities of parents or siblings appeared directly on some of the cards among the delinquent group. This rarely occurred among the normal controls. Unfortunately there was no mention of the frame of reference used for the TAT analysis.

There have been many TAT studies, however, involving the comparison of groups other than delinquents and nondelinquents. For instance, the TAT technique has been used to compare emotionally stable and unstable children (Cox & Sargent, 1950), college students and state prison inmates (Fry, 1952), college boxers and wrestlers (Husman, 1955), white and Negro boys (Mussen, 1953), naval offenders and nonoffenders (Petrauskas, 1958), school achievers and non-achievers (Snider, 1953) and assaultive and nonassaultive army prisoners (Stone, 1956).

The most relevant of the above mentioned studies, in terms of serving as a basis of comparison with the present investigation, was the one undertaken by Cox and Sargent (1950). One of the major purposes of the latter study was to determine what differences existed between the TAT responses of "stable" and "disturbed" children who were otherwise homogeneous with respect to race, sex, age, intelligence, school grade and socio-economic background. The group classified as "emotionally disturbed" consisted of 15 white boys in the seventh grade in a public school in Evanston, Illinois. They were considered emotionally disturbed because they had received attention from either a psychologist, social

worker or psychiatrist. The group classified as "emotionally stable" consisted of 15 white boys in the seventh grade of the same school who had no past record of treatment by either a psychologist, social worker or psychiatrist. After administering ten TAT cards (1,2,4,5,10,11,14,15,19,20) on a group basis, the responses of all the boys were evaluated by means of a modified version of Murray's system (1943). The main categories used were feelings, heroes, needs, threats, actions, and outcomes. The reliability of the scoring scheme was estimated by correlating the examiner's scoring with the averages of seven judges.

One of the most pertinent findings of this study was that the emotionally stable group wrote significantly more stories than the emotionally disturbed group which contained expressions of hate, aggression, frustration, death, disaster, anxiety, depression, and domination. On the other hand, the emotionally disturbed group wrote significantly more stories which contained no identifiable expressions of hate, aggression, frustration, death, disaster, anxiety, depression and domination. In general, the stories of the stable group expressed significantly more actions of all kinds while the disturbed group's stories showed greater constriction and less spontaneity.

In another phase of this research the stories of the boys were submitted to a number of clinical psychologists without informing them as to which stories were those of the disturbed group and which were not from that group. The aim was to discover to what extent the clinicians could distinguish the emotionally disturbed boys from the stable ones on the basis of a blind analysis of their TAT stories. According to the results the clinicians showed a rather striking error in judgment. It appeared that their judgments were based on the assumption that a positive relationship existed between "pathological" TAT stories and

emotional disturbance. The authors concluded that their study demonstrated a need for objective normative data as a basis for interpretation and indicated that error may result from uncritical generalization from pathological material alone.

The foregoing research can be criticized on several grounds. For instance, the population selected for study was very small, being limited to intra-school comparison between 15 well adjusted and 15 poorly adjusting white boys. More important, the crucial psychological distinctions between the boys were not defined adequately or made explicit in advance of the testing. Therefore the TAT differences found between the groups can not be considered as crucial criteria against which various interpretative hypotheses pertaining to TAT stories may be tested. The Murray system which was used for analysis of the stories can also be criticized since the assumptions on which the system rest have not been validated.

In spite of the foregoing limitations, one of the trends shown by Cox and Sargent's findings seemed significant enough to serve as a frame of reference for one of the specific hypotheses of this study. This trend was that the hostile aggression which appeared in the TAT stories did not seem to have a counterpart in real life.

As indicated previously, rating scales for the quantitative measurement of hostile aggression have been selected for use in the present study. A brief resume and evaluation of some of these rating scales will now be given.

Elizor (1949) was the first investigator to develop a rating scale for scoring content hostility on the Rorschach. His basic theory was that hostility and anxiety operate as "systems of tension" within the individual. He further

assumed that hostile and anxiety tensions are expressed in the sphere of perception. Therefore reactions to the Rorschach cards should provide clues to the intensity of these inner tensions. Using a simple scoring method he found hostile content in Rorschach protocols to be negatively related to overt hostility among matched groups of adult neurotics and controls.

Although Elizor's findings were considered generally congruent with outside criteria derived from questionnaires, self-ratings, and interviews his study can be criticized on several grounds. First, his concept of "systems of tension" was based on a general theory propounded by Lewin (1935) which itself has not been adequately verified. Second, with regard to his rating scale, responses were apparently classified as representing either anxiety or hostility in terms of preconceived notions based on Lewin's personality theory. Third, weightings were apparently assigned to different types of responses in terms of degrees of hostility and anxiety without corroboration from other sources. Despite these weaknesses, however, his study served to test a number of hypotheses commonly employed in content interpretation of the Rorschach. In addition, his research apparently stimulated other investigators to develop new scales to test the hypothesis that a relationship exists between hostile aggressive behavior and aggressive content on the Rorschach and TAT.

Since Elizor's work scoring systems for hostile content on the Rorschach and /or/ TAT have been developed by Walker (1951), Stone (1953), Fine (1955), Gluck (1955), Murstein (1956), and Hafner and Kaplan (1960). These scales have been employed by their authors as well as by other investigators (e.g., Davids, et al., 1955; Feshbach, 1955; Gorlow, et. al., 1952; Jensen, 1957; Kagan, 1958; Mussen & Naylor, 1954; Purcell, 1956; Sanders & Cleveland, 1953) with

conflicting results. Some studies (e.g. Purcell, 1956; Smith & Coleman, 1956) found hostility scores positively correlated to overt aggressive while other studies (e.g., Elizer, 1949; Sanders & Cleveland, 1953) found hostile content scores to be negatively related to overt aggressive behavior. Earlier investigators, for example Murray (1938) and Symonds (1950) who used qualitative methods of analysis of hostile content found no relationship between overt hostility and fantasy aggression.

These contradictory experimental findings concerning the relationship between overt hostility and hostile content on the Rorschach have been ably summarized by Bassilious (1961). According to the latter, the numerous studies have yielded conflicting findings because of differences in theory and in the adequacy and relative validity of the rating scales. In addition there have been marked differences in the age, sex, race, and social class level of the subjects as well as a lack of comparative data with normal controls.

In a related article (Davids & Oliver, 1960) concerned with this problem the point was made that because of marked differences between groups of subjects it is not possible to generalize from one group of subjects to another. Therefore it may be necessary to formulate entirely different hypotheses about relations between overt hostility and hostile content in projective protocols depending upon the types of subjects being studied.

With regard to the rating scales there have been many specific criticisms. According to Hafner and Kaplan (1960) rating scales have yielded doubtful or conflicting findings because of the arbitrary manner in which they have been constructed. Criteria for scoring have been ill defined and weightings have been assigned to different types of hostile content on a theoretical basis and

without corroboration from other sources. Even when weightings have been assigned on the basis of judges' ratings the number of judges involved has been relatively small. The authors also raised the question as to how appropriately certain responses could be said to be hostile in nature.

In an effort to overcome the foregoing shortcomings of previously developed scales Hafner and Kaplan devised new Rorschach and TAT hostility content scales. Their procedure consisted of listing 200 Rorschach responses thought to be hostile in nature and 100 TAT themes also considered hostile in nature. These lists were submitted to eight experienced clinical psychologists who were asked to independently rank each of the Rorschach and TAT responses in terms of their degree of hostile contents. The judges also sorted the responses into three groups of overt, covert or no hostility. Overt hostility was defined as that hostility which is manifest and direct. Covert hostility was defined as that hostility which is insidious, indirect, disguised or latent. All interjudge correlations were found to be positive and significant.

The Rorschach and TAT were then administered to 30 psychiatric patients who had a diagnoses of neurosis, psychosis or character disorder. Their responses were evaluated by means of the rating scales. The authors concluded that while a significant relationship existed between hostility derived from test protocols and behavioral manifestations of hostility there was an inconsistency in the way in which a person responded to the Rorschach and TAT in regard to hostility. They suggested the need to further our understanding of the relationship between test behavior and other behavioral manifestations of hostility.

Although the scales of Hafner and Kaplan appear to be more carefully constructed than previously developed scales the basic question concerning their

validity remains unanswered. For example, the fact that eight experienced clinical psychologists independently ranked each of the Rorschach and TAT responses similarly in terms of their degree of hostile content is not explicit validity evidence that the responses are actually hostile. However, the consistency of the rankings of the eight judges does provide relatively stable hypotheses which can be tested against various outside criteria.

Another significant weakness of Hafner and Kaplan's work in validating the rating scales was that they employed only abnormal groups. Comparative data with a control group of normals were therefore lacking. Moreover, the crucial psychological distinctions between their abnormal subjects were not made explicit except for indicating that these subjects had psychiatric diagnoses of neurosis, psychosis, or character disorder. The latter psychiatric classifications can not be considered crucial since it is a recognized fact that the bases of such classification vary considerably from one psychiatric setting to another. In addition, psychiatric diagnostic groupings tend to shade into each other with much overlapping.

The relative merits of Hafner and Kaplan's rating scales appear to be the following: Most important they display objectivity of application. That is, the scales are objectively structured to the degree that it is unlikely that the opinion of the scorer would influence the results. More specifically, the responses or descriptive statements in the scales are written in clear, simple and unambiguous language. This allows for easy and accurate comparison of the test responses with the responses included in the rating scales. Finally the responses and descriptive statements in the scales are rated on a graduated basis and treated numerically. It is thus possible to apply statistical methods

to the final numerical ratings with relative ease.

After considering the merits and weaknesses of Hafner and Kaplan's scales in comparison with earlier developed rating scales it was decided that the former would best serve the purposes of the present study.

It is important to recall at this point that the present study hypothesized that a negative relation existed between overt aggression on the part of Negro boys and levels of aggressive content in their Rorschach and TAT protocols. In contrast, Hafner and Kaplan found a low positive relationship between overt aggression in behavior and aggressive content on the Rorschach and TAT. One of the reasons for the difference between the hypothesis of this study and the actual results of Hafner and Kaplan's research is that the groups of subjects included in the two studies are not directly comparable. As indicated, Hafner and Kaplan employed white adults grouped on the basis of psychiatric disorders. The present study involves the comparison of Negro groups of boys who apparently differ only in terms of their overt behavior.

In considering the foregoing review of the literature in relation to the present study several major differences have been noted. First, this research differs in terms of the types of subjects being studied. To the writer's knowledge no other Rorschach or TAT study has attempted to compare the test responses of two equivalent Negro groups of boys. Second, this investigation has utilized a new type of scoring procedure for the description and comparison of test response patterns. The major advantage of this statistical technique over conventional statistical methods is that it provides a method of coping with response patterns in a way approximating clinical pattern interpretation. The

result should be that research on problems such as social maladjustment is facilitated. Finally the present study should provide new insights into the problem of the relationship between aggressive fantasy and reality behavior among lower class Negro children.

CHAPTER III

DESIGN OF THE RESEARCH

As indicated earlier, the term "social maladjustment" has been confined for the purposes of this study to public school pupils who have school histories of some form of aggressive acting-out behavior which necessitated their removal from a regular public school and placement in the controlled setting of a social adjustment school. The term "social adjustment" has been limited to public school pupils who have been free from any form of detrimental conduct and who have been well-adjusted socially according to school records and the ratings of their classroom teachers.

It has been stated previously that Negro children were chosen as subjects for the two criterion groups because earlier research findings (e.g., Davis, 1947; Klineberg, 1935; Mussen, 1953) suggested that racial derivation and associated culture patterns must be considered in accounting for variations in behavior patterns.

The other variables, beside racial origin, that have been held constant in this study were age, mental ability, sex, socio-economic level and religious affiliation. With regard to age, the 10-13 age bracket was chosen because recent statistics have indicated that children in this age range represent the threshold age group for entry into delinquency (Block & Flynn, 1956). As to intelligence, it has been asserted that a correlation exists between varieties of behavior and intellectual levels (Kvaraceus, 1956). For this reason the

pupils included in the present study were limited to those who scored between dull-normal and average (I.Q.'s ranging from 80 to 112) on standard intelligence tests. The variable of sex was held constant because it has been asserted that tendencies toward certain types of misbehavior vary according to sex (Kuaraceus, 1954). For this investigation only boys were chosen. As far as social-economic level is concerned, there has been considerable claim (Davis, 1947; Fiedler & Stone, 1956) that social maladjustment bears an intimate relationship to levels of culture and economic attainment. With this assertion in mind the Negro boys chosen as members of the criterion groups in this study belonged to the "lower-lower" socio-economic group, according to the Warner Index Status (Warner, et al., 1949). Finally, it was decided to limit the membership of the criterion groups to those whose religious affiliation was Protestant since an examination of the school record data of the Negro pupils indicated that almost all of them claimed an affiliation with some Protestant church.

Subjects and Procedure

The Moseley Social Adjustment School was chosen as the site for the selection of the maladjusted group because the writer was serving there as a school psychologist on a twice a week basis. The boys attending Moseley School had been transferred there from regular schools because of repeated acts of misconduct such as fighting, stealing, destructiveness, bullying, cruelty, truancy, and assault.

There were 322 Negro boys in the elementary division at Moseley School when this research was undertaken. Out of this total there were, according to school records, 81 pupils who met the age criterion for this study, i.e., they

were between the ages of 10 and 13 years inclusive. The cumulative records as well as the School Problem Reports on each of these pupils were studied by this investigator.

Intelligence test results were available in the records of each boy. In all cases at least two and sometimes three intelligence test scores for the Kuhlmann-Anderson Test were recorded. Boys found not to have suitable intelligence quotients to warrant inclusion in the experimental group were eliminated immediately. In cases where the I.Q. scores were above 80 but deviated more than five points from each other this investigator administered the Stanford Binet Scale. For example, in one instance two Kuhlmann-Anderson Tests given within two years of each other produced I.Q.'s of 81 and 95 respectively. The Binet Scale was then given yielding an I.Q. of 97. This score was accepted as representative of the boy's ability. This occurred in seven other instances. In other cases where the I.Q. scores checked within five points of each other the most recent score was used as the criterion for selection.

Out of the total of eighty-one pupils, forty-one cases were found that appeared to have suitable intelligence quotients to warrant inclusion in the mal-adjusted group. Further selection was made from among these pupils by choosing those who were most recently assigned to the social adjustment school. This was not considered a crucial criterion in differentiating between the boys, however, because the atmosphere of the school is not therapeutic in the sense of attempting to alter the personality structure of the boys, but, rather, it is restrictive and repressive. As to the length of time spent at the school, almost all of the boys in the elementary division remain there at least twelve

months. However, a boy can be returned to the regular school at any time, when in the opinion of the faculty he has corrected his problem. Due to this rule, as well as other ones, boys are constantly moving in and out of the school during the year. All of the twenty-five boys subsequently chosen for inclusion in the experimental group had been in attendance at the school less than one semester, i.e. five months.

As a means of independently corroborating the judgments expressed in the School Problem Report by the school authorities who had recommended the boys' assignments to the social adjustment school, the deportment marks of each boy were checked for his developmental behavior record. Almost without exception, the boys were found to have received only unsatisfactory or "fair" marks of U and F, the two lowest marks on a four-point scale. It was thus apparent that the entire school history of developmental behavior of these boys had been characterized by unsatisfactory or barely acceptable deportment.

Analysis of the cumulative records, the School Problem Reports, the attendance officer's reports and the principal's letters was again made for the purpose of further evaluating the boys' developmental histories, family and school backgrounds. This was followed by an individual interview with each boy to check and supplement these data. A check on the current reading level of each boy was made by means of the Gray's Oral Reading Test. Reading was checked because it is considered a factor in the adjustment of school children (Kuaraceus, 1956).

All in all, the following major factors came out of this study:

1. All the boys in the experimental group were born in Chicago and had attended only Chicago public schools.
2. All the boys lived in underprivileged areas of the city characterized by marked overcrowding and high crime rates. Their homes were, in all cases, multi-family tenements, usually three stories high, with a central hall and flanking many kitchenette apartments on either side.
3. The families of all the boys appeared to live marginal or dependent existence. Fourteen boys in the group came from broken homes, i.e., one in which a significant adult member was missing because of death, desertion or divorce. Twelve families were receiving public assistance. All the fathers were employed as unskilled factory workers or laborers. The employed mothers in the group were factory workers or domestic servants.
4. All the boys in the group came from families which had two to thirteen children. The average size family for the group was five children.
5. All of the families of these boys fell in the lower-lower class according to their total scores on the Warner Index of Status Characteristics (Warner et al., 1949).
6. All of the boys in the group claimed to be connected with some Protestant church, in most cases, the Baptist denomination.
7. Without exception, all the boys in the group had experienced scholastic failure and were behind in grade placement according to their mental age grade expectancy.
8. All of the boys were retarded in reading, according to their mental age grade expectancy.

9. All of the boys were classified as "incorrigible" by the schools they last attended. However, the specific acts which led to their placement in the social adjustment school were the following, according to frequency:

Fighting, disobedience and unruliness; the use of uncouth language; bullying and teasing; destructiveness; lying and stealing.

The control group, i.e., the "socially adjusted" boys were, contrary to the experimental group, chosen from among the population at a regular public school. This school was one to which this investigator was assigned to evaluate its problems resulting from pupil transiency and overcrowdedness. It was located in a semi-slum area characterized by rooming houses and old five and six story walkups in various stages of deterioration. Although the area had always been one of family transiency, it had experienced in recent years a transition in racial population. That is, Negro and Puerto Rican families had moved in as white families moved out of the area.

The control group was chosen from among the population at this school according to the following plan: First, in an interview with six teachers who taught the fifth, sixth and seventh grades each was asked to nominate those Negro boys in her classroom who were in her opinion well-adjusted according to the following criteria:

1. He is able to play well with other children.
2. He has reasonable control over his emotions.
3. He is able to think for himself.
4. He is relatively free from fears.
5. He is kind and helpful to teachers and classmates.

6. He is achieving somewhere near his capacity.

*Teacher asked
to rate
Checkman 2778*

The teachers were also requested to select only boys who had been in their classroom at least three months or more, to treat each nominee separately, and to check each boy's adjustment further by means of a rating scale for pupil adjustment. This scale (Appendix IV) was developed by the Department of Mental Health of the State of Michigan for the use of classroom teachers in rating their pupils in the following twelve areas of adjustment: (1) overall emotional adjustment, (2) social maturity, (3) tendency toward depression, (4) tendency toward aggressive behavior, (5) extroversion-introversion, (6) emotional security, (7) motor control and stability, (8) impulsiveness, (9) emotional irritability, (10) school achievement, (11) school conduct, (12) physical condition. Each category contained a five point scale. For example, in the category "overall emotional adjustment", A. represented very well adjusted; B. well adjusted; C. moderately adequate adjustment; D. poorly adjusted; E. very poorly adjusted. Only those pupils with A or B ratings were considered for selection.

The teachers who were approached cooperated to the fullest in this investigation. A total of forty-seven boys were referred to this investigator for further screening. The cumulative record of each boy was studied as an aid in selection. The general items in this record included: health data and the results of physical examinations; family data and home information; school marks; test results; description of behavior; deportment marks; and special abilities, honors. Briefly, the record card contained a comprehensive picture of the child and his total environment from the time he first entered school.

As a further means of independently corroborating the judgment of the

teachers, the record of deportment of each boy was checked for his developmental behavior. Only those boys were chosen who were found to have received marks of G (good) or better in deportment during their entire school career.

Each of these boys was subsequently interviewed personally by this investigator in an effort to check and supplement the personal data taken from each boy's cumulative folder or record. Some of these data were quantified by means of the Warner Index of Status Characteristics to determine level of social class placement. Each boy was given individually the Gray's Oral Reading Test to determine his current reading grade. In nine cases the individual Binet Scale was given. The Binet Scale was administered in these cases because the I.Q. scores derived from the records failed to check within five points of each other, although in respect to all other criteria, those cases appeared ideal.

Twenty-five boys were finally selected from the original group of forty-seven subjects. The major factors which characterized this group were as follows:

1. All the boys in the control group, i.e., the socially adjusted group were born in Chicago and had attended only Chicago public schools.
2. All the boys lived in a neighborhood that can be characterized as underprivileged, i.e., it was marked by deteriorating, overcrowded tenements and the presence of many barrooms, poolrooms, hangouts, cheap commercialized recreation, railroad yards and tracks, alleyways, conflicting racial and culture groups and many rooming houses.
3. The families of all the boys appeared to live marginal or dependent existencies. Nine boys in the group came from broken homes, i.e., one in which a significant adult member is missing because of death,

desertion or divorce. All nine of these cases were receiving public assistance. Not a single parent in the group had ever held down a professional "white collar" or skilled workman's post. The employed mothers in the group were in all cases, either factory workers or domestic servants.

The fathers were engaged in unskilled work in industry or laboring work.

4. All the boys in the group came from families which had two to ten children, with an average of about four children per family.
5. According to the Warner Index of Status Characteristics, all families fell in the lower-lower class, in terms of social-class placement.
6. All the boys in the group asserted a connection with some Protestant church, most frequently the Baptist denomination.
7. None of the boys in the group had experienced scholastic failure greater than one semester. They were presently in grades that were within one semester, at least, of their mental age expectancy.
8. The boys, as a group, appeared to be better readers than the mal-adjusted group.
9. All the boys in this group were considered "normal" or "socially adjusted", according to the criteria already outlined.

To reiterate briefly, in setting up this proposed investigation it was decided to equate the experimental and the control group with respect to certain relevant variables, i.e., race, sex, age, intelligence, social-economic background and religion as a prerequisite to the comparison of the two criterion groups in regard to the variable of personality.

The criteria upon which to match the groups having been decided there are, according to Guilford (1956, P.190) two ways of carrying out the matching. One

is by pairing cases directly. The other way is to "ignore individuals as such and simply to attempt to make sure that the two samples have approximately equal means, standard deviations, and skewness on the matching variable."

In this experiment the subjects were precisely paired with respect to race, age, I.Q. scores, socio-economical status and religion. Although small discrepancies existed between the pairs with regard to family size (number of siblings in home) these differences were not considered to be prejudicial to the results since the two groups had approximately equal means, standard deviations, and skewness on this specific variable.

With regard to education each pair of subjects entered school at the same age. However, the subjects were not equally matched in terms of their present level of grade attainment and level of reading achievement. These findings are consistent with previous studies (e.g., Block & Flynn, 1956; Glueck & Glueck, 1950; Kuvaraceus, 1954) in indicating that it is not possible to match delinquent and non-delinquent subjects equally with regard to their educational development. All studies have found delinquent subjects to be retarded in their educational development in comparison with normal controls of substantially equal mental ability. Thus, the present finding that the socially maladjusted group was significantly more retarded educationally than the socially adjusted group is corroborative evidence that the two criterion groups have been validly dichotomized.

In Table I data are presented on how the two groups compare statistically with regard to age, grade placement, I.Q. score and reading score. In analyzing the data the t test was applied to the difference scores. It was decided that an .01 level of significance would be required in order to reject the null

hypothesis.

With regard to the age variable, the socially maladjusted group ranged in age from 120 months to 151 months with a mean of 135 months and a standard deviation of 10.7 months. The socially adjusted group ranged from 120 months to 151 months in age with a mean of 136 months and a standard deviation of 9.10 months. With 24 degrees of freedom for this matched variable a t of 2.79 is required for the .01 level of significance in order to reject the null hypothesis. Since a t of .038 was calculated the null hypothesis that there is no difference between the subjects with regard to age was accepted.

With regard to intelligence quotients, the range of I.Q.s for the socially maladjusted group was 83 to 112 with a mean of 93.5 and a standard deviation of 7.2. The socially adjusted group ranged from 84 to 109 with a mean of 94.5 and a standard deviation of 7.1 with 24 degrees of freedom a t of 2.79 is required in order to reject the null hypothesis at the .01 level of significance. Since a t of .040 was obtained the null hypothesis was accepted. That is, it was concluded that the paired subjects were substantially equal in terms of mental ability.

With regard to the grade placement factor, the grade levels were first converted to months (e.g., 96 months is equivalent to beginning third grade) for the purpose of precise statistical calculation. It was found that the socially maladjusted group ranged in grade from 96 months to 132 months with a mean grade of 117 months (grade 4A) and a standard deviation of 11.6 months. The socially adjusted group ranged in grade from 120 months (grades 5B) to 150 months (grade 7A) with a mean grade of 129 months (grade 5A) and a standard deviation of 6.7 months.

Table 1

Ages, Grades, IQ and Reading Scores of Socially Maladjusted and Matched
Socially Adjusted Boys When Selected for Study

Case No.	C.A. Mal.	Age	(Months)		Grade Placement		IQ Scores		Reading Scores	
			Mal.	Adj.	Mal.	Adj.	Mal.	Adj.	Mal.	Adj.
1.	120		120		3B	5B	95	96	3.2	3.7
2.	120		123		3B	5B	89	90	1.3	4.7
3.	120		126		4B	5B	86	94	3.5	5.4
4.	121		126		4B	5B	84	89	3.4	5.1
5.	122		127		3B	5B	83	90	1.3	5.4
6.	122		127		4A	5B	95	90	2.8	5.1
7.	127		127		5B	5A	92	100	2.4	5.2
8.	129		128		4B	5B	84	90	2.4	4.5
9.	129		128		5B	5A	95	99	4.5	6.7
10.	130		129		4B	5B	96	97	4.9	4.2
11.	131		130		5B	5A	112	109	2.8	8.8
12.	132		132		4B	5A	89	88	2.3	4.4
13.	133		135		5A	6A	104	97	5.2	8.7
14.	135		137		5A	5A	90	92	3.9	5.0
15.	136		138		4A	6A	97	104	5.2	3.4
16.	141		141		6B	6A	112	107	5.2	7.0
17.	143		142		4A	5A	94	84	3.7	3.2
18.	146		145		5A	6A	96	88	5.2	4.7
19.	146		146		6B	6B	90	92	2.3	3.7
20.	147		148		5B	6A	90	93	4.0	6.7
21.	147		149		5A	7B	92	87	2.4	5.4
22.	148		149		5A	7B	92	85	4.2	3.9
23.	148		149		5A	7B	100	108	3.2	5.1
24.	151		154		6B	7A	95	92	4.9	7.3
25.	151		154		6B	7A	90	87	4.5	5.4
Mean	135		136		4A	5A	93.5	94.5	3.6	5.5
Std. Deviation	10.7		9.10		11.6	6.70	17.2	7.1	11.7 (months)	19.7 (Months)
T Score	.038					4.2	.040			4.8

As indicated earlier the twenty-five subjects in each group were not matched for grade placement. Thus with 48 degrees of freedom a t of 2.68 is required in order to reject the null hypothesis at the .01 level of significance. The obtained t for difference in grade placement between the two samples was 4.2. Hence, the null hypothesis was rejected. It was concluded that the two groups were significantly different in terms of their educational development.

With regard to the reading achievements of the two groups the grade level scores were first converted from years into months for more precise statistical calculation. It was found that the socially maladjusted group ranged in reading skill from 75 months (grade 1B) to 122 months (grade 5B) with an average grade of 102 months (grade 3A) and a standard deviation of 14.7 months. The socially adjusted group ranged from 96 months (grade 3B) to 164 months (grade 8A) with a mean reading level of 126 months (grade 5A) and a standard deviation of 19.7 months. Since the two groups were not correlated for reading achievement there were 48 degrees of freedom requiring a t of 2.68 in order to reject the null hypothesis at the .01 level of significance. The obtained t value for this variable was 4.8. Thus, the null hypothesis was rejected and it was concluded that the two groups differed significantly with regard to their reading achievements.

With regard to family size, the number of children in the families of the socially maladjusted boys ranged from two to thirteen with a mean of 4.9 and a standard deviation of 3.2. The number of children in the socially adjusted group ranged from two to ten with a mean size of 4.0 and a standard deviation of 2.9. With 48 degrees of freedom a t value of 2.68 is required in order to reject the null hypothesis. The obtained t value for this variable was .682. The null

hypothesis was thus accepted and it was concluded that the two groups were homogeneous in terms of family size.

In summary then, the two criterion groups were well matched in terms of race, age, intelligence, religion and socio-economic background. However, despite the similarity of the two groups in terms of the age at which they initially entered school there were significant differences in their school records with respect to grade attainment, reading skill and classroom conduct.

When the present study was initially undertaken it was not known what differences existed between the two criterion groups except for the fact that the experimental group had been placed in a correctional school because of misconduct. The present findings of differences in educational achievements between the two groups is corroborative evidence that these groups have been validly dichotomized since previous studies involving delinquency have found similar differences.

Administration of Tests

Having selected the fifty pupils according to the criteria already described this investigator personally administered to each pupil the Rorschach test and the Thematic Apperception Test. According to the cumulative test records available on these pupils no single boy had been tested on the Rorschach and /or/ TAT previous to this study.

It may be stated that all the pupils were somewhat accustomed to psychological examinations, having taken various standardized tests at different periods during their school years administered by special teachers and the school psychologist. All the pupils were also friendly and cooperative with the present examiner having been interviewed by him and tested for reading and, in

some cases intelligence, prior to the administration of the projective tests. For the foregoing reasons no general explanation for the projective testing was given.

All of the tests on the socially maladjusted group were given in a small well-lighted office room at the Mosely Social Adjustment School. In each case the examiner and the boy were alone in the room. Likewise the boys in the adjusted group were tested individually in their school in a well-lighted office room and alone with the examiner.

In the administration of the Rorschach the technique described by Klopfer (1946) was used with certain modifications to be described. Before starting the Rorschach test, the examiner had readily available a stop watch, pencils, paper for recording responses and the individual record blank used for pencil location of the blot responses.

When the boy was seated comfortably (beside but slightly in front of the examiner) and good rapport had been established, the examiner indicated the cards and said, "Children see all sorts of things in these ink-blot pictures; now tell me what you see, what it might be for you, what it makes you think of." If the boy hesitated more than fifteen seconds the examiner said, "Does it look like anything to you? Tell me what you see." If the boy still refused to respond the examiner said, "Maybe it doesn't look like anything to you. If not you can put it down. Maybe you can tell me what this one could be?" The suggestion that the boy put the card down was made only after he had stopped looking at it or had said that he did not know what it could be. If the boy stopped after one response the examiner said, "Yes? Can you tell me more?" At no time was the boy encouraged to give more than two responses to any one card.

These directions were used with each blot in the series.

The basic modification from the Klopfer method was that of inserting the inquiry questions after the child had indicated that he had finished with a given card. When the boy had finished responding to a card the examiner said, "Now I want to see just what you saw. Where is the _____? Tell me about it. Why does it look like a _____?" This procedure eliminated the second presentation of the cards. This step was taken because many investigators, including the present one, have found that children, even older ones, often lose interest in the whole situation when forced to go through the cards a second time.

With regard to the TAT technique, 14 cards were selected for use in this study. They were: 1, 2, 3BM, 5, 6BM, 7BM, 8BM, 10, 11, 12BM, 13B, 15, 16, 20. These cards were chosen because they had been designated by Murray (1943) as appropriate for boys as well as adults and because they varied in stimulus value.

In the administration of the 14 TAT cards the instructions recommended in the TAT manual were used. To enable the investigator to get a verbatim account of each story a tape recorder was used. In all instances the recorder was readily accepted by the boys and none showed the slightest resistance about having his voice recorded.

The TAT was in all cases presented following the Rorschach administration. After explaining the purpose and the use of the recorder (which was not used with the Rorschach) the TAT was introduced with the following instructions: "This is a story telling test. I have some pictures here that I am going to show you, and for each picture I want you to make up a story. Tell what has happened before and what is happening now. Say what the people are feeling and

thinking and how it will come out. You can make up any kind of story you please. Do you understand? Well, then, here is the first picture. You have five minutes to make up a story. See how well you can do".

Nothing else was said by the examiner except to encourage the boy when needed or to prompt him with some brief remark, such as, "What led up to his situation" or "How does it turn out?". In all cases the 14 cards were completed in one session.

Scoring of the Rorschach Protocols

In the marking of the Rorschach protocols the method used by Klopfer and Kelly (1946) was followed but only up to a point. In its entirety it proved to be too involved. One reason for difficulty was that, with few exceptions, the boys in this study displayed limited capacity for explanation of their responses. In many instances they would give a response but could not explain why they made the interpretation simply saying "it looks like it" or shrugging their shoulders and pointing to the blot. Because the boys could not always delineate sharply where and how they had seen the various things they had mentioned some of the more minute Klopfer scoring symbols were not used.

For example, in the scoring of location every effort was made to establish as clearly as possible all complete and incomplete W responses and all usual detail (D) responses. However, no effort was made to score the responses in terms of Klopfer's tiny detail (dd), edge detail (de), inside detail (di) or rare detail (dr). Instead, whenever a response was given which could not be included in the W and D categories it was considered an unusual detail response and marked Dd.

In the scoring for the four main classes of determinants (form, movement,

shading and color) the Klopfer system was followed except for the marking of form accuracy (F +). Although revisions in scoring criteria for F+ and F- have been published by Beck, Hertz and Klopfer there is as yet no adequate agreement on criteria for evaluating form level. Beck (1949) and Hertz (1953) have utilized statistical lists of F+ and F - responses in an effort to eliminate subjective appraisal of form accuracy. Although Klopfer (1954) has developed a form-rating scale with which a numerical score is obtained, the assignment of the score is still based on subjective judgment. In a recent article Hertz (1959) pointed out a number of general shortcomings in form-level scoring. She noted that research studies to date do not reflect adequate reliability of the evaluations of form level made by judges with varying degrees of Rorschach experience (P. 41).

For the purposes of the present study it was decided that the scoring of F+ and F - responses would be determined primarily on the basis of the tables compiled by Beck (1949) and Hertz (1951). When responses were given which were not listed in the tables the present investigator assigned a score of F+ and F - on the basis of whether or not the concept coincided with the form of the blot. The score of F+ was assigned for concepts considered inherently vague (e.g., clouds, maps, designs). When borderline problems in scoring occurred two other psychologists trained in the scoring of the Rorschach were consulted and a conference decided the final score.

Klopfer's (1946) requirements for the scoring of content categories and popular (P) responses were also followed. No effort was made to distinguish original responses.

After each Rorschach protocol had been completely scored by the present

investigator in terms of aforementioned criteria, the following steps were taken: The scored protocols and set of scoring criteria were submitted one by one to another psychologist for individual checking. The psychologist was not told which of the protocols were those of the maladjusted and which were those of the adjusted group. Following completion of the checking of the scoring the protocols were submitted to a second psychologist for rechecking. When borderline problems or doubtful points in scoring occurred a three-way conference decided the final score. It should be re-emphasized at this point that the two psychologists who served as checkers were not only trained in the scoring of the Rorschach but both had used the technique clinically for the past seven years.

Scoring of Hostile Content

As indicated earlier, the Rorschach and TAT protocols were scored for hostile content on the basis of the criteria contained in the rating scales of Hafner and Kaplan (1960).

Considering the Rorschach data first, the present investigator read carefully each response and then scored it according to Hafner and Kaplan's criteria presented in Appendix I. Only those responses included in the scoring criteria were assigned a score. A mimeographed work sheet (Appendix III) was prepared on which the scorable responses and their assigned scores were written. Because of the objectivity and clarity of the scoring criteria independent scorers were not employed. Instead the raw Rorschach data, the scoring criteria and the scored responses recorded on the work sheets were submitted for individual checking to the two psychologists who had previously verified the correctness of the formal scoring of the records.

When either of the psychologists requested explanation or amplification of

doubtful points about a response and its score a three-way conference was held at which time a decision as to the final score was reached.

It should be re-emphasized at this point that at no time did the psychologists know which of the protocols given to them for checking were those of maladjusted boys and which were those of adjusted boys.

With regard to the scoring of the TAT, each story was considered individually and assigned one of five possible scores (0,1,2,3, and 4 respectively) on the basis of Hafner and Kaplan's scoring criteria presented in Appendix I.

The score assigned to each story represented the maximum amount of hostility expressed, according to the TAT hostility scale criteria. For example, the following story was told on card 7EM (a description of this card is contained in Appendix II) by one of the boys in this study: "This is the father arguing with his son. The son wouldn't do what his father wanted so they had a bad fight. The old man ain't winning the fight. So he gets a gun and shoots the son. It turns out bad. The old man goes to prison and the young man is dead in his grave". Although the above-quoted story contains elements of verbal hostility (father arguing with son) which receives a weighted score of 2 points on the rating scale, the maximum amount of hostility expressed is on a physical level involving shooting and death which receives a weighted score of 4 points. The weighted score of 4 points was therefore assigned as the final score to the foregoing story.

Since the maximum weighted score for each of the fourteen cards used in this study is 4 points, the highest total maximum score that a subject can receive is 56 points.

It is important to note at this point that by assigning only one weighted

score to each TAT card the length of the stories, per se, has no influence on the final weighted score assigned to each story.

A mimeographed work sheet was also used for the TAT on which the hostile themes and their assigned scores were recorded. Upon completion of the scoring, the TAT records and the attached work sheets were submitted to two other psychologists for checking. Where doubt arose as to whether the scoring of a theme was consistent with the rating scale criteria the final score was decided on the basis of a conference.

Statistical Methods Used

In an effort to choose statistical tests appropriate to this research design, Siegal's (1956) criteria for making such selection were consulted.

According to Siegal, the statistical operations allowable on a given set of scores are dependent on the level of measurement achieved (P.22). The level of measurement obtained on tests such as the Rorschach and TAT may properly be viewed as ordinal. That is, scores based on Rorschach and TAT responses are not exact in any numerical sense but are in effect classificatory or simply ranks. In consequence, hypotheses based on such scores can be validly tested by using only those statistical methods appropriate with data measured in a nominal or ordinal scale.

In the present study the median value has been used for describing the central tendency of the scores presented. For determining the significance of differences between the scores the chi square statistic has been employed. In analyzing the magnitude as well as the direction of the differences between the matched groups with respect to certain variables the Wilcoxon matched-pairs signed-ranks test has been utilized. The sign test has also been used to

determine the relationship between two sets of variables under different conditions.

The statistical treatment of the data by means of the method of pattern analysis developed by Rimoldi and Grib (1959) is presented in detail in a later chapter.

CHAPTER IV

RESULTS AND DISCUSSION

Statistical Analysis of the Rorschach Data

The first hypothesis under test was that the adjusted group would exceed the maladjusted group to a statistically significant degree with regard to the following Rorschach variables: R, D, M, FM, FK, Fb, FC, F+%, H and P. With Robbertse's study (1955) as a frame of reference it was decided that a level of significance equal to or less than .05 would be necessary in order to reject the null hypothesis in favor of the research hypothesis.

It is indicated in Table 2 how the two criterion groups compare with regard to the above-mentioned variables. The ranges, median scores and critical values of chi square are presented for each of the variables except those for which both medians equal zero. It is apparent from the data of Table 2 that no significant differences were found in respect to R, D, FM, FK, Fb, FC, H and P. The null hypothesis was accordingly retained and it was concluded that the two groups were homogeneous with regard to the psychological qualities symbolized by the foregoing variables.

Statistically significant differences were found with regard to the M, and F+% scores of the two groups. The null hypothesis was therefore rejected in favor of the research hypothesis. It was concluded accordingly that the socially adjusted pupils surpass the socially maladjusted group in terms of the psychological qualities attributed to M and F+% answers.

The second hypothesis was that the socially maladjusted group would exceed the socially adjusted group with regard to W, Dd, m, CF, C, Sum C, F%, FC and A%. It is indicated in Table 2 how the two criterion groups compare in respect to these variables. From the data it is apparent that no significant differences were found for W, Dd, m, CF, C, Sum C, FC and A%. Thus, the null hypothesis was accepted. The conclusion was that the data do not support the hypothesis that the maladjusted group will exceed the adjusted group with regard to the psychological qualities attributed to the above-mentioned variables.

The difference between the two groups with regard to F% was found to be significant at the .05 level of significance for a one-tailed test. The decision therefore was to reject the null hypothesis in favor of the research hypothesis. Accordingly, it was concluded that the socially maladjusted group was significantly higher than the control group as regards to the psychological qualities attributed to F%.

In comparing the statistical results of the present study with those of a related study undertaken by Robbertse (1955) several consistencies as well as inconsistencies were noted. For example, the research hypotheses concerning the direction of the differences for M, F+%, and F% scores were similarly confirmed in both studies. On the other hand, Robbertse found his controls to significantly exceed the maladjusted pupils with regard to D responses while the latter surpassed the former to a statistically significant degree in respect to CF, C and Sum C scores. The results of the present study revealed no statistically significant differences between the two groups in regard to the aforementioned variables.

Since the pairing method was initially used in matching the groups it was

Table 2

Comparison of Ranges and Median Scores of Adjusted and Maladjusted Groups
on Twenty Rorschach Categories

Categories	Range		Median		Chi. Square	P
	Adj. (N 25)	Maladj. (N 25)	Adj. (N 25)	Maladj. (N 25)		
R	13-29	13-29	17	18.5	.072	ns
W	1-9	1-8	4	4	.079	ns
D	5-22	9-26	12	13	.073	ns
Dd	0-3	0-4	0	0		
M	0-6	0-3	2	0	6.0	.01
FM	0-7	0-5	2	1	.081	ns
m	0-4	0-5	0	0	.034	ns
F%	24-95	25-100	63.5%	73%	2.8	.05
F+%	50-100	50-89	75%	64%	3.1	.025
k	0	0				
K	0-3	0-1	0	0		
c	0-2	0-1	0	0		
C	0-1	0-2	0	0		
FC	0-2	0-1	0	0		
CF	0-2	0-3	0	1	.034	ns
C	0-1	0-1	0	0		
Sum C	0-2	0-3	1	1	.038	ns
P	2-7	2-6	4	5	.032	ns
A%	40-80	23-89	63%	65%	.037	ns
H	0-7	0-6	2	1.5	1.0	.15

decided to test the relative magnitude as well as the direction of the differences within the pairs with regard to M, F%, F+%, and H. The M, F% and F+% scores were chosen for further statistical analysis because significant differences were found to exist between the subjects on a group basis with regard to these variables. The H variable was selected for further statistical evaluation because the control group gave more H answers than the experimental group although the difference was not significant statistically.

The Wilcoxon matched-pairs signed-ranks test was then employed because it utilizes information about the relative magnitude and direction of the difference between any pair.

In Table 3 data are presented with regard to the M responses of the matched pairs. Out of the total of 25 matched pairs, 17 socially adjusted boys obtained a greater number of M responses than their matched pair. Five of the matched pairs tied in terms of their number of M responses. Because of these ties the latter cases were not included in the calculation of the difference between the groups. Three socially maladjusted boys obtained a greater number of M responses than their matched pair. With N of 20 the T value was calculated to be 33.0 on the basis of the critical values of T for N of 20 (Siegal 1956, P 254) the level of significance for the one tailed test was .005.

It was accordingly concluded that the socially adjusted boys excelled their matched pairs to a statistically significant degree with regard to M answers. This finding was generally consistent with that yielded by the chi square test. It also indicated that the magnitude as well as the direction of the differences between the subjects were greater when analyzed on a matched pair basis than when evaluated on a group basis.

Table 3

Difference in Total M Responses Between Matched Pairs as Indicated by the
Wilcoxon Matched Pairs Signed Ranks Test

Pair	M Responses Adjusted	M Responses Maladj.	d	Rank of d	Rank with less frequent sign
1	2	0	2	12	-12
2	3	1	2	12	
3	0	2	-2	-12	
4	0	0	0	0	
5	0	0	0	0	
6	3	0	3	16	-16
7	4	0	4	18.5	
8	2	1	1	5	
9	3	0	3	16	
10	0	3	-3	-16	
11	4	0	4	18.5	-5
12	2	2	0	0	
13	1	2	-1	-5	
14	2	1	1	5	
15	0	0	0	0	
16	1	0	1	5	T = 33
17	2	0	2	12	
18	1	0	1	5	
19	2	0	2	12	
20	2	2	0	0	
21	6	0	6	20	T = 33
22	1	0	1	5	
23	2	1	1	5	
24	3	2	1	5	
25	2	1	1	5	

With regard to the $F\%$ variable data are presented in Table 4 concerning the relative magnitude and direction of the differences between the paired subjects. As indicated by the data, 17 out of the group of socially maladjusted boys obtained higher $F\%$ scores than their matched pair. With N of 25 the T value was calculated as 81.0. This value was found to be significant for a one-tailed test at the .025 level of confidence. Thus the statistical difference found to exist between the subjects on a group basis with regard to $F\%$ was confirmed in terms of its magnitude and direction on a matched pair basis.

It is indicated in Table 5 how every boy in the socially adjusted group compares with his matched pair with respect to $F+\%$ score. Out of the total of 25 matched pairs 20 socially adjusted boys obtained higher $F+\%$ scores than their matched pair. Three pairs of subjects tied with regard to their $F+\%$ scores. Only two boys in the maladjusted group obtained higher $F+\%$ scores than their matched pair. The T value based on N of 22 was 35.5 and was found to be significant at the .005 of confidence. This finding was not only consistent with that yielded by the chi square test but indicated an even greater difference within the pairs with regard to the $F+\%$ variable than was ascertained by the comparison of the subjects on a group basis.

The contrast between the matched pairs with regard to the H variable is presented in Table 6. As indicated by the statistical data 15 out of the group of socially adjusted boys exceeded their matched pair in the total number of H responses. Five of the pairs tied in respect to total H responses. Five of the pairs tied in respect to total H responses. While only five boys belonging to the experimental group exceeded their matched controls in terms of H responses, three of these difference scores are among the largest. Their ranks are 11,

Table 4

Difference in F% Scores Between Matched Pairs as Indicated by the
Wilcoxon Matched Pairs Signed Ranks Test

Pair	F% Adjusted	F% Maladj.	d	Rank of d	Rank with less frequent sign
1	52	75	-23	-11.5	
2	76	64	12	4.5	4.5
3	61	83	-22	-10	
4	73	87	-14	-8	
5	84	78	6	3	3
6	41	81	-40	-21.5	
7	52	92	-40	-21.5	
8	65	40	25	15	15
9	52	78	-26	-17	
10	78	55	23	11.5	
11	24	82	-58	-25	
12	33	46	-13	-6.5	
13	71	58	13	6.5	6.5
14	64	96	-32	-18.5	
15	95	98	-3	-1.5	
16	62	87	-25	-15	
17	57	100	-43	-24	
18	66	69	-3	-1.5	
19	72	84	-12	-4.5	
20	39	70	-31	-18	
21	43	68	-25	-15	
22	75	58	17	9	9
23	95	75	-30	-17	
24	75	51	24	13	13
25	57	25	32	18.5	18.5
					T = 81.0

Table 5

Difference in F+% Scores Between Matched Pairs as Indicated by the
Wilcoxon Matched Pairs Signed Ranks Test

Pair	F+% Adjusted	F+% Maladj.	d	Rank of d	Rank with less frequent sign
1	88	75	13	14	
2	53	50	3	3.5	
3	80	73	7	9.5	
4	78	64	14	16	
5	75	65	10	12.5	
6	100	66	34	20	
7	65	60	5	5	
8	89	50	39	21.5	
9	73	67	6	7	
10	60	50	10	12.5	
11	100	61	39	21.5	
12	50	50	0	0	
13	81	81	0	0	
14	81	75	6	7	
15	71	89	-18	-19	-19
16	56	56	0	0	
17	64	63	1	1	
18	66	64	2	2	
19	89	86	3	3.5	
20	71	58	13	14	
21	100	84	16	17.5	
22	75	59	16	17.5	
23	66	72	-6	-7	-7
24	83	70	13	14	-9.5
25	81	88	-7	-9.5	T = 35.5

13.5, and 18.5 respectively. The T value based on N of 20 was 53.0 which was not statistically significant. This finding was not in conflict with that yielded by the chi square test. It was thus concluded that while the differences between the H responses of the matched pairs were not significant, the majority of socially adjusted boys tended to give more H answers than their matched pair.

In further statistical analysis of the Rorschach scores it became apparent that many of the major determinants were used unequally, infrequently or not at all. This posed the question: How many boys used a particular scoring category at all? To answer this question the Rorschach data were arranged to determine how the two criterion groups compared with regard to the number of boys in each group who used a particular variable. The ten major determinants selected for statistical analysis were the following: M, FM, m, k, K, c, C, FC, CF, and G. The location, form and content variables (e.g., W, D, F, A and P) were not included in these data because they are used so nearly universally that they provide very little information for comparing groups. For example, each of the fifty subjects in this study used the variables W, D, F, A and P at least once.

In accordance with the earlier hypothesis it was predicted that a significantly higher number of boys in the socially adjusted group than in the maladjusted group would use M, FM, K, c, and FC. The second hypothesis under test was that a significantly higher number of boys in the maladjusted group than in the adjusted group would use m, C, CF, and G.

It is indicated in Table 7 how the two criterion groups compare with regard to the total number of subjects in each group using a particular variable. The chi square values and their probabilities are presented for M, FM, m and CF.

Table 6

Difference in Total H Responses Between Matched Pairs as Indicated
by the Wilcoxon Matched Pairs Signed Ranks Test

Pair	Adjusted H Totals	Maladj. H Totals	d	Rank of d	Rank With Less Frequent Sign
1	7	2	5	19	
2	3	1	2	11	
3	0	3	-3	-13.5	-13.5
4	2	2	0		
5	1	3	-2	-11	-11.0
6	4	0	4	18.5	
7	4	1	3	13.5	
8	2	2	0		
9	5	1	4	18.5	
10	2	6	-4	-18.5	-18.5
11	4	0	4	18.5	
12	3	3	0		
13	2	2	0		
14	5	6	-1	-5	- 5.0
15	2	1	1	5	
16	2	0	2	11	
17	2	1	1	5	
18	1	1	0		
19	4	3	1	5	
20	3	2	1	5	
21	6	0	6	20	
22	1	0	1	5	
23	2	3	-1	-5	- 5.0
24	4	3	1	5	
25	2	1	1	5	T = 53.0

Table 7

The Number of Subjects in the Adjusted and in the Maladjusted
Groups Using the Major Rorschach Determinants

Variables	Adjusted Group N 25	Maladj. Group N 25	Combined Total	Chi Square	P
M	20	11	31	5.1	.01
FM	22	18	40	1.6	.15
m	17	11	28	1.5	.15
k	0	0	0		
K	2	3	5		
c	5	8	13		
C	3	5	8		
FC	7	3	10		
CF	10	14	24	1.0	.15
C	1	5	6		

Chi square values were not calculated for the k, K, c, C, FC and C responses because they were given by such a small minority of subjects in both groups. As predicted, a significantly higher number of boys in the socially adjusted group used the M variable than in the maladjusted group. However, the hypotheses were not confirmed with regard to the remaining variables.

Pattern Analysis of the Rorschach Data

As indicated earlier Rimoldi and Grib (1959) have devised a method for objectively quantifying and comparing patterns of responses. A brief summary of this method will now be given after which the results of its application to the present Rorschach data will be enumerated.

For the purposes of pattern analysis a response is understood as a change in behavior or as no change in behavior following the presentation of a stimulus. In a given system different interactions will give rise to different responses. The particular order of these responses, at any one time, constitutes a pattern (Rimoldi & Grib, 1960, P 1).

To cite an example: Upon presentation of a Rorschach card the subject may react by giving a verbal response or react by not responding verbally. Either of these two reactions to the stimulus card are considered responses which may be dichotomized into one of two mutually exclusive categories such as, the occurrence or non-occurrence of a verbal response. As succeeding cards are presented the subject may react verbally to some of the cards but not to others. This differentiation in responses constitutes his pattern. However, if the subject responds to all of the cards in the same way (such as failing to give a verbal answer to the entire sequence of cards) this will not constitute a pattern. Thus a pattern implies variation or dissimilarity in responses.

In objectively quantifying patterns of responses the data are arranged in a two dimensional table with the columns representing stimuli and the rows subjects. The cell entries are of a dichotomous type representing the occurrence or non-occurrence of a particular type of response. In characterizing the response pattern each cell of the matrix of responses is given a numerical

weight which is based on the contributions of both subject and stimulus to the total pattern. The actual (observed) pattern of the subject is then evaluated against an expected or hypothetical pattern by comparing the congruence of the cells of both patterns. The degree of consistency between the observed pattern and the "ideal" pattern is quantified in terms of an "Index of Agreement" score which varies from 1.00 (complete agreement) to 0 (complete disagreement).

In the present study the pattern analysis method was employed for the following purposes: to determine the degree to which the response patterns of the socially maladjusted boys, as a group, differed from the response patterns of the socially adjusted boys as a group.

In applying the pattern analysis technique to the Rorschach data the following steps were taken: ^I first the common median of each Rorschach variable was determined by combining the scores of the two groups. Next, each group's scores were split at that combined median and designated as x cells if at or above the median or empty cells if below the median. The data were tabulated separately for each group in two dimensional tables, the columns representing the variables and the rows the subjects. The variables were then ranked in terms of frequency of x cells (i.e., in terms of row totals). The subjects likewise were ranked in terms of x cells (i.e., in terms of row totals).

A preliminary analysis of the tables of patterns indicated no real difference between the groups with regard to the sequence of location responses

^IThe writer wishes to thank Dr. T.F. Grib for his comments and written suggestions with regard to the procedural steps in the use of the pattern analysis technique.

(W, D, Dd). It was therefore decided to delimit the data to the movement, form and color elements. The specific determinants subjected to comparative analysis were the following: human movement (M), animal movement (FM), inanimate movement (m), form (F%), achromatic color (under this heading c and C' were included) and bright color (FC, CF, and C were grouped under the formula Sum C). The chiaroscuro category (k, K, FK) was not included in the data because responses of this type were seldom, if at all, given by the subjects in either group. For example, not a single subject gave a response scored as k. As indicated earlier one of the requirements of the method here described is differentiation in responses.

It was decided that the model pattern would be based on the response pattern of the control group. The aim was to compare the actual performances of each group with the expected (model) pattern.

In setting up the model pattern the columns (Rorschach determinants) were ranked in order of frequency. The response of each subject then received a weight which characterized it in terms of the following: type of response (presence or absence; total number of similar type of responses in the entire system; number of similar type of responses in a given subject, and number of similar responses to a given determinant. Thus the weight value of the response was determined by the entire pattern of responses for each group and the given set of stimuli (Rorschach determinants).

For nomenclature purposes the following symbols were used: each filled-in (X) cell was designated as a i_j with the i indicating row and j column. Similarly the empty cells were called \bar{i}_j with the i representing the empty cell in row and j the empty cell in column. For each row, the sum of a i_j (X)

cells were called R_j , and the sum of all \bar{a}_{ij} cells were designated as C_j and the sum of \bar{a}_{ij} called \bar{C}_j .

For all \bar{a}_{ij} cells, the weight (W) was defined in terms of the following equation:

$$W_{a_{ij}} = \frac{R_i C_j}{\sum_i R_i} \quad (2)$$

The weight (W) for \bar{a}_{ij} cells was defined in terms of a similar equation:

$$W_{\bar{a}_{ij}} = \frac{\bar{R}_i \bar{C}_j}{\sum_i \bar{R}_i} \quad (3)$$

The response sequence for the model pattern was form ($F\%$), human movement (M), animal movement (FM), inanimate movement (m), achromatic color (c, C') and bright color (Sum C). In order to determine the similarity between the model and observed patterns the sum of the weights of the unchanged cells and the total possible minimum values were divided by the total weight of the pattern and the total minimum possible values.¹

The equation for determining the index of agreement (I_a) between the observed pattern and the model pattern is given below.

$$I_a = \frac{A_t - A_{mt}}{T - A_{mt}} \quad (4)$$

Explanation of symbols is as follows: A_t is used to designate the total weights of non-misplaced cells. A_{mt} is used to define the total weights of non-misplaced cells under most deviant conditions. T is used to indicate the total

¹A minimum value should be defined for each pattern such that the final similarity ratio will be equal to zero when the observed pattern is the most deviant from the model pattern. The reader is referred to Rimoldi and Grib (1959) pp 11-19) for a detailed description of the method for computing the minimum value.

weights of the pattern.

The index of agreement for the control group with their own model pattern was .71. Comparing the maladjusted group's response pattern with the same model yielded an index of agreement of .53. It was therefore concluded that a conspicuous difference existed between the two groups in regard to their response patterns for Rorschach determinants. A summary of the total weight values and similarity ratios for the control and maladjusted groups is presented in Table 8 below.

Table 8

Total Weight Values and Index of Agreement Scores for
Rorschach Response Patterns of the
Adjusted and Maladjusted Groups

Groups	Total Weights Patterns	Total Weights Non-misplaced Cells	Total Weights Minimum Values	Index of Agreement Scores
Control	126.13	110.19	69.80	.7170
Maladj.	128.36	101.91	71.39	.5357

Statistical Analysis of Hostile Content

As indicated earlier, the content hostility rating scales devised by Hafner and Kaplan (1960) were applied to the present Rorschach and TAT data to test the following hypotheses: (a) that the socially adjusted group of subjects would have significantly higher levels of hostile content in their Rorschach and /or/ TAT protocols than would the socially maladjusted group of boys; and (b) that those subjects in both groups who obtain higher hostile content scores on the Rorschach would show higher content scores on the TAT. The Wilcoxon matched pairs signed ranks test was chosen to test the first hypothesis because it utilizes information about the relative magnitude as well as the direction of the differences between pairs. The sign test was selected to test the second hypothesis because of its applicability to ordinal data in which the experimenter wishes to establish whether two conditions are similar or different. The level of significance of .01 was chosen in order to reject the null hypothesis. Because the direction of the difference was predicted the region of rejection was one-tailed.

Considering the Rorschach results first, out of the total of 25 matched pairs 15 controls obtained higher hostile content scores than their matched pair. Three of the matched pairs obtained equal scores in hostile content. These cases were not included in the calculation of the difference between the groups since the scores were a tie. Seven socially maladjusted boys earned higher scores than their matched pair. The Wilcoxon matched pairs signed ranks test yielded a T value of 72.0 for the 22 matched pairs. On the basis of the Table of Critical Values of T (Siegal, 1956; P 254) a T value of 56 is necessary to reject the null hypothesis at the .01 level of significance. The null

hypothesis was therefore accepted and the research hypothesis rejected. It was accordingly concluded that although more socially adjusted than maladjusted boys showed differences in the direction of greater hostility in their Rorschach responses the differences were not statistically significant. These data comparing the matched groups with regard to hostile content on the Rorschach are presented in Table 9.

With regard to the TAT data, a comparison of the 25 matched pairs indicated that 19 socially adjusted boys obtained higher hostile scores on the TAT than their matched pairs. There were no ties. On the basis of the Wilcoxon matched pairs signed ranks test a T value of 55.5 was obtained. This value was found to be statistically significant at the .005 level of confidence. The null hypothesis was accordingly rejected in favor of the research hypothesis. It was concluded that significantly more socially adjusted boys than maladjusted showed differences in the direction of greater hostility in their TAT stories. The relative magnitude and the direction of the differences between the pairs are apparent from the data presented in Table 10.

The next problem involved a comparison of the Rorschach and TAT hostile content scores to determine whether the boys in either group who obtained higher hostile content scores on the Rorschach obtained similarly higher scores on the TAT. In analyzing these data three pairs were dropped because of tied scores. Out of the remaining total of 22 matched pairs, 12 boys who obtained a higher hostile content score on the Rorschach than their matched pair, obtained higher hostile content scores on the TAT.

Using the sign test to determine the significance of these observed similarities and differences between the hostile content levels of the two

Table 9

Difference in Rorschach Hostile Content Scores Between Matched Pairs as
Indicated by the Wilcoxon Matched-Pairs Signed-Ranks Test

Pair	Adjusted Hostile Scores	Maladj. Hostile Scores	d	Rank of d	Rank With Less Frequent Sign
1	10	4	6	19.5	
2	7	13	-6	-19.5	-19.5
3	10	6	4	14.5	
4	7	3	4	14.5	
5	9	5	4	14.5	
6	10	13	-3	-11	-11.0
7	10	9	1	2.5	
8	12	14	-2	-7	-7.0
9	8	10	-2	-7	-7.0
10	7	4	3	11	
11	12	10	2	7	
12	12	11	1	2.5	
13	11	11	0	0	
14	4	5	-1	-2.5	
15	1	1	0	0	
16	8	8	0	0	
17	4	7	-3	-11	-11.0
18	12	5	7	20	
19	9	7	2	7	
20	18	12	6	19.5	
21	12	7	5	17	
22	3	1	2	7	
23	16	10	6	19.5	
24	5	4	1	2.5	
25	15	19	-4	-14.5	-14.5
					<u>T 72.0</u>

Table 10

Difference in TAT Hostile Content Scores Between Matched Pairs as
Indicated by the Wilcoxon Matched-Pairs Signed-Ranks Test

Pair	Adjusted Hostile Scores	Maladj. Hostile Scores	d	Rank of d	Rank With Less Frequent Sign
1	35	29	6	11	
2	31	12	19	22	
3	38	13	25	23	
4	26	30	-4	-6	-6
5	19	25	-4	-6	-6
6	20	23	-3	-3	-3
7	21	33	-12	-17.5	-17.5
8	41	26	15	21	
9	28	23	5	8.5	
10	22	16	6	11	
11	30	18	12	17.5	
12	40	11	29	25	
13	27	17	10	14.5	
14	18	6	12	17.5	
15	41	14	27	24	
16	18	32	-14	-20	-20.0
17	20	16	4	6	
18	34	24	10	14.5	
19	24	18	6	11	
20	28	26	2	1	
21	25	28	-3	-3	-3.0
22	22	17	5	8.5	
23	29	22	7	13	
24	16	13	3	3	
25	35	23	12	17.5	
					<u>T 55.5</u>

groups, a non-significant P value of .416 was obtained. The null hypothesis was therefore retained and the research hypothesis rejected. It was accordingly concluded that the boys who obtain higher hostile content scores on the Rorschach will not necessarily obtain higher hostile scores on the TAT.

Inasmuch as the TAT was found to discriminate in such a highly significant way between the matched pairs with respect to hostile content the question was raised as to whether a difference could be found between the two groups in regard to patterns of hostility on the TAT cards.

As a preparatory step to the application of the method of pattern analysis to the TAT data, the hostile content scores obtained by both criterion groups were arranged to determine the followings: (a) the number of individuals in each group who responded with scorable evidence of hostility to each particular TAT card; (b) the particular TAT cards which discriminated significantly between the two groups with regard to hostile content; and (c) the differences in the levels of hostile content for each TAT card as indicated by the median scores.

In Table II data are presented with regard to the above mentioned factors. It was found that more boys in the adjusted group than in the maladjusted group responded with hostility to cards 1,2,5,7BM,8BM,10,12M,13B,15, and 20. All the boys in both groups told stories to card 3BM which contained elements of hostility. A slightly higher number of boys in the maladjusted group than in the adjusted group gave hostile themes to cards 6BM, 11, and 16. Chi square values and their probability levels were determined for those cards where inspection showed the numerical results of the two groups to be obviously discrepant. The cards which discriminated most significantly between the two groups with regard to hostile content were 2, 5, 7BM, 12B, and 13B. The cards

which evoked the highest levels of hostile content for both groups were 8BM, 11, and 15. The card which differentiated most significantly between the two groups with regard to level of hostile content was 12M. On the latter the median hostile score for the adjusted group was 3 as contrasted with a median score of 1.5 for the socially maladjusted group.

In applying the pattern analysis technique to the TAT data the procedure followed was precisely the same as that outlined earlier in this chapter with regard to the Rorschach data. The model pattern chosen for purposes of comparing the observed patterns of hostile content was that of the socially adjusted group. The model pattern sequence was as follows: 3BM, 8BM, 12M, 15, 11, 6BM, 1. 20, 7BM, 13BM, 10, 5, 2, and 16 respectively.

In accordance with the procedure outlined earlier the control group's response pattern was compared with the model pattern. This yielded an index of agreement score of .64. The response pattern of the maladjusted group was then compared to the model pattern which yielded an index of agreement of .51. It was thus concluded that a difference existed between the two groups with regard to their response patterns for the TAT. In Table 12 are listed the total weight values and index of agreement scores for the TAT hostility patterns for the two groups.

Table 11

Number of Subjects in Adjusted and Maladjusted Groups Responding to
Each TAT Card With Hostile Content

TAT Cards	No. Adjusted (Total N 25)	Median Score	No. Maladj. (Total N 25)	Median Score	Chi Square	P
1	22	2	17	1	1.9	.10
2	15	1	5	0	3.6	.025
3BM	25	2	25	2		
5	16	1.5	8	0	3.9	.025
6BM	22	2	23	2		
7BM	18	2	11	0	3.0	.025
8BM	25	3	22	3		
10	17	1.5	14	1	1.1	.15
11	22	3	23	2.5		
12M	24	3	17	1.5	4.2	.025
13B	17	2	9	0	3.9	.025
15	24	3	23	2.5		
16	14	1.5	16	2		
20	20	2	14	0.5	1.4	.10

Table 12

Total Weight Values and Index of Agreement Scores
for TAT Hostility Patterns of the Adjusted
and Maladjusted Groups

Groups	Total Weights Patterns	Total Weights Non-misplaced Cells	Total Weights Minimum Values	Index of Agree- ment Scores
Adjusted	298.55	235.13	123.95	.64
Maladjusted	295.48	200.72	83.10	.51

Discussion

To summarize briefly the Rorschach responses of the two groups of subjects were first compared by means of single-variable statistical techniques. The first hypothesis tested was that the socially adjusted group would exceed the maladjusted group to a statistically significant degree with regard to R, D, M, FM, FK, Fc, FC, F+%, H and P scores. The second hypothesis under test was that the socially maladjusted group would exceed the maladjusted group to a statistically significant degree with regard to W, Dd, n, CF, C, Sum C, F%, FC and A% scores. On the basis of the statistical analysis of the quantitative distribution of the above mentioned variables no significant differences were found between the two groups except for M responses, form level (F+%) and F% scores. These differences were in the directions predicted by the hypotheses. To state these distinctions in another way, the socially maladjusted Negro boys gave significantly fewer M responses, displayed significantly poorer form level and obtained significantly higher F% scores than their matched controls.

The foregoing findings were generally congruent with the results of related studies. For example, Robbertse (1955) found that the socially maladjusted group in his study gave significantly fewer M responses, lower F+% ratings and higher F% scores than the normal control. He also found that the former group gave significantly more CF and C responses. In this study, the differences between the groups regarding bright color responses were in the same direction as those of Robbertse's groups but not to a statistically significant degree. In Schachtel's (1950) Rorschach study of 500 delinquents matched with normal controls the former gave significantly fewer M responses but slightly more CF and C responses than their matched controls. The F+% and F% scores were

not reported by Schachtel.

In terms of critical analysis even though statistically significant differences between the two groups were established for M, F⁺, and F% scores the question can be raised as to the relative usefulness of these differences in the psychodiagnostic evaluation of the individual Negro child. It has been found, for example, that minus form level responses (F-) are given by neurotics, psychotics, organics and occasionally by normal subjects. High F% scores have been found in the records of psychopaths, young children, organics, neurotics and normals (Klopfer et al, 1954). In many other studies the M response has not been found to be exclusive to any given diagnostic group. It can therefore be concluded that the differences in the M, F and F% scores of the two groups in this study have limited value as a basis for individual diagnosis. However, the above-mentioned scores can serve as important diagnostic "signs" in the screening of Negro boys who may be vulnerable to the development of undesirable aggressive behavior. For example, if the Rorschach record of an individual Negro child is found to be characterized by high F%, poor form level and an absence of M responses these diagnostic "signs" can be used in relation to the general configuration of the entire record in building up a basis of diagnostic judgment.

Perhaps the most serious limitation of the statistical treatment of the various scoring categories discussed thus far is that the scores have been taken out of the context of the particular configurations in which they originally appeared. As indicated in the literature (Klopfer, et al, 1954) the full meaning of the results on the Rorschach can be understood only through study of interrelated patterns of scores. However, almost all previous Rorschach

studies have treated the scoring categories singly because current statistical methods do not lend themselves readily to the handling of patterns of inter-related variables.

In the present study an effort was made to statistically evaluate the interrelated patterns of scores of both groups by means of a new technique of pattern analysis developed by Rimoldi and Grib (1959). In using this method of pattern analysis the major Rorschach determinants involving movement (M, FM, m), achromatic color (e, C) and bright color (FC, CF, C) were evaluated at the same time in terms of their characteristic patterns. More specifically, the patterns of scores which characterized each group were evaluated against a hypothetical pattern (based on the control group pattern) to determine their similarities and differences. It was found that a marked difference existed between the response patterns of the two groups. It was tentatively concluded that socially adjusted Negro boys can be differentiated from socially maladjusted ones in terms of their interrelated patterns of scores on the Rorschach test. One reason for the tentativeness of the foregoing findings regarding pattern analysis is that an exact test of significance for the difference or similarity between patterns is not yet available (Rimoldi & Grib, 1959, P. 19). However, the present findings have important significance in terms of future Rorschach research because the feasibility of handling patterns of interrelated variables in a way approximating clinical pattern interpretation has been demonstrated in this investigation.

In a final consideration of the quantitative distribution of the various Rorschach scoring categories for the two groups in this study, the following interpretive generalizations can be made: Socially adjusted and socially

maladjusted Negro boys are similar with regard to their responsiveness (R) and their method of approach to situations (W, D, Dd). However, socially adjusted boys surpass the maladjusted ones with respect to the richness of their inner fantasy life and their creative resourcefulness (M). Although the instinctive impulses (FM) and tensions (m) appear stronger in the personalities of the adjusted boys than in the maladjusted ones, the former are still better able to utilize their inner resources to give themselves stability (M=FM, m).

Most significantly, the socially adjusted Negro boys show greater flexibility, more freedom of expression and an overall better balance of personality (lower F%). Similarly they surpass the maladjusted boys in terms of intellectual control and accurate regard for reality (higher F+%).

Both groups of boys appear to be free of serious anxiety (E,k), depressive tendencies (C) and extreme emotionality (high CF, C). The degree of stereotypy (A%) is also similar as is their ability to view things as other people do (P). However, the socially adjusted boys display a slightly greater interest in and empathy with people (H).

It can be speculated that the socially adjusted Negro boys make a more healthy adjustment to their environment than the maladjusted ones because of their better developed imaginal resources. In other words the fantasy activities of the former serve as an aid to their adjustment by giving them inner stability thereby avoiding uncontrolled hostile impulsiveness. On the other hand, the socially maladjusted boys lacking free access to inner fantasy activities react with overt hostile impulsiveness in periods of stress.

Interesting enough, the hypothesis that the socially maladjusted boys were more likely to express their hostile tensions on perceptual and fantasy levels

than the maladjusted boys was partially confirmed in the second phase of this research. Specifically it was found that the controls expressed more hostility than the maladjusted boys on both the Rorschach and the TAT, although the TAT, alone, discriminated between the groups to a statistically significant degree.

The present finding that hostile content is negatively related to overt aggressive behavior is consistent with the results of Cox and Sargent's (1950) TAT study of emotionally disturbed and emotionally stable children. Cox and Sargent wrote the following: "Interesting is the fact that the normal boys expressed significantly more threats of disaster, death, and domination and wrote significantly fewer stories in which no threat was identifiable" (P. 73). On the other hand, various other studies involving the TAT and /or/ the Rorschach method have reported low positive relations between hostile content and overt hostile behavior. Many of these studies however, lacked any comparative data with a control group of normals. In addition their criteria for scoring aggressive responses often appeared ill-defined.

The prediction that those boys who had higher hostile scores on the Rorschach would also obtain higher scores on the TAT was not confirmed. This lack of relationship with regard to hostile content may be the result of the great difference in the structural elements of the two tests.

With regard to the TAT cards it was found that the cards which discriminated between the groups most significantly were those which could be considered structurally neutral in hostile content (e.g., 1, 2, 5, 7BM, 12B, and 13B). The implication of this finding is that the efficacy of the TAT in discriminating significantly between groups may be dependent upon the particular TAT cards selected for comparison.

In a related phase of this research it was found that the TAT hostile content pattern of the adjusted group was different from that of the maladjusted group. The well-behaved boys not only responded with hostile fantasy over a wider range of cards than did the poorly adjusted boys but as indicated tended to express significantly more hostility to cards relatively low in hostile stimulus value.

In a final over-all consideration of the Rorschach and TAT results the question may legitimately be raised as to why the socially adjusted Negro boys do not express in behavior those hostile tensions which they do express in Rorschach and TAT content. From the standpoint of projective tests, it is felt that this question can not be answered by an analysis of content alone but through a combined analysis of TAT content and the contentual and noncontentual elements of the Rorschach record. In other words, whether or not a child will act out his hostile tension via behavior channels can possibly be inferred from a study of the relationship between the thematic material revealed by content and the dynamic configuration of formal scores of the Rorschach protocol.

CHAPTER V

SUMMARY AND CONCLUSIONS

The present study was designed to investigate differences in personality between socially maladjusted and socially adjusted Negro public school pupils, as indicated by the Rorschach and TAT techniques. The experimental, i.e., the socially maladjusted group, consisted of 25 Negro boys between the ages of 10 - 13 years who had been transferred to a social adjustment school because of conduct problems such as fighting, destructiveness, unruliness, stealing, cruelty, bullying and assault. The control group consisted of 25 Negro boys between the ages of 10 - 13 years who attended a regular public school and who were well adjusted socially according to school records and the ratings of their classroom teachers. In the matching of the two groups efforts were made to select pairs of boys who were as much alike as possible with respect to age, mental ability, socio-economical level and religious affiliation. By comparing the different facets of their personalities as shown by the Rorschach and TAT methods, an attempt was made to obtain an insight into the psychological differences between the two groups.

In regard to the Rorschach results, the data were first statistically evaluated by means of single-variable statistical techniques. No statistically significant differences were found between the two groups with respect to the following Rorschach variables: R, W, D, Dd, FM, n, K, k, C, c, FC, CF, C, H, A% and P. It was concluded that the two groups were similar with regard to the

psychological attributes symbolized by the foregoing Rorschach variables.

Statistically significant differences were ascertained between the two groups of subjects with regard to three Rorschach variables: M, F% and F%. These differences were in the directions predicted by the hypotheses. That is, the socially maladjusted boys gave significantly fewer M responses, displayed significantly poorer form level and obtained significantly higher F% scores than their matched controls. It was inferred that the above-mentioned variables may serve as important diagnostic "signs" or as screening devices in psychodiagnostic studies designed to identify the Negro boy vulnerable to the development of undesirable aggressive behavior or without waiting for the actual appearance of serious misconduct.

Inasmuch as the full meaning of the Rorschach results can be understood only through study of the interrelated patterns of scores, an attempt was made to compare the Rorschach response patterns of the two groups of boys by means of a pattern analysis method devised by Rimoldi and Grib. In comparing the patterns of observed responses of the two groups with an hypothetical pattern (based on the control group pattern of responses) a conspicuous difference was found between the two groups in terms of their response patterns.

The major personality differences were considered to be the following: The socially adjusted Negro boys displayed an overall better balance of personality. They showed greater flexibility, spontaneity and freedom of expression. Conversely the maladjusted boys seemed to have a more limited view of the world. They were less accurate in their perceptions, more rigid and less spontaneous in expression. In handling situations the latter were inclined to be cold and impersonal where as the adjusted boys were inclined to be thoughtful and

reflective. Most significantly the socially adjusted boys displayed stronger interest in their inner life. It was speculated that their better developed imaginal processes served as an aid to adjustment by giving them inner stability there by avoiding uncontrolled impulsiveness. On the other hand, the socially maladjusted group, lacking in inner richness and resources upon which they fall back during stressful periods, maintained a behaviorally reactive mode of adjustment.

The final phase of this research represented an effort to determine whether the recently devised hostility scales of Hafner and Kaplan would differentiate between the two groups with respect to hostility. It was first hypothesized that the socially adjusted boys would obtain higher hostile content scores on both the Rorschach and TAT. It was secondly hypothesized that those boys who obtained higher hostile content scores on the Rorschach would obtain similar higher scores on the TAT. Finally, the hostile content patterns of the two groups in the TAT were compared and the similarity ratio between the patterns determined.

The first hypothesis was confirmed only in part. Although the socially adjusted boys obtained higher hostile content scores on both tests, the Rorschach technique failed to discriminate at the specified level of significance between the two groups. However, a statistically significant difference was ascertained with regard to the TAT hostile content scores of the two groups. The second hypothesis concerned with the relative comparability of the boys hostile scores on the Rorschach and TAT was not confirmed.

An analysis of the patterns of hostile content in the TAT by means of the pattern analysis method revealed a difference between the two groups.

Inspection of the patterns indicated that the socially adjusted boys displayed a greater ideational expression of hostility over a much wider range of TAT pictures. Pictures that were so negatively structured (8 BM, 11, 15) that they limited any projection of a positive kind failed to distinguish between the groups. On the other hand, the neutrally structured cards (2, 5, 7BM, 12 M, 13) discriminated significantly with the maladjusted group consistently avoiding the giving of hostile laden stories and the controls expressing much hostility in their stories. It was accordingly inferred that the degree of difference between criterion groups in regard to hostile content in TAT stories may be directly related to the particular TAT cards selected for comparison. It was further inferred that the giving of hostile laden stories to neutrally structured cards may be a contraindication to direct acting out of hostile aggression.

Should the conclusion be that we ought to give opportunity to write or tell hostile to be stories and that in some way the reversal

In a final over-all consideration of the present findings it was concluded that the Rorschach and the TAT, when used together will tend to provide a better diagnostic and predictive index of social maladjustment than either measure used singly.

the aggressive ACTS

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APPENDIX I

RORSCHACH HOSTILITY SCALE

Weighted Score Scale

Definition of Hostility: Hostility is defined as feelings, thoughts or actions which involve destruction, aggression, enmity, derogation, criticality, anger, guilt, negativism, physical deformities, illness and death.

Human Content

4 points:

Humans engaged in human combat; injured, dismembered, or dead humans as a result of combat. (decapitated person, human body cut open, people engaged in a death struggle, people fighting, persons who have been shot or killed, persons with head shot off or part of body shot away)

3 points:

Humans engaged in an argument; angry people; people engaged in competitive physical acts; deformed, injured, diseased or dead humans. (an angry face, armless person, bleeding foot, bloody nose, bruised arm, corpse, crippled person, decomposing leg, deformed statue of person, disfigured person, diseased human organs or tissue, dying or dead person, headless person, legless person, people arguing, people engaged in a tug of war, people glaring at one another, persons bleeding, persons with black eye, person with clenched fists, person with club foot, person with part of body missing, person with scar on face)

2 points:

Humans or mythological figures primarily associated with hostile acts; derogatory descriptions of people; humans engaged in passive hostile acts; human skeletons. (blind man, boxers, cannibals, caveman, devil, drunk, fat person, fiends, ghost, gladiators, gossiping people; homely person, hunchbacked person, monster, people making faces at one another, people staring at one another, person with dunce cap, savages, silly face, skinny person, soldier, sorcerer, stupid person, ugly person, witch)

1 point:

Humans or humanlike figures partially associated with hostile acts.
(guard, knight in armor, military police, policeman, scarecrow)

0 points:

No hostile content indicated. (sailor)

Animal Content**4 points:**

Animals engaged in a death fight; animals killing or devouring prey.
(animal devouring its prey)

3 points:

Animals fighting or about to attack; injured, deformed or killed animals; decomposing dead animals; animals eating dead animals which they have not killed. (animal about to strike, animal cut open, animals fighting, animals growling at one another, animal shot, animal with tail missing, bear with its head cut off, bleeding animals, bulls charging each other, butterfly with torn wing, gored animal, butting goat, crawfish cut open, decayed skin, decomposing carcass, fly with wings removed, headless dog, killed animal, poison cobra, squashed insect, vulture eating a carcass, pinned down butterfly)

2 points:

Animals primarily associated with hostile acts; parts of animals associated with hostility; dead animals; dressed animals; dismembered animal skin. (animal skin with head cut off, buzzard claws, crab pinchers, crocodile, cut open and dressed animal, dead animal, dragon, gorilla, grizzly bear, leopard, lion, octopus, pinchers, scorpion, shark, snake, snapping turtle, sting ray, teeth, vulture, wasp, wild dog, wolf) weird gargoyle

1 point:

Animals or parts of animals with some hostile associations; animal skeletons. (animal skeleton, animal skull, bee, bear, boiled lobster, bull, crab, eagle, fox, germ, horns, live lobster, mosquito, mule, rat, skunk, spider, weasel)

0 points:

No hostile content indicated. (donkey, mink, moose, owl, water buffalo)

Inanimate Content**3 points:**

Objects primarily of a hostile nature seen in motion; objects used primarily for the killing of humans; abstractions depicting hostility.
(atomic bomb explosion, bomb exploding, bullet going thru something,

dagger, electric chair, evil fighting, guillotine, poison gas, red represents war)

2 points:

Objects usually associated with hostile acts; destructive acts of nature; death symbols. (axe, battleship, bazooks, black jack, bomb, bomber plane, bullet, coffin, fire, grave stone, guided missile, gun, hand grenade, harpoon, hunting knife, jet fighter plane, landslide, lightning, military tank, night stick, primitive war mask, sharp icycle, spear, submarine, sword, thunderhead, tomahawk, torpedo, volcano erupting, whip, wind, storm)

1 point:

Objects sometimes associated with hostile acts. (bow and arrow, firecracker, fish hook, pocket knife, rocket, scissors, sling shot)

0 points:

No hostile content indicated. (pliers, smog, table knife, torn flower)

TAT HOSTILITY SCALE

Weighted Score Scale

4 points:

Themes involving direct physical hostile acts between people or towards the self. (criminal assault; fighting; knifing or people; murder, physical torture; rape, shooting of people; suicide, war)

3 points:

Themes involving hate; thoughts, feelings, dreams or threats of direct physical hostile acts between people; themes involving punishment, permanent debilitating injury, and death; themes of direct physical hostile acts involving animals. (accidental death; animals attacking humans; animals fighting; capital punishment; dreams or thoughts of death; fighting, murder, self injury, sexual attack, and suicide; drowning, feelings of hate, hunting, people dying, persons harming animals; punishment involving deprivation; readiness to kill or physically attack; revenge; threats of harm or punishment.

2 points:

Themes involving verbal hostility; derogatory description of people; anti-social acts; people forced by others to do things; hostile or negative emotionality; rejections; illness and accidents involving injury; destruction of inanimate objects; predatory animals, destructive forces of nature; weapons. (anger, arguing, cheating; coercion; criminals; criticality; criticism of others; domination; dreams of illness, drinking, embezzlement; forgery; inconsiderate people; jealousy; kidnapping; lying, mentally retarded person; negativism, people ignoring or snubbing one another; people smashing things; people with physical deformities; plagiarism; policemen; readiness for verbal attack; robbery; sarcasm; self-depreciation; someone forced to do something against their wishes; surgery; swearing; tornadoes; truancy; verbal disagreement; verbal rebuke; verbal threat other than physical harm)

1 point:

Themes involving emotional deprivation; guilt feelings; escape; misfortunes; death symbols; broken objects; the military. (cemeteries and graves; people hiding; people running away from something; remorse; sadness; shame; soldiers)

0 points:

Themes without hostile content. (economic hardship; insects)

APPENDIX II

TAT PICTURES

Following are Murray's descriptions (1943) and numbers of the fourteen pictures selected for this study:

1. A young boy is contemplating a violin which rests on a table in front of him.
2. Country scene: in the foreground a young woman with books in her hand; in the background a man is working in the fields and an older woman is looking on.
- 3BM. On the floor against a couch is the huddled form of a boy with his head bowed on his right arm.
5. A middle-aged woman is standing on the threshold of a half-opened door looking into a room.
- 6BM. A short elderly woman stands with her back turned to a tall young man. The latter is looking downward with a perplexed expression.
- 7BM. A gray-haired man is looking at a younger man who is sullenly staring into space.
- 8BM. An adolescent boy looks straight out of the picture. The barrel of a rifle is visible at one side and in the background is the dim scene of surgical operation, like a reverse image.
10. A young woman's head against a man's shoulder.
11. A road skirting a deep chasm between high cliffs. On the road in the distance are obscure figures. Protruding from the rocky wall on one side is the long head and neck of a dragon.
- 12BM. A young man is lying on a couch with his eyes closed. Leaning over him is the gaunt form of an elderly man.
- 13BM. A little boy is sitting on the doorstep of a log cabin.
15. A gaunt man with clenched hands is standing among gravestones.

16. Blank card.
20. The dimly illumined figure of a man in the dead of night leaning against a lamp post.

APPENDIX III

Work Sheet for Scoring of Hostile Content

RORSCHACH HOSTILITY SCALE

NAME		GROUP:	
Cards	Score	Cards	Score
I		VI	
II		VII	
III		VIII	
IV		IX	
V		X	
1. Human Content _____		2. Animal Content _____	
		3. Inanimate Content _____	
1. Total _____		2. Total _____	
		3. Total _____	
Final Total _____			

APPENDIX III (Continued)

CARDS

TAT HOSTILITY SCALE

CARDS

ScoreScore

1

10

2

11

3BM

12M

5

13B

6BM

15

7BM

16

8BM

20

Total

APPENDIX IV

RATING SCALE FOR PUPIL ADJUSTMENT

Be sure to compare the pupil with others of his own age group. Place a (X) in front of the letter below which best describes the pupil.

- I. Over-all Emotional Adjustment
(Definition: Total emotional adequacy in meeting the daily problems of living as shown in school.)
 - A. Very well adjusted
 - B. Well adjusted
 - C. Moderately adequate adjustment
 - D. Poorly adjusted
 - E. Very poorly adjusted
- II. Social Maturity
(Definition: Ability to deal with social responsibilities in school, in the community, and at home, appropriate to his age.)
 - A. Very superior social maturity
 - B. Slightly superior social maturity
 - C. Average social maturity
 - D. Slightly inferior social maturity
 - E. Very inferior social maturity
- III. Tendency Toward Depression
(Definition: Tendency toward pervasive unhappiness.)
 - A. Generally very happy
 - B. Moderately happy
 - C. Occasionally unhappy
 - D. Tendency toward depression
 - E. Generally depressed
- IV. Tendency Toward Aggressive Behavior
(Definition: Overt evidence of hostility and/or aggression toward other children and/or adults.)
 - A. Rarely aggressive
 - B. Occasionally aggressive
 - C. Fairly aggressive
 - D. Frequently aggressive
 - E. Extremely aggressive
- V. Extroversion-Introversion
(Definition: Tendency toward living outwardly and expressing his emotions spontaneously vs. tendency toward living inwardly and keeping emotions to himself.)

APPENDIX IV (Continued)

- A. Extremely extroverted
- B. Characteristically extroverted
- C. About equally extroverted and introverted
- D. Moderately introverted
- E. Extremely introverted

VI. Emotional Security

(Definition: Feeling of being accepted by and friendly toward one's environment and the people in it.)

- A. Extremely secure
- B. Moderately secure
- C. Only fairly secure
- D. Moderately insecure and apprehensive
- E. Extremely insecure and apprehensive

VII. Motor Control and Stability

(Definition: Capacity for effective coordination and control of motor activity of the entire body.)

- A. Extremely good motor control and stability
- B. Moderately good motor control and stability
- C. Fair motor control and stability
- D. Moderately poor motor control and stability-restless, hyperkinetic
- E. Extremely poor motor control-markedly restless, hyperkinetic

VIII. Impulsiveness

(Definition: Tendency toward sudden or marked changes of mood.)

- A. Extremely stable in mood
- B. Stable in mood
- C. Usually stable-only infrequent and minor mood changes
- D. Unstable in mood-shows marked mood changes on occasion
- E. Extreme changes in mood-shows marked or sudden mood changes frequently

IX. Emotional Irritability

(Definition: Tendency to become angry, irritated, or upset.)

- A. Unusually good-natured
- B. Good-natured - rarely irritable
- C. Fairly good-natured - occasionally irritable
- D. Moderately irritable - frequently shows moderate irritation
- E. Extremely irritable - frequently shows marked irritation

X. School Achievement

(Definition: Over-all evaluation of pupil's competency in school subjects, relative to his own age group.)

- A. Very superior
- B. Slightly superior
- C. Average
- D. Slightly inferior
- E. Inferior

XI. School Conduct

(Definition: Conduct in the classroom situation as evidence of his ability to accept the rules and regulations of the school community.)

APPENDIX IV (Continued)

- A. Exceptionally good conduct
- B. Superior conduct
- C. Average conduct
- D. Somewhat inadequate conduct - troublesome disciplinary problems
- E. Very inadequate conduct - very serious disciplinary problem

XII. Physical Condition

List any physical condition which may handicap the child in some or all phases of his adjustment to school life.

1.	3.	5.	7.	9.	11.
2.	4.	6.	8.	10.	12.

Comments: _____

Table 5

Difference in F % Scores Between Matched Pairs as Indicated by the
Wilcoxon Matched Pairs Signed Ranks Test

Pair	Adjusted	Maladj.	d	Rank of d	Rank with
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Approval Sheet

The dissertation submitted by Norman G. Kerr, Jr., has been read and approved by a board of five members of the Department of Psychology.

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

The dissertation is therefore accepted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

January 15, 1962

Date

Froula Kobler

Signature of Adviser