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A study of the performance of ninety-eight high school boys on the K-D Proneness Scale and the Heston Personal Adjustment Inventory

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BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Thesis

A STUDY OF THE PERFORMANCE OF
NINETY-EIGHT HIGH SCHOOL BOYS ON THE
K-D PRONENESS SCALE AND THE HESTON
PERSONAL ADJUSTMENT INVENTORY

Submitted by

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(B. S. in Ed., Boston University, 1949)

In Partial Fulfillment of Requirements for
The Degree of Master of Education

1952

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CHAPTER I
THE PROBLEM

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THE PROBLEM

The juvenile delinquent--who is he? By law, the delinquent child is one "between the age of seven and seventeen who violates any city ordinance or town by-law or commits an offense not punishable by death."^{1/} This, indeed, is a vague definition and does not take into consideration the children who have not been charged legally. The definition should include not only those who break the law but those who are emotionally needy and show delinquent tendencies. We must realize that cultural lag is present at all times and that juvenile delinquency is deeply rooted in the eternal problem of living.^{2/}

Now, then, can we help those who are emotionally needy? When we say emotionally needy, we must understand that some delinquents are emotionally needy; not all emotionally needy children are delinquent. The problem is one of differentiating the delinquent from the non-delinquent. Zakolski^{3/} feels that "the major difference between delinquents and non-delinquents seems the initial psychological inadequacy plus the development of a new, socially unacceptable adjustive reaction which society designates as delinquency."

^{1/}Acts and Resolves of Massachusetts, 1948, Ch. 310, Sec. 3.

^{2/}Negley K. Teeters and John Reinemann, The Challenge of Delinquency, Prentice-Hall Inc., New York, 1950.

^{3/}F. C. Zakolski, "Studies in Delinquency I," Pedagog. Sem., (March, 1949), 74: 117.

Banay^{1/} feels that delinquent behavior is as purposive as any other.

"It is an attempt on the part of the individual to attain equilibrium in his environment. When the individual's needs cannot be filled directly and naturally there will be an effort to satisfy them in some other way. When this deviant behavior comes in conflict with social laws, the individual's acts are said to be anti-social, and he is labeled as a criminal or a delinquent ... Delinquency is not an instinctive act. It is the specific outcome of all the forces of the personality including the feeling-tone and the realm of thought."

Conclusions drawn by Healy and Bronner^{2/} state that delinquency must be considered as a method of self-expression where socially accepted behavior has been blocked by discomforts arising from unsatisfying family relations. Delinquency bolsters the individual's ego by giving him status as a delinquent.

With the thought, then, that delinquent behavior is purposive, we must realize why the child acts as he does. Here are, of course, many interwoven factors that play on the child. Most authorities are agreed that there is no one factor responsible for the causation of delinquency.^{3/} Some children who become delinquent have siblings who do not become delinquent. Therefore, it is more than the environmental forces alone --personality plays a very large role.

PURPOSE OF THE STUDY

The purpose of this study, then, is concerned with the prediction of delinquency in further validation of the K-D Proneness Scale^{4/} along with using the Heston Personal Adjustment Inventory^{5/} to see if any of the personality factors measured by this instrument correlate with scores. By admin-

1/Ralph S. Bany, Youth in Dispair? Coward-McCann Inc., New York, 1948, pp. 20-3.

2/William Healy and Augusta Bronner, New Lights on Delinquency and Its Treatment, Yale University Press, New Haven 1936.

3/Eugene Davidoff and Elinor S. Hoetzel, The Child Guidance Approach to Juvenile Delinquency, Child Care Publications, N.Y. 1951.

4/William C. Kvaracens, K-D Proneness Sacle, World Book Company, Yonkers-on-Hudson, New York, 1950.

5/Joseph C. Heston, Personal Adjustment Inventory, World Book Company, Yonkers -on-Hudson, New York 1949.

istering these two instruments to the same group of boys, comparisons may be drawn and correlations made.

JUSTIFICATION

More and more the responsibility for delinquents is being transferred from correctional institutions to educational and Youth Services. In 1947, more than seven hundred of the leading authorities on juvenile delinquency attended the National Conference on Prevention and Control of Juvenile Delinquency, and they agreed, "Studies in juvenile delinquency and crime indicate that prevention is less expensive than cure."^{1/}

Most authorities agree that delinquency has its source in maladjustment, usually in childhood. Reckless^{2/} feels that the juvenile delinquent is not a "type" but a normal child gone astray. It is the social not the biological factors, and such things as economic situation, size of family, broken homes, parent-child relations, social status, neighborhood conditions, recreational facilities, education and occupation, truancy and school maladjustments have a definite relationship to these social factors.

Ellingston, too, states that "the careers of nearly all habitual criminals who have been studied in prisons can be traced to a beginning in adolescence or childhood."^{3/}

^{1/}National Conference on Prevention and Control of Juvenile Delinquency, "Report on Schools and Teacher Responsibilities," Washington, D. C., United States Government Printing Office, 1947, p. 30.

^{2/}Walter C. Reckless and Mapheus Smith, Juvenile Delinquency, McGraw-Hill Book Co. Inc., N. Y., 1932.

^{3/}John R. Ellingston, Protecting Our Children From Criminal Careers, Prentice-Hall Inc., N. Y., 1948, p. 11.

The schools, then, can do much to identify delinquency from children. Truancy is highly correlated with delinquency.^{1/} Most authorities agree that truancy is symptomatic of some maladjustment that is more serious than the mere disinclination to attend school.^{2/}

A conclusion in the recent Gluecks' Study states

"....how every necessary it is that schools be equipped to discover potential delinquents before symptoms of maladaptive become fixed. The testing of children early and periodically to detect malformations of emotional development at a state when the twig can still be bent is as necessary as are periodic medical examinations. In other words, a preventive medicine of character and personality is a crying need of the times."^{3/}

The Massachusetts Youth Study definitely states that "anything which in a broad way promotes the welfare of youth should also aid in the reduction of delinquency."^{4/}

Many writers on the subject of delinquency such as Banay^{5/} and Carr^{6/} believe that the only efficient way to treat juvenile delinquency is through preventive measures.

Therefore, the early detection of delinquency prone children would help to stop delinquency from firmly entrenching itself as a pattern of behavior. Thus this study seems well justified.

^{1/}Edwin Powers and Helen Witmer, Prevention of Delinquency, Columbia University Press, N. Y., 1951.

^{2/}Teeters, op. cit.

^{3/}Sheldon and Elinor Glueck, Unraveling Juvenile Delinquency, Commonwealth Fund, N. Y., 1950, p. 228.

^{4/}Massachusetts Youth Study, Wright and Potter Printing Co., Boston, 1941.

^{5/}Banay, op. cit.

^{6/}Lowell J. Carr, Delinquency Control, Harper Bros., N. Y., 1941.

SCOPE OF THE PROBLEM

The K-D Proneness Scale and the Heston Personal Adjustment Inventory were administered to a group of one hundred boys, juniors in high school. The community chosen was a borderline area of metropolitan Boston. The Director of Guidance in the system divided the group on the basis of high achievers and low achievers and administered both tests.

DEFINITION OF TERMS

"Delinquency" as a term used in this study refers to a child "between the age of seven and seventeen who violates any city ordinance or town by-law or commits an offense not punishable by death."

"Delinquency proneness" is interpreted in this study to mean a tendency toward delinquency.

"Low achievers" in this study refers to one criterior group chosen on the basis of school grades.

"High achievers" in this study refers to the other criterior group chosen on the basis of school grades.

RESTATEMENT OF THE PROBLEM

This study is designed to further validate the K-D Proneness Scale and to obtain correlation between the K-D and The Heston Inventory. If there are one or more traits in the Heston which show high correlations with the delinquents or non-delinquents this fact will also be a helpful guide in identifying delinquents.

CHAPTER II
REVIEW OF RESEARCH

CHAPTER II

REVIEW OF RESEARCH

This Chapter will endeavor to cover all research pertinent to this study. Previous research on delinquency tests will be covered as well as all paper and pencil personality tests reported used with delinquents. Two studies will be discussed in more detail, more emphasis put on them because of their more recent publication. Previous research reported on the two instruments used in this Study, the K-D Scale and the Heston Inventory will also be included.

PREVIOUS RESEARCH ON DELINQUENCY TESTS

Behavior Cards. The only test which has been constructed exclusively for a delinquency test is called The Stodgill Behavior Cards. Ralph Stodgill reported the total scores on the Test were found to differentiate between two groups i.e., delinquent boys and the control group.^{1/} The test is a low pressure "test-interview" consisting of one hundred and fifty cards describing specific behaviors. If the answer is "Yes" the card goes in one box--if "No" the other box. If further refined the Test might prove "avaluable supplement to the achievement, intelligence and ~~apptitude~~ tests now commonly used in schools and clinics."^{2/}

^{1/}Ralph M. Stodgill, "A Test Interview for Delinquent Children," Journal of Applied Psychology, (June, 1940), 24: 325-33.

^{2/}Oscar K. Muros(Editor), The Third Mental Measurements Yearbook, "Behavior Cards", William C. Kvaraceus, Rutgers University Press, New Brunswick, New Jersey, 1949, pp. 24-5.

Ludden Study. A Study was made by Ludden^{1/} to discover a method of predicting juvenile delinquency from school records. He felt that forecasting was feasible within certain limits even though human behavior is modifiable. He used such criteria as (1) elements of the environment such as living in a delinquent area, (2) IQ below ninety on the Otis Group Test, (3) terms repeated in school, (4) truancy, (5) tardiness, and (6) intermediate position in siblings. His conclusions were that this method requires time and skill- yet not enough to make it impractical. However, he felt the procedure might be of greater value if used in conjunction with other predictive techniques.

Glueck Study. In the most recent Gluecks' Study (which is discussed further on in this chapter) Prediction Tables were set up on the basis of the Gluecks' research. These Prediction Tables, if valid, would greatly aid in pointing out the delinquent child. However, more work needs to be done in further study before the Tables can be widely used.

PERSONALITY TESTS USED WITH DELINQUENTS

Paper and pencil personality tests (ratings and questionnaires) are of questionable value. Merrill says:

"One of the ways of diagnosing personality is to apply personality tests....Paper and pencil tests are hard to interpret because the answers to questions about oneself and self-ratings are so apt to be distorted by the very effective factors, attitudes, and defense mechanisms that we are attempting to evaluate. Thus tests, themselves, as fact-finding devices are of uncertain worth. The child wants to give a good impression, but even if he does give the response that he genuinely believes to be true about himself that belief is in part determined by what he wants to believe about himself as well as by the norms of our culture."

^{1/}Wallace Ludden, "Anticipating Cases of Juvenile Delinquency," School and Society, (February, 1944), 59: 123-26.

^{2/}Maud Merrill, Problems of Child Delinquency, Houghton-Mifflin Company, Boston, 1947, pp. 25-6.

These tests do reveal, at times, unsuspected areas of tensions. However, as tools for clinicians, personality tests have little to offer toward understanding the delinquent. While the reliabilities have been notoriously high, they do not always measure what they purport to measure.^{1/} There is a general over-estimation of self-halo effect when normal persons take personality questionnaires. However, personality testing is still young and as it becomes more refined it may throw much light on our understanding of human nature.

The following is a resume of the research on existing personality tests used with delinquents.

Bell Adjustment Inventory. Bell Adjustment Inventory was used in a study by Bartlett and Harris on a group of one hundred and nineteen known delinquent boys from the Indiana Boys' School and one hundred and forty-eight grade and high school boys. There was no significant difference reported between the two groups on its general social adjustment scale but "marked differences did appear in the degree of emotional adjustment."^{2/}

Whittman and Huffman also used the Bell Inventory with a group of teen-aged delinquents and a group of normal high school students. They found, despite some rather marked differences on home adjustment and emotional adjustment, "none of these differences are statistically significant."^{3/}

^{1/}Albert Ellis, "The Validity of Personality Questionnaires," Psych. Bulletin, (Sept., 1946), 43: 385-6

^{2/}Edward R. Bartlett and Dale B. Harris, "Personality Factors in Delinquency," Sch. and Soc., (May, 1936), 43: 654.

^{3/}Mary P. Wittman and A. V. Huffman, "A Comparative Study of Development, Adjustment and Personality Characteristics of Psychotic, Psychoneurotic, Delinquent and Normally Adjusted Teen-Aged Youths," Jour. of Genetic Psychol., (June, 1945), 66: 178-9.

There was a wide range of scores for each groups from excellent to very poor adjustment in most categories which produced a large standard deviation. They reported overlapping between the groups.

Zakolski^{1/} also used the Bell Inventory in his study of personality structure of delinquent boys and found only the health adjustment score of the Bell to differentiate between the groups.

Therefore, on the basis of these studies, the Bell Inventory was not found to show statistically significant differences between delinquents and non-delinquents. There was disagreement in the three studies cited as to whether the home adjustment, emotional, and health adjustment parts of the Bell differentiated.

The Bernreuter Scale. The Bernreuter (B₁-N) Scale was used as one of a battery of twenty-four tests by Casselberry on two groups, delinquents and non-delinquents and it did not show significant differences in any of the scores.^{2/}

Horsch and Davis found that the B₁-N Score did differentiate reliably between normal high school students and delinquents in a state industrial school. However, it did not differentiate state reformatory inmates from college students of equivalent ages.^{3/}

Zakolski also found that the B₁-N score did differentiate in his study.^{4/}

^{1/}F. C. Zakolski, "Studies in Delinquency," Pedagog. Sem., (March 1949), 74: 109-117.

^{2/}William S. Casselberry, "Analysis and Prediction of Delinquency," J. Juvenile Res., (January, 1932), 16:1-31.

^{3/}Alfred C. Horsch, and Robert A. Davis, "Personality Traits and Conduct of Institutionalized Delinquents," J. Crim. Law, 29:241-4.

^{4/}Zakolski, op. cit.

Therefore, on this basis, the B₁-N score of the Bernreuter did differentiate in two of the three studies cited.

Adolescent Adjustment Inventory. This Inventory (Cowas), a self-marking personality questionnaire comprised of nine categories, did not yield statistically significant differences in any of the nine topics as reported by Zakolski.^{1/}

Haggerty-Olson-Wickman Behavior Rating Schedules. These Rating Schedules were used in the Cambridge-Somerville Youth Study by the teachers of the children used in this study. The conclusions drawn were that "as a device solely for correctly spotting the pre-delinquents its predictive value is not high."^{2/} It did differentiate by its scores those boys who became most delinquent and/or committed from those who were least delinquent and not committed.

Merrill commented on this Rating Scale pointing out these difficulties:^{3/}

1. Being sure that the Scale measures what it purports to measure, e.g. validity.
2. Tendency of rates to be influenced in rating one trait by the way he has rated previous traits.
3. Easier to rate certain personality traits (aggressive behavior) than it is to rate sensitivity, tendency to worry etc.

1/Ibid.

2/Edwin Powers, and Helen Witmer, Prevention of Delinquency, Columbia University Press, New York, 1951, p. 291.

3/Merrill, op. cit. p. 26.

She feels that the rater must be well enough acquainted with the child he is rating to enable him to judge his subject by comparing him with children his own age on thirty-five different intellectual, physical, social and emotional traits.

Therefore, there seems to be no evidence that the Haggerty-Olson-Wickman Rating Scale is a valid instrument to be used in delinquency studies.

Maller Character Sketches. The Maller Character Sketches, Parts I and II were used by Daniel and they gave the greatest differentiation between negro delinquent and non-delinquent boys of the three tests used in his study.^{1/}

Boynton and Walsworth in a study of delinquent and non-delinquent girls found a difference on the scores of the Maller questionnaire but it was not statistically significant.^{2/}

The Maller Character Sketches, therefore, seem of dubious value as reported by these two studies.

Minnesota Multiphasic Personality Inventory. Capwell reported that the Minnesota Multiphasic Personality Inventory which she used with delinquent and non-delinquent girls significantly differentiated on all scales but the Hysteria Scale. It particularly differentiated on the Psychopathic Scale.^{3/}

White House Scale. Cavan reported that the White House Scale (a brief questionnaire of twenty-four questions selected from the Mathews, Cody and Slanson revisions of the Woodworth Personal Data Sheet) differentiated

^{1/}Robert P. Daniel, "Personality Differences Between Delinquent and Non-Delinquent Negro Boys," J. Negro Ed (October, 1932, 1: 381-7

^{2/}Paul L. Boynton, and Barrier M. Walworth, "Emotionality Test Scores of Delinquent and Non-Delinquent Girls," J. Ab and Soc. Psychol, (1927), 38: 187-204.

^{3/}Dora F. Capwell, "Personality Patterns of Adolescent Girls II," J. Ap. Psychol, (August, 1945), 29: 289-97.

clearly between a group of adolescent delinquents and non-delinquents. She also confirmed the adaptability of the Scale for use with girls.^{1/}

Personal Index. Loofbourow and Keys^{2/} selected a battery of tests used in the selection of delinquents and studied the significance of this battery. They found the (1) false vocabulary test; (2) a social attitude test; and (3) an adjustment questionnaire to be most valuable. The revised battery showed highly significant differences between delinquents and non-delinquents. The resulting test, the Personal Index, is a group test which may be used for the detection of attitudes indicative of problem behavior.

Pressey Interest Attitude Tests. These tests were used in several studies. Bridges and Bridges found that delinquents showed more worries than normal boys according to the results from this test.^{3/}

Courthial also used the Pressey Tests with delinquent and non-delinquent girls with the results showing that the delinquent girls found fewer things wrong but had a wider range of interests to which were conducive to unrest and instability than the non-delinquent group.^{4/}

1/Ruth S. Cavan, "The Murray Psychoneurotic Inventory and The White House Conference Inventory," J. Juvenile Res., (January, 1934), 18: 23-7

2/Graham C. Loofbourow, and Noel Keys, "A group Test of Problem Behavior Tendencies in Junior High School Boys," J. Ed. Psychol (December, 1933) 24: 641-53.

3/James W. Bridges and K. M. B. Bridges, "Psychological Study of Juvenile Delinquency by Group Methods," "Genetic Psychology Monographs, (September, 1926), 1: 413-56

4/Andree Courthial, "Emotional Differences of Delinquents and Non-Delinquent Girls of Normal Intelligence," Archives of Psychology, No. 133, 1931.

Durea,^{1/} in two studies, found that the Pressey tests do show a difference. In one study,^{2/} he administered the test to three hundred and sixteen delinquent boys. The most seriously delinquent boys showed less expressed sensitiveness to anger and fear states, more blameworthy circumstances and more anxiety states.

Durea and Assum administered the Pressey tests to delinquent and non-delinquent girls. Twenty-nine items were found to differentiate the groups. The mean total scores on the differential items were significant. There was some overlapping however.^{3/}

Odoroff and Harris used The Pressey Tests on (1) a group of boys in a training school, (2) boys in a high school in a delinquency area, and (3) an unselected group of boys. The study indicated that the delinquent boys' scores were more like the scores of the non-delinquent boys who came from like social background than delinquents are like unselected boys in general.^{4/}

Capwell^{5/} found these tests did not differentiate between delinquent and non-delinquent girls.

1/Mervin A. Durea, "Personality Characteristics of Juvenile Delinquents I", Child Development (1937), 8: 115-28.

2/Mervin A. Durea, "Personality Characteristics of Juvenile Offenders in Relation to Degree of Delinquency," Pedagog. Sem, (June, 1938), 52: 269-83.

3/Mervin A. Durea, and A. L. Assum, "The Reliability of Personality Traits Differentiating Delinquent and Non-Delinquent Girls," J. Genetic Psychol, (June, 1948), 72: 307-11.

4/Maurice E. Odoroff, and Dale B. Harris, "A Study of the Interest-Attitude Test Scores of Delinquent and Non-Delinquent Boys," J. Ed. Psychol, (January, 1942), 33: 13-24.

5/Capwell, op. cit.

The Pressey Interest-Attitude Tests, then, seems to differentiate fairly well delinquent boys from non-delinquent boys as here reported. Two studies disagree as to whether it differentiates between delinquent and non-delinquent girls.

Rogers Test of Personality Adjustment. This test was used by Babcock^{1/} on delinquent and non-delinquent boys and no significant difference was found.

In the Boynton and Walworth study,^{2/} the Rogers test was one of several personality tests used and was found to differentiate between delinquent and non-delinquent girls.

Merrill offers a criticism of this test. She feels that the child may have difficulty in understanding instructions and that it is a difficult test to score. She describes the test as an "attempt to gauge adjustment indirectly, in that the purpose of the questions is not obvious to the child subject."^{3/}

On the basis of the two studies cited here, it seems that this test may be able to differentiate but perhaps is not the best one available.

Sweet Personal Attitude Test. Another test which has been used in the Sweet Personal Attitude Test. It is a self-rating device with three ratings; i.e. (1) how I feel, (2) how most boys feel, and (3) how I think I ought to feel. Therefore it yields the Self-Ordinary-Ideal ratings.

^{1/}Marjorie E. Babcock, "A Comparison of Delinquent and Non-Delinquent Boys by Objective Measures of Personality," Columbia University Press, N. Y., 1932.

^{2/}Boynton and Walworth, op. cit.

^{3/}Merrill, Op. cit. p. 29.

According to Merrill,^{1/} this test did not serve to differentiate between delinquents and non-delinquents nor were the scores meaningful for personality evaluation.

Babcock^{2/} found no significant differences between the means of delinquent and non-delinquent boys in any of the seven categories of the test.

Daniel,^{3/} in his study with negro delinquent and non-delinquent boys found there was a reliable difference between the two groups.

Thurstone's Attitude Scales. The Scales on Law, God, and the Church were used by Middleton and Wright in a study with ninth and tenth grade delinquent and non-delinquent children. Statistical differences showed that (1) delinquent girls had more favorable attitudes than non-delinquent girls toward Law, God and Church, (2) delinquent girls had more favorable attitudes toward God and Church than delinquent boys and (3) non-delinquent boys had more favorable attitudes toward God than non-delinquent girls.^{4/}

In another study, Middleton and Fay used the Thurstone Scales on Sunday observance, The Bible, and war with a group of delinquent and non-delinquent girls. Surprisingly, the delinquents showed measured attitudes more favorable to Sunday observance and the Bible. There was no significant difference shown on War.^{5/}

^{1/}Merrill, Op. Cit., p. 156.

^{2/}Babcock, Op. Cit., p. 46.

^{3/}Daniel, Op. Cit.

^{4/}Warren C. Middleton and R. R. Wright, "A Comparison of a Group of Ninth and Tenth Grade Delinquent and Non-delinquent Boys and Girls on Certain Attitude Scales, "Pedagog Sem, (1941) 58: 139-50.

^{5/}Warren C. Middleton and Paul J. Fay, "Attitudes of Delinquent and Non-delinquent Girls Toward Sunday Observance, The Bible and War," J. Ed. Psychol (1941), 32: 555-8.

Thurstone's Scales mentioned in this study do seem to differentiate to some degree between delinquents and non-delinquents.

Social Adjustment Inventory. The Washburne Social Adjustment Inventory differentiated in two-separate studies. The author ^{1/} gave it to a group of normal high school children and a group of prisoners of the same age range. He found a highly significant difference between the results for these two groups.

Capwell ^{2/} also reported that the Washburne Inventory discriminated the delinquent from the non-delinquent in the degree of personality adjustment.

Zakolski ^{3/} found that only the social adjustment score of the Inventory discriminated.

Personal Data Sheet. The Woodworth-Mathews Personal Data Sheet is perhaps the most widely reported personality test used with delinquents. Revised in 1917 for use with the United States Army there have been several revisions.

Bridges and Bridges used the Mathews Questionnaire with a group of delinquent boys in a Canadian Training School and found twenty-one symptomatic responses as compared with nine for an unselected group. Marked conflict with home and school was shown as well as a marked tendency to bully other boys. ^{4/}

In another study by Bridges with a group of delinquent girls, many symptoms of psychopathic and emotionally unstable conditions were noted on

^{1/}John N. Washburne, "A Test of Social Adjustment," J. Ap. Psychol., (April, 1935), 19: 125-44.

^{2/}Capwell, op. cit.

^{3/}Zakolski, op. cit.

^{4/}Bridges and Bridges, op. cit.

the Mathews Test. The out-standing cause leading to the delinquency of these girls was their poor home environment.^{1/}

Courthial, using the P. D. Sheet, found the delinquent girls to be strongly emotional, have lack of inhibitory forces, more conflicts with the environment, and less well adjusted both socially and emotionally than the non-delinquent girls.^{2/}

Daniel found the Woodworth-Mathews Questionnaire to differentiate between delinquent and non-delinquent negro boys. He also felt that, from this test, delinquents differed from non-delinquents in what they do and how they feel in degree rather than in kind.^{3/}

Slawson, also using this instrument, found the delinquents to have defective emotional make-ups. The delinquent boys, on the whole, were decidedly inferior in the status of their emotional stability as compared with a fairly unselected group of normal boys.^{4/}

Bartlett and Harris found statistically significant differences on the P. D. Sheet. Their results indicated greater emotional instability with the delinquent group.^{5/}

Snyder found that with this questionnaire the delinquents gave only slightly higher percentages of unfavorable responses than did the normal

1/James W. Bridges, "A Study of a Group of Delinquent Girls,"
J. Genetic Psychol (1927), 34: 187-204.

2/Courthial op. cit.

3/Daniel op. cit.

4/John Slawson, "Psychoneurotic Responses of Delinquent Boys,"
J. Abn and Soc Psychol, (1925), 20: 251-81.

5/Bartlett and Harris, op. cit.

children on whom it was standardized. Therefore, she concluded that it "may or may not indicate slightly greater emotional instability among the delinquent children."^{1/}

Casselberry found no significant differences yet felt the delinquents showed somewhat less emotional stability.^{2/}

Ascher and Haven used the Woodworth-Mathews Questionnaire plus twenty-three of their own questions with several hundred delinquents and non-delinquents in Kentucky and found there was a significant difference in the responses of the two groups to only six of the ninety-three questions.^{3/}

Therefore, on the basis of this reported data, the Woodworth-Mathews Personal Data Sheet appears to have made a fairly good showing in differentiating between delinquents and non-delinquents.

Cushing and Ruch, using the Woodworth-Cady revision with a group of delinquent and non-delinquent girls in Iowa, found it to be highly significant in differentiating powers.^{4/}

Social Maturity Scale. The Vineland Social Maturity Scale did not serve to differentiate between delinquents and non-delinquents. Doll in his study with delinquent boys in New York reported that the conclusions

^{1/}Snyder, op. cit., p. 183

^{2/}Casselberry, op. cit.

^{3/}Eaton J. Asher, and S. Edson Haven, "The Reactions of State Correctional School and Public School Boys to the Questions of an Emotional Inventory," J. Juvenile Res., (1930), 14: 96-106.

^{4/}Hazel M. Cushing and G. M. Ruch, "An Investigation of Character Traits in Delinquent Girls," J. Ap Psychol., (February, 1927), 11: 1-7.

suggested the social competence of the delinquents was strikingly below that of normal non-delinquents, but how much of that difference was due to mental retardation could not be ascertained in his study.^{1/} Capwell reported that the results from the Vineland Scale showed differences which were more related to intelligence than delinquency.^{2/}

Summary. Of the research so far reported, a summary would indicate that:

1. Personality tests are still in an experimental stage and there is need of further validation of the instruments.
2. Measurement of personality adjustment is difficult--there are few such tests which have differentiated between the delinquent and the non-delinquent.
3. There is no definite clear separation of traits between the delinquent and the non-delinquent--Test results show they differ in degree rather than in kind.

MORE RECENT STUDIES

Zakolski Study. Zakolski,^{3/} whose study has been cited previously gave a battery of tests to fifty boys in an industrial school (delinquents) and fifty boys in a public school (non-delinquents). These groups were equated for age and national origin. The mean age for both groups was 15.5 years. The battery of tests numbered fifteen, among which were the following personality tests: Bell's Adjustment Inventory, Cowan's Adolescent Adjustment Inventory, Stogdell's Behavior Cards, Beurneuter's Inventory and

^{1/}Edgar A. Doll and Kathryn A. Fitch, "Social Competence of Juvenile Delinquents," J. Crim. Law, (1939), 30: 52-67

^{2/}Capwell pp. cit.

^{3/}Zakolski, op. cit.

Washburne's Social Adjustment Inventory. The following tests or parts of tests did not differentiate in this study:

1. Bell's Inventory. Nome, Social and Emotional Scores
2. Cowan's Inventory
3. Washburne's Inventory. Scores of Happiness, Sympathy, Purpose, Impulse-judgment and Self-control

He found the following to differentiate:

1. B₁-N Score of Beurneuters
2. Bell's Inventory--Health Adjustment Score only
3. Washburne's Inventory--Social Adjustment Score only
4. Stogdill's Behavior Cards

He then lists twenty-three ways his study showed that delinquents differ from non-delinquents. They agree, generally, with the conclusions drawn from the research in this area.

Zakolski concludes:

"The delinquent boy is less intelligent, has less of a certain type of mechanical or clinical ability, his health adjustment is less good, he is less social, less well socially adjusted, his school activities are poor, his family relations are less good and his community relations are poorer. The delinquent boy presents a psychological deficit. He is a less adequate personality....The delinquent boy has found the answer, he has found a mode of reaction which solves his problem at least temporarily, a behavior pattern which becomes indurated with time."^{1/}

Glueck's Study. Another study of importance is the most recent volume of the Gluecks, Unraveling Juvenile Delinquency.^{2/} This study did not use paper and pencil personality tests, yet the results make it worth discussing.

^{1/}Zakolski, op. cit., p. 116.

^{2/}Gluecks, op. cit.

Five hundred delinquent boys from the Lyman and Shirley Schools were matched with five hundred non-delinquent boys from the Boston Public Schools. The controls were (1) age, (2) general intelligence, (3) ethnico-racial origin, and (4) residence in underprivileged neighborhoods. Every child was given (1) a medical examination, (2) Intelligence and Achievement tests, and (3) the Rorschach Test and a Psychiatric Interview. Data was gathered and many tables are included. From this material Prediction Tables were constructed. They included tables on (1) the critical family sociological factors, (2) those distinguishing elements of character structure as revealed by the Rorschach Test, and (3) the differentiating personality traits brought out by the psychiatric interview.^{1/}

It is interesting to note the personality differences between delinquents and non-delinquents in this study. The delinquents are socially assertive, defiant, hostile, more impulsive, vivacious and extroverted. They suffer less from anxiety and are more independent. They are said to be less adequate than the non-delinquents in the deep-rooted emotional dynamics. On the other hand they are more dynamic, energetic, more aggressive, adventurous and impulsive.^{2/}

The Gluecks point out that this book represents only the first analysis of this data and that subsequent reflection will probably bring about modification of present conclusions. It seems questionable whether these Prediction Tables can be used in all areas and with all ages. Two limitations

^{1/}Gluecks, op. cit.

^{2/}Gluecks, op. cit., pp. 251-2.

of the study appear to be the fact that there was no special consideration taken of the institutionalized delinquents and one psychiatric interview hardly is enough to draw so many conclusions. It is, however, another supplementary tool in a crime prevention program.

PREVIOUS INVESTIGATION ON THE K-D SCALE

MacDowell Study. A study done in 1947 by MacDowell^{1/} was the first partial validation done on the K-D Proneness Scale. This study used three groups of boys; delinquent, public school, and "high moral" group. The delinquent boys scored considerably higher on the Scale than did the "high morale" group and somewhat higher than the unselected public school boys. Correlations run between Scale Scores and IQ's were negative and small. There was a slight trend noticed toward the higher the IQ, the less delinquency-prone and vice versa.

Donahue Study. This study^{2/} is a further validation of the K-D Scale. This study used four groups of girls; delinquent, pre-delinquent, public school and "high morale". Results showed there was more overlapping between the delinquent and the public school girls than the boys, but the similar relationship existed as to the delinquents scoring considerably higher than the "high morale" group and somewhat higher with the public school group. An item Analysis revealed that fifty-four responses to seventy-four multiple choice questions distinguished significantly between delinquent and non-delinquent girls. Correlations run between the Scale scores and IQ's were

^{1/}Robert S. MacDowell, A Partial Valuation of an Attitude and Behavior Scale, Unpub. Ed. M. Thesis, Bu. U. Sch. of Ed., Boston, 1947.

^{2/}Mary C. Donahue, Further Validation of the K-D Proneness Scale, Unpub. Ed. M. Thesis, B. U. Sch. of Ed., Boston, 1949.

small and negative. A correlation was also made on scores of the Personal Index and Scale scores. The low correlation ($-.237$) does indicate that the two scales are measuring something quite different.

Paine Study. In this study the K-D Scale was administered to 746 students in Lebanon, New Hampshire and Hartford, Vermont High Schools. There was difficulty in obtaining objective criteria on which to correlate the test scores. A rough criteria was finally used whereby the students were rated on a five-point scale.

The study revealed significant age-differences in scores. A fully adequate criterion was not available. The ratings showed positive, but generally, low correlation with the K-D scores. The correlations were generally higher for boys than for girls.^{1/}

PREVIOUS INVESTIGATION ON THE HESTON INVENTORY

Most of the data on the reliability and validity of the Heston Inventory is reported in the Manual. The studies have been done under the author's supervision as theses at De Pauw University.

Cook Study. Only one study has been done with the Heston and delinquency.^{2/} ^{3/} Cook used the Inventory with seventy-three men just being admitted to the Indiana Reformatory at Pendleton. The age distribution of

^{1/}John M. Paine, Jr., The Validation of the Kvaraceus Delinquency Proneness Scale and Checklist, Unpublished Batchelder's Thesis, Dartmouth College, 1950.

^{2/}Personal letter from Joseph C. Heston to this author, March 7, 1952.

^{3/}C. Dale Cook, A Comparison of the Personal Adjustment Inventory Scores of Criminal and Normal Male Subjects, Unpublished Seminar Thesis, De Pauw University, 1948.

these male prisoners approximated that of college men. Cook, wanting to determine what differences in adjustment the Inventory would reveal, compared these seventy-three inmates with the sample of eight hundred and eight-four college freshmen men used in the norm group. The data revealed that in every scale the college men exhibited superior adjustment scores (all critical ratio either reach or approximate significance). He concluded that the Inventory could make successful group discriminations between these two widely divergent samples of men.

The second phase of the study, he did not succeed in finding significant differentiation between Heston's norm group of high school boys and a group of ninety-eight boys of comparable age at the Indiana Boys' School at Plainfield, a juvenile correctional institution. Apparently the differences are less pronounced here than between the older men in college and adult criminal groups.

Michaelis and Tyler Study. The only published study on the Heston was one done by Michaelis and Tyler.^{1/} They were interested in the diagnostic and predictive value of the Inventory used in student teaching. Their sample was small (only sixty students). They draw the following conclusions:

1. The intercorrelations and reliabilities found in this study are very similar to those reported in the Manual for the Heston Test.
2. The intercorrelations between the subtests appear to be sufficiently low so that the subtests may be used for diagnostic purposes.

^{1/}J. V. Michaelis and F. T. Tyler, Diagnostic and Prediction Values of the Heston Inventory used in Student Teaching," J. Teach-Ed, (March, 1950), 1: 40-3.

3. Three of the subtests correlate significantly although low with rated practice-teaching success. Probably further analysis with larger number of cases will make it possible to determine critical scores above which the chances of practice-teaching successes are high, between which chances are small. Item analysis may also reveal that many items have little value in predicting teaching success.

CHAPTER III
PROCEDURES AND STATISTICAL TECHNIQUES

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The previous chapter showed there is still a great deal to be done in the field of delinquency prediction--and this very prediction holds the key to helping children adjust to and live a normal life. It is hoped that this further study in validation of the K-D Proneness Scale will help in just this way.

SCOPE OF THE PROBLEM

The K-D Proneness Scale and the Heston Personal Adjustment Inventory were administered to a group of one hundred boys in their junior year of high school. The Director of Guidance in the high school of this borderline city of Metropolitan Boston (population approximately sixty thousand) administered both the tests. The group of one hundred boys was divided fifty-fifty, the division being based on school achievement (school grades) of these boys and being made by the Director of Guidance. The tests were scored by this author. As two of the low achievers failed to complete the Heston Inventory, these cases had to be dropped. The groups, therefore, were forty-eight in the low achievers and fifty in the high achievers. The total number of boys used in the study was ninety-eight.

DESCRIPTION OF THE SCALE

The K-D Proneness Scale consists of seventy-five multiple choice questions, each question having four choices. Most of the questions are based on the significant differences pointed up in previous research on juvenile delinquency. Several "neutral" items involving color, food, and drink preferences were added to the Scale for rapport value.

The author of the Scale states:

"The Scale has been developed to help all those who shoulder a major responsibility for the wholesome growth of children and youth in spotting children with whom effective preventive work can be carried on. School teachers, guidance counselors, psychologists, visiting teachers, probation officers, Youth Authority Boards, social workers, settlement house workers, recreational directors, the clergy and others who deal daily with the problems of child growth and development should find this Scale a valuable supplement in identifying those children who are especially vulnerable to the development of delinquent patterns of behavior." 1/

The Scale author also points out that:

"Care should be taken to avoid typing children as pre-delinquent on the basis of the scale above. The Scale score, like any other test score, should be interpreted against the background of all other information as to the personality structure and environment of the individual." 2/

DIRECTIONS ON THE SCALE

The scale may be administered to a group or an individual. It can be used with pupils in grades six through twelve. There is no set time limit and ordinarily it takes fifteen to twenty-five minutes to complete. The name K-D Proneness Scale is used so that pupils will not recognize its purpose, and heavy emphasis is placed on the fact that there are no right OR WRONG ANSWERS. The directions on the booklet state:

"The questions in this booklet ask how you feel about certain things. This is not a test. There are no right or wrong answers. Read each question and the four answers that follow it. Select the answer that best describes how you really feel about the questions. Do not skip any questions. Answer every question as you come to it. Remember, there are no right or wrong answers. Be sure to choose the answer that best tells how you feel about the question."

1/William C. Kvaraceus, Manual of Directions for K-D Proneness Scale, World Book Company, Yonkers-on-Hudson, New York, 1950, p. 2.

2/Kvaraceus, op. cit., p. 6.

SCORING TECHNIQUE

Separate scoring keys for boys and girls are provided with the Scale. The scoring key is imposed over the answer sheet. The answers are scored either plus, minus, or zero. To obtain the total score the positive and negative responses are added. The result is either a positive or negative figure.

There are no "norms" provided as they really are not needed.

"Those children who attain high positive scores (≥ 3 or above for boys, ≥ 6 or above for girls) are indicating, by their responses to the Scale items, attitudes and opinions that closely resemble those of delinquent groups, those subjects who obtain relatively low negative scores (≤ -10 or below for boys, 0 or below for girls) are responding in a manner similar to what we have termed "high morale" groups."^{1/}

DESCRIPTION OF THE INVENTORY

The Heston Personal Adjustment Inventory is a personality questionnaire and is "offered as an objective means of getting at six basic components of an individual's adjustment."^{2/} It is usable with students from high school and college groups.

The Inventory is made up of a list of two hundred and seventy questions to which the tester answers "Yes" or "No". There are six traits measured.

There are:

A- Analytical Thinking

S- Sociability

E- Emotional Stability

^{1/}Kvaraceus, Manual for Scale, op.cit., p. 6.

^{2/}Joseph C. Heston, Manual for Personal Adjustment Inventory, World Book Company, Yonkers-on-Hudson, 1949, p. 1.

C- Confidence

P- Personal Relations

H- Home Satisfaction

Interpretation of these six traits will be included in Chapter IV.

DIRECTIONS ON THE INVENTORY

The Inventory may be used with high school freshmen through mature adults. The point is emphasized in this questionnaire, as in the Scale, that there are no right or wrong answers. It is a group test and generally takes forty to fifty minutes to complete although there is no set time limit.

The examiner reads the following as an introduction:

"This questionnaire is not like the ordinary test in which you are asked to show what you know. We are interested in how you feel about many questions in every day life."

The front page of the test booklet states the following:

"There are no right or wrong answers to the questions on the following pages; each person differs in the way he feels about them. We are attempting to study certain aspects of personality that are important factors in one's adjustment to life, school, or work in general. You can help by answering each question thoughtfully and honestly....Think carefully, but do not spend too much time on any one question. Let your own personal experience or opinion guide you and record the way you feel about each question."

SCORING TECHNIQUE

The Inventory may be either machine or hand scored. Keys are provided with the tests. The answer to any one item is scored as one point on its appropriate scale if it agrees with the answer ("Yes" or "No") descriptive of that scales characteristics. **If there are more than twenty omitted items,** The Test should be retaken or discarded as **it would automatically lower the scores and therefore be invalidated.**

After obtaining the raw scores for each of the six subtests they are then converted into percentiles from the tables of Percentile Norms given in the Manual. There is also a Profile Chart with each test booklet where the raw

scores and percentiles may be recorded and the percentiles for the six subtests than plotted on this Profile, thereby providing a good graphic description of the individual. There is no total score.

STATISTICAL TECHNIQUES

The data was analyzed to obtain means and standard deviations of the two groups and the total group. Frequency distributions were made of the two groups on the Scale and the Inventory. The Pearson Product Moment Coefficient of Correlation was used to compute the correlations on the K-D Scale with each of the six Heston subtests and also to compute intercorrelations on the Heston subtests, thereby running a total of twenty-one correlations. Other comparisons were drawn and will be discussed at length in Chapter IV.

CHAPTER IV
ANALYSIS OF DATA

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ANALYSIS OF DATA

The purpose of this study was to further validate the K-D Proneness Scale by administering it along with the Heston Personality Adjustment Inventory and to see what correlations, if any, occurred.

The data was analyzed to determine:

1. The difference, if any, between the mean scores of the low and high achievers on the Scale and the Inventory
2. The frequency distributions of the two groups on the Scale and Inventory
3. What comparisons can be made using deciles with the norm group and the sample reported in the Manual
4. Correlations between the K-D Scale and the sex subtests of the Heston
5. The comparison of inter trait correlations on this group and sample reported by the author of the Inventory
6. The comparison of the boys most delinquent-prone and least delinquent-prone as to personality traits measured by the Heston.

A summarization of the data will be presented in the tables of this chapter.

In the analysis of this data, the Low refers to the criterion group of forty-eight cases who were judged low achievers in school. The High refers to the criterion group of fifty judged to be high achievers.

For statistical reasons, the 0 on the K-D Proneness Scale became 50, thereby eliminating the negatives. Therefore, a score of 53 or above would indicate proneness on this Scale and 40 or below would indicate no delinquency.

Table 1. Mean and Standard Deviation for the Criteria and Total Groups on the K-D Proneness Scale

Group	Number	Mean	SE _m	S.D.	SE _r
Low	48	41.44	1.09	7.52	.78
High	50	35.02	.94	6.56	.66
Total	98	37.90	.84	8.29	.59

There does appear to be some difference in the means of the criteria groups, thereby differentiating the low achievers from the high in regards to the K-D Scale. The difference is not great, however, as would be expected using such criteria groups.

Table 2. Mean and Standard Deviation for the Criteria and total Groups on the Heston A (Analytical Thinking)

Group	Number	Mean	SE _m	SD	SE _r
Low	48	15.76	.71	4.88	.50
High	50	19.18	.95	6.67	.67
Total	98	17.52	.62	6.12	.44

This table shows difference in means between the two groups as would be expected. The author of the Inventory comments that this Scale, Analytical Thinking is not synonymous with intelligence.

"A person high on this scale likes to be intellectually independent, thinks for himself, analyzes and theorizes a great deal, enjoys solving problems, likes carefully planned and detailed work, is persistent at tasks and is serious. Low scores suggest an uncritical acceptance of others' ideas, a willingness to avoid planning and thinking, and a

dislike for creative or intellectual activities."^{1/}

Therefore, the higher achieving group would be expected to rate higher on this trait than would the lower achieving.

Table 3. Mean and Standard Deviations for the Criteria and Total Groups on the Heston S (Sociability)

Group	Number	Mean	SE _m	SD	SE _c
Low	48	20.54	.89	6.08	.63
High	50	22.50	.89	6.24	.63
Total	98	21.71	.65	6.36	.46

Table 3 shows the High group to have a slightly higher mean score than the Low group. Heston's interpretation of this scale, Sociability is:

"High degrees of this test indicate extroversion in the social sense. A person with a high 'S' score is more interested in people than in things, he makes friends easily, converses readily and freely, feels he is a 'lively' individual, enjoys social mixing, and frequently takes the lead in social participation. The low person is self-conscious, shy and socially timid, has only a limited number of friends, and seeks the background on social occasions. He is the 'introvert' who is lacking in social skills and/or inclinations."^{2/}

^{1/}Heston's Manual, p. 14-5.

^{2/}Heston's Manual, p. 15.

Table 4. Mean and Standard Deviation for the Criteria and Total Groups on the Heston E (Emotional Stability)

Group	Number	Mean	SE _m	SD	SE _e
Low	48	27.62	1.24	8.51	.88
High	50	28.96	.90	6.31	.64
Total	98	28.33	.79	7.78	.56

Table 4 shows a very slight difference in the mean score of these two groups, with the High group slightly higher. Heston's interpretation of this scale, Emotional Stability, is as follows:

"High scores here typify persons who can remain in stable and uniform spirits, are not subject to apprehensive fears or worries, are not easily upset or frustrated, can relax and avoid tension, and see life in reality rather than through day dreams and uneasy retrospection. People low on 'E' are easily disrupted by minor crises, are readily embarrassed, often feel tired and listless, are impulsive and jittery, frequently feel thwarted and suffer often from tension, worry, and uneasiness. Extremely low scores may indicate the traditional 'neurotic' ^{1/}

Table 5. Mean and Standard Deviation for the Criteria and Total Groups on the Heston C (Confidence)

Group	Number	Mean	SE _m	SD	SE _e
Low	48	19.70	1.03	7.09	.73
High	50	22.54	.77	5.41	.55
Total	98	21.18	.65	6.44	.46

^{1/}Heston's Manual, p. 15.

Table 5 shows a slight difference in the mean scores of the two groups in favor of the High group. Interpretation for this scale, Confidence, is given as follows:

"Persons scoring high on 'C' make descisions readily, feel sure of the value of their own judgment, adjust easily to new or difficult situations, feel they enjoy the approval and favor of their associates, face the present and future optimistically rather than linger regretfully over the past, lack inferiority feelings, and are not dissatisfied with their physique and appearance. People low on 'C' distrust their ability, cannot make descisions satisfactorily, and display the traditional 'inferiorety complex'."1/

Table 6. Mean and Standard Deviation for the Criteria and Total Groups on the Heston P (Personal Relations)

Group	Number	Mean	SE _m	SD	SE _r
Low	48	20.58	.96	6.60	.68
High	50	23.34	.83	5.81	.59
Total	98	22.05	.65	6.44	.46

Table 6 also shows a slight difference of mean scores in favor of the High group. This scale, Personal Relations, is interpreted.

"High scores on 'P' indicate two basic attitudes: (1) feeling that other people are trustworthy and congenial and (2) ability to refrain from annoyance and irritation at others' behavior. Thus one who is high on 'P' does not feel slighted by others, does not feel they misunderstand him or cast him in an inferior role, is not too critical of others, does not lose patience readily, and is not angered too frequently or too easily. He can see things fairly and impersonally. Persons low in this scale are touchy, suspicious, and easily irked by other people. A very

1/Heston's Manual, p. 16.

low score might be partially indicative of 'paranoid' trends. Caution is needed in the interpretation of an individual's 'P' score because it has the lowest reliability (.80) of any of the six scales."^{1/}

Table 7. Mean and Standard Deviation for the Criteria and Total Groups on the Heston H (Home Satisfactions)

Group	Number	Mean	SE _m	SD	SE _c
Low	48	34.83	1.00	9.87	1.02
High	50	34.83	1.31	9.19	.93
Total	98	36.51	.98	9.64	.69

Table 7 shows that on this scale, Home Satisfactions, there was no difference in the mean scores. The author states that:

"High scores on the 'H' denotes pleasant family relations, an appreciation of desirable home conditions, a feeling of mutual understanding and respect, freedom from emotion-breeding home conflicts, and a healthy recognition of one's obligation to home and family. At the low extreme we find admissions or complaints of such difficulties as wishing for a different home, feeling that enjoyment can be found only away from home, conflicts with parents' ideas, family not considerate, parents too strict, domineering, or unsympathetic, or parents overly irritated or emotional."^{2/}

Summarizing the results, therefore, of the first seven tables we see that the High group was consistently slightly higher in the mean scores of all the subtests of the Heston with the exception of the 'H' scale. There was no difference in the mean score for the two groups on this scale. The High group got a slightly lower mean score on the K-D Scale.

^{1/}Heston's Manual, p. 16.

^{2/}Heston's Manual, p. 17.

Table 8. Mean and Standard Deviation on Total Group (98) for the K-D and Six Heston Subtests

Test	Mean	SE _m	SD	SE _c
K-D	37.90	.84	8.29	.59
Heston A	17.52	.62	6.12	.44
Heston S	21.71	.65	6.36	.46
Heston E	28.33	.79	7.78	.56
Heston C	21.18	.65	6.44	.46
Heston P	22.05	.65	6.44	.46
Heston H	36.51	.98	9.64	.69

This table, in summary, shows the mean and Standard deviation on the total group (ninety-eight cases) for both the K-D and the six Heston subtests.

The following tables show the frequency distributions for the K-D Scale and the six Heston Subtests.

Table 9. Frequency Distribution of the Criteria Groups on the K-D Proneness Scale

Intervals	Low Gr.	High Gr.
63-65	1	
60-62	0	

(concluded on next page)

Table 9. (concluded)

Intervals	Low Gr.	High Gr.
57-59	1	
54-56	1	
51-53	3	2
48-50	3	1
45-47	5	1
42-44	5	4
39-41	15	2
36-38	3	12
33-35	7	10
30-32	1	9
27-29	3	6
24-26		2
21-23		0
18-20		1

Table 10. Frequency Distribution of the Criteria Group on the Heston A

Intervals	Low Group	High Group
34-35		1
32-33		2
30-31	1	1
28-29	1	3
26-27	0	3
24-25	1	3
22-23	2	4
20-21	4	5
18-19	7	6
16-17	5	7
14-15	11	4
12-13	7	5
10-11	7	5
8-9	0	2
6-7	2	0

Table 11. Frequency Distribution of the Criteria Groups on the Heston S

Intervals	Low Group	High Group
35-36	1	1
33-34	0	2
31-32	1	2
29-30	1	6
27-28	5	4
25-26	4	5
23-24	6	5
21-22	8	4
19-20	6	7
17-18	6	6
15-16	1	2
13-14	3	2
11-12	3	2
9-10	2	2
7-8	0	
5-6	1	

Table 12. Frequency Distribution of the Criteria Groups on the Heston E

Intervals	Low Group	High Group
40-41	1	1
39-40	2	4
37-38	5	3
35-36	2	2
33-34	8	6
31-32	5	7
29-30	2	2
27-28	2	7
25-26	3	5
23-24	7	3
21-22	1	6
19-20	3	2
17-18	0	1
15-16	2	0
13-14	0	0
11-12	4	0
9-10	1	1

Table 13. Frequency Distribution of the Criteria Groups on the Heston C

Intervals	Low Group	High Group
35-36	1	
33-34	1	
31-32	0	2
29-30	0	3
27-28	7	10
25-26	5	5
23-24	5	6
21-22	4	10
19-20	7	3
17-18	1	4
15-16	5	2
13-14	3	2
11-12	4	1
9-10	2	2
7-8	1	
5-6	1	
3-4	1	

Table 14. Frequency Distribution of the Criteria Group on the Heston P

Interval	Low Group	High Group
33-34	2	
31-32	1	6
29-30	2	5
27-28	5	8
25-26	5	4
23-24	4	5
21-22	6	4
19-20	7	7
17-18	3	5
15-16	5	2
13-14	1	2
11-12	3	1
9-10	1	1
7-8	1	
5-6	2	

Table 15. Frequency Distribution of the Criteria Group on the Heston H

Interval	Low Group	High Group
50-52	1	2
47-49	3	2
44-46	4	12
41-43	5	11
38-40	11	5
35-37	6	5
32-34	4	3
29-31	2	1
26-28	3	4
23-25	3	1
20-22	2	1
17-19	1	1
14-16	1	1
11-13	1	-
8-10	0	1
5-7	1	-

In summary, it is clear that the range for the two groups was not very different on any of the six Heston subtests. On the K-D Scale the Low group tended to score higher than did the High group.

Table 16. Comparison of Raw Scores According to Deciles on the Heston Subtests of the Norm Group (I) and Sample Group Reported in Heston Manual (II)

Dec- iles	A		S		E		C		P		H	
	I	II	I	II	I	II	I	II	I	II	I	II
90	27	31	30	35	38	36	28	35	30	31	46	46
80	22	27	27	32	35	33	27	32.5	27	28	44	44
70	20	25.5	25	29	33	32	25	30.5	26	26	42	42
60	18	24	23	27	32	30	24	29	24	24	41	39.5
50	17	23	22	24	29	28	22	27	22	23	39	37.5
40	15	21	20	22	27	26	21	24	20	21	37	34.5
30	14	19	18	20	24	24	19	21	19	20	34	32
20	12	17	17	17	22	21	17	18	17	17.5	28	27
10	11	14	12	14	19	17.5	12	13.5	13	13.5	22	20

For the total group used in this study (represented by I on Table 16) the scores were lower by one to seven points on the deciles as compared to the Sample group reported by Heston (represented by II on Table 16) on the Scales A, S, C, and P. On the scales E and H group I scored from -5 to 2.5 points higher than Group II.

It must be remembered that the Heston Manual gave reported percentile norms for high school senior boys and the group used in this study were high school junior boys. This factor may influence these comparisons.

Table 17. Pearson Product-Moment Correlation Coefficients Reported for the K-D Proneness Scale and the six Subtests of the Heston

Number	Variables	r	SE r
98	K-D vs A	-.32	$\pm .09$
98	K-D vs S	-.24	$\pm .09$
98	K-D vs E	-.29	$\pm .09$
98	K-D vs C	-.37	$\pm .08$
98	K-D vs P	-.41	$\pm .08$
98	K-D vs H	-.29	$\pm .09$

All the correlations appear to be negative and small with the exception of the K-D vs P score which is -.41. This difference is slight but more than the others. Heston states that the 'P' Subtest has the lowest reliability of any of the six scales. This may have bearing on this higher negative correlation. With the exception of 'P' it would appear that the K-D is measuring something quite different from the Heston Inventory.

Table 18. Inter-trait Correlations for the Heston Inventory - N = 98

Scale	A	S	E	C	P	H
A - Analytical Thinking	.222		-.049	.040	.031	.052
S - Sociability			.202	.367	.204	.202
E - Emotional Stability				.758	.732	.463
C - Confidence					.759	.567
P - Personal Relations						.660
H - Home Satisfaction						

Table 19. Inter-trait Correlations for the Inventory Scales^{1/} N = 100

Scale	A	S	E	C	P	H
A - Analytical Thinking	-.076		-.183	.011	-.169	.033
S - Sociability			.325	.438	.378	.262
E - Emotional Stability				.726	.611	.382
C - Confidence					.580	.312
P - Personal Relations						.393
H - Home Satisfaction						

In comparing these two tables we see that the trait, Analytical thinking bears practically no relationship to any of the other five scales. It is, therefore, an independent measure.

In the Sociability trait scale there is a very slight relationship to the Confidence scale. Other correlations are very slight. Both tables agree in this trait.

The Emotional Stability Scale shows practically no relationship with Analytical Thinking and a very slight one to Sociability. However, both

^{1/}Hestons Manual, p. 32.

Confidence and Personal Relations appear highly correlated with the Emotional Stability Scale. Heston defends this saying, "There is good reason to believe this is a genuine association, since the items of each scale comprise relatively discrete varieties of behavior."^{1/} There also seems to be a substantial relationship between Emotional Stability Scale and Home Satisfaction scale.

On the Confidence scale there seems to be a high degree of correlation with Personal Relations. With the 98 cases used in this study the correlation was .759 as compared to the reported .580. As formerly said there was also a high correlation with Emotional Stability.

The Personal Relations scale shows very slight correlations with Analytical Thinking and Sociability Scales, substantial correlation with the Home Satisfaction Scale, and high correlations with the Emotional Stability and Confidence Scales.

The Home Satisfaction Scale shows some positive correlation with all other scales except the Analytical Thinking scale.

In summary, a comparison of the two previous tables shows about the same inter-trait correlations.

^{1/}Heston's Manual, p. 15.

Figure 1 shows a profile chart of the six cases scoring lowest on the K-D Proneness Scale.

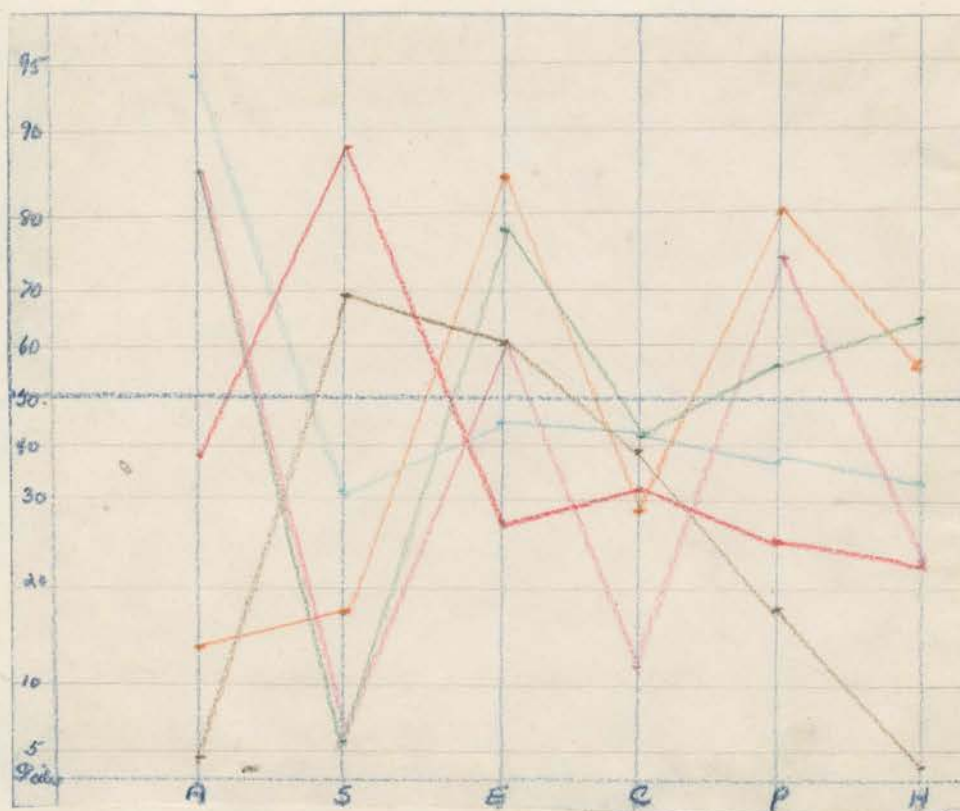


Figure 1. Profile Chart of the Six Cases Scoring Lowest (non-delinquent) on the K-D Proneness Scale

Five of these cases came from the High achieving group with one from the Low group. The scores on the K-D were:

1.	-32
2.	-26
3.	-25
4.	-23
5.	-23
6.	-23

These scores are all very negative showing they are not delinquency-prone.

The range of scores is as follows:

- A. 4th to 94th percentile. 3 scores above and 3 below the 50th percentile.
- S. 6th to 88th percentile. 4 scores below the 50th percentile.
- E. 28th to 85th percentile. 4 scores above the 50th percentile.
- C. 12th to 42nd percentile. All scores below the 50th percentile.
- P. 12th to 80th percentile. 3 scores above the 50th percentile.
- H. 3rd to 65th percentile with 4 scores below the 50th percentile.

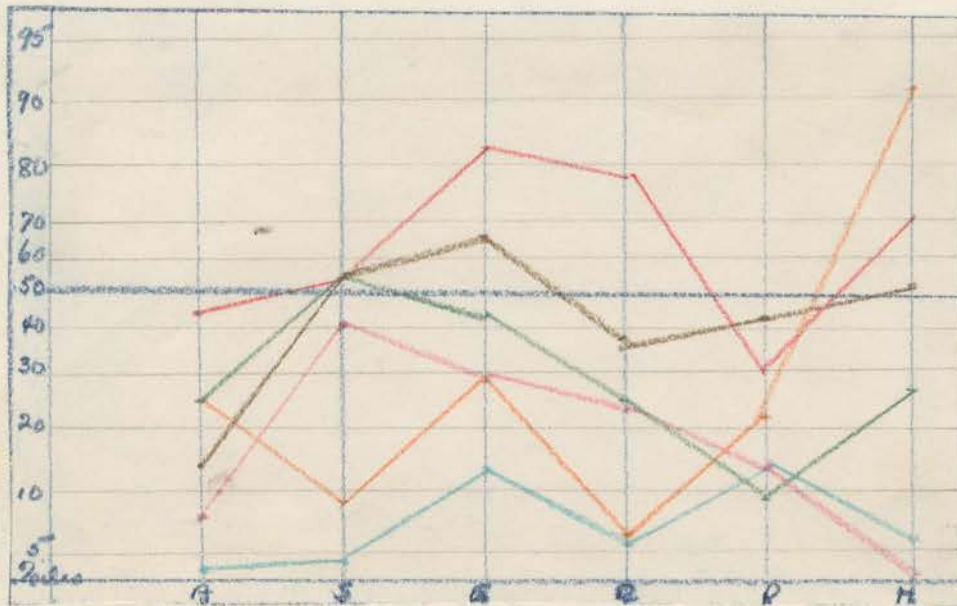


Figure 2. Profile Chart of the Six Cases Scoring Highest (Delinquency-Prone) on the K-D Proneness Scale

Four of these cases came from the Low achieving group and two from the High group. The scores on the K-D were:

1. 2
2. 3
3. 3
4. 5
5. 8
6. 15

These scores represented the six highest scoring cases in the total group of ninety-eight.

The range of scores was as follows:

- A. 1st to 44th percentile with all 6 scores falling below the 50th percentile
- S. 4th to 53rd percentile with 3 scores just above the 50th percentile
- E. 13th to 83rd percentile with 4 scores falling below the 50th percentile
- C. 7th to 78th percentile with 5 scores falling below the 50th percentile
- P. 9th to 44th percentile with all cases below 50th percentile
- H. 0 to 91st percentile with 3 cases above the 50th percentile

As we analyze these two figures (1 and 2) the following comparisons may be made:

1. The delinquents scored low on the Analytical Thinking which would be expected. The non-delinquents did not score consistently high, but the trend was in that direction.
2. There was no appreciable difference in the range of scores for the delinquents and non-delinquents on the Sociability scale. There is some conflict in the research as to whether this trait does differentiate.
3. The non-delinquent group scored better on the Emotional Stability Scale as would be expected, delinquents being generally emotionally

unstable.

4. Both groups scored low in the Confidence scale. One would expect the non-delinquent group to score higher than the delinquents who generally have feelings of inferiority and do not feel that they enjoy approval from others.
5. The non-delinquents scored better in the Personal Relations Scale than did the delinquent group which had all six cases fall below the 50th percentile. This would indicate that the delinquents may not feel that others are to be trusted and that they are misunderstood.
6. There was no differentiation shown on the scores of the Home Satisfaction Scale. The delinquents might be expected to score lower for their family relations are generally poorer than those of non-delinquents.

It is interesting to note that the two highest scoring cases on the K-D Scale (#8 and #15) both had very low percentiles in all scales. Their showing on both the Scale and the Inventory would warrant a thorough follow up in order to help them before it is too late. They do appear to be very delinquent-prone on the basis of these two tests.

CHAPTER V
SUMMARY AND CONCLUSIONS

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SUMMARY AND CONCLUSIONS

The purpose of this study was to further validate the K-D Proneness Scale and to see if any of the personality factors measured by the Heston Personal Adjustment Inventory would correlate with delinquency. Both questionnaires were administered to a group of one hundred high school junior boys. This group was divided in half on the basis of high and low achievers (in the opinion of the Guidance Director of the school system). The low achieving group was dropped from fifty to forty-eight because of two incomplete questionnaires.

The K-D Proneness Scale consists of seventy-five multiple choice questions, each one having four responses. The subject is instructed to choose the response that best describes how he feels or what he thinks about the question.

The Heston Personal Adjustment Inventory consists of two hundred and seventy questions to which the subject answers "Yes" or "No". The subject is asked to respond to these questions not by what he knows but how he feels about them.

CONCLUSIONS

From an analysis of the data presented in this study, the following tentative conclusions are drawn:

1. The boys scoring high (delinquency-prone) on the K-D scale tended to be in the low achieving group. This is based on a small number of cases however.

2. The low achieving group tended to gain poorer scores on all the subtests of the Heston with the exception of the Home Satisfaction Scale on which there was no difference in the mean score.
3. A comparison between this total group of ninety-eight and the Heston norms of deciles showed the group used in this study to be lower in raw scores by one to seven points on the scales of Analytical Thinking, Sociability, Confidence, and Personal Relations. The Heston norm group scores were lower by five tenths to 2.5 on the Emotional Stability and Home Satisfaction Scales. These differences are not great and therefore, the groups are not too different.
4. There were very low negative correlations between the K-D Proneness Scale and five of the subtests on the Heston. The other subtest, ('P') showed a slightly higher negative correlation. However, the two tests do seem to be measuring different things.
5. The intertrait correlations as computed by this author and by Heston proved to be about the same, with the scales of Emotional Stability, Confidence, and Personal Relations having high intercorrelations.
6. A Comparison of the six most delinquency-prone and least delinquency-prone boys (according to the K-D Scale) showed that the following scales differentiated in this study. Analytical Thinking, Emotional Stability and Personal Relations. The other three scales could not be said to differentiate in this study. This conclusion, however, is based on only twelve cases, and as follow-up studies are impossible with this data, this conclusion might differ with a larger sample.

LIMITATIONS OF THE STUDY

There were several limitations in this study.

1. The criteria for dividing the total group in half were not well enough established. The division was made on the basis of school grades which are unreliable. There should have been more reliable data on which to base the division.
2. As this writer did not administer the tests, there is no knowledge of what, if any, irregularities in controls were or were not present at the time of administration.
3. The raw scores obtained on the Heston subtests had to be compared to those given in the Manual in order to figure percentiles. This study used junior year boys in high school. The Manual's percentile tables were based on boys who were seniors in high school. This may have made some difference and therefore might distort the scores.
4. It was impossible to gain further information on the twelve cases chosen to analyze. Six cases appeared to be most delinquent prone, the other six appeared to be least delinquent prone. Further evidence to support these findings would have been most helpful.

NEED FOR FURTHER RESEARCH

1. A follow-up study of the chosen twelve cases would be of value in giving evidence of the predictive value of the K-D Proneness Scale.
2. Other personality tests measuring the same on nearly the same traits as are measured in the Heston could be used on this same group to further determine whether Analytical Thinking, Emotional Stability, and Personal Relations really do differentiate between delinquents

- and non-delinquents.
- 3. The Heston could be administered to a group of known delinquents and non-delinquents of the same age to see which scales differentiate.
- 4. The K-D Proneness Scale and other measures of personality could be administered and comparisons drawn.

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