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An analysis and validation of Scale-8 on the MMPI-168 with juvenile delinquents

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AN ANALYSIS AND VALIDATION OF SCALE-8 ON THE MMPI-168 WITH JUVENILE DELINQUENTS

by

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TABLE OF CONTENTS

TABLE OF CONTENTS, Cont'd.

TABLE OF CONTENTS, Cont'd.

TABLE OF CONTENTS, Cont'd.

TABLE OF CONTENTS, Cont'd.

LIST OF TABLES

LIST OF TABLES, Cont'd.

LIST OF FIGURES

LIST OF FIGURES, Cont'd.

Chapter I

INTRODUCTION

Purpose

The purpose of this research is to provide an understanding of what Scale-8 of the MMPI-168 is measuring in a population of juvenile delinquents. Further, it is intended to provide information on whether this scale can make the type of discriminations that would be useful in assisting juvenile courts in making decisions in regard to planning and disposition.

Statement of the Problem

The Wayne County Juvenile Court Clinic for Child Study in Detroit evaluates youngsters, ranging in age from 12 through 17, who are referred by the Juvenile Court to assist in planning and disposition. In dealing with youngsters adjudicated (convicted of a crime) delinquent, the court wants to know the kind of person with whom they are dealing, and in particular whether they are disturbed, strongly delinquent, and/or assaultive. Evaluating psychologists use a battery of intelligence, achievement and personality tests to give an overall picture of the individual's intellectual functioning, academic potential and personality features. The clinicians also make recommendations as to academic programs, probation or placement in structured group residential settings; and, in more serious cases, assist the

court in deciding whether certain juveniles of at least 15 years of age should be tried as adults.

One of the personality tests used in these evaluations is the MMPI-168 (168). This is a short form of the full Minnesota Multiphasic Personality Inventory (MMPI) and consists of the first 168 items of the 399 items which comprise the 13 scales of this inventory (Overall & Gomez-Mont, 1974). Scale elevations that are equal to or greater than a T-score of 70, using the standard K-corrected T-scores, are considered significant and indicate that the individual may be experiencing problems or pathology in the area represented by that scale. In this population, this significant elevation occurs most frequently on Scale-8. The original intent of those who developed this scale was to discriminate between schizophrenics and other diagnostic groups, including normals (Hathaway, 1956). As a result, it was labeled the Schizophrenia Scale. Schizophrenia is a treatable although incurable mental disesase where there is a deterioration from a previous level of functioning, social withdrawal, blunted affect, confused and irrational thinking, and loss of contact with reality. There are many stages of this condition and many subtypes. In the more progressed stages, there are hallucinations, delusions and bizarre behavior (American Psychiatric Association, 1980). Research in non-psychiatric settings revealed that groups who were not schizophrenic or psychotic also scored high on this scale: namely adolescents and delinquents or criminals

(Hathaway and Monachesi, 1963; Fruchtman, 1982). Most interpretations of high scores on this scale are based on research with psychiatric subjects. The fact that Scale-8 is significantly elevated in close to one-half (42%) of those seen at the Clinic for Child Study (Regan, 1988) suggests that there may be important interpretive features specific to this population that need to be examined. In these delinquents, factors such as impulsivity, alienation, poor family relations and feelings of misery and hopelessness seem to apply; however, characteristics like psychotic symptoms, bizarre mentation, possible delusions and hallucinations do not apply. A clearer understanding of the use of Scale-8 with delinquents would enable clinicians to better understand the youngsters they are evaluating and would provide the court with more precise and relevant information.

Another issue pertains to the use of appropriate norms for this population. Adolescent norms have been developed (Marks, Seeman, & Haller, 1974), but prior research with this population (Fruchtman, 1982) has shown that the adolescent norms submerge the profile to such an extent that they fail to discriminate between delinquent and/or disturbed youngsters and "normals." Further research is needed to confirm this.

An additional problem, experienced with this population on Scale-8 of the 168, is that nonreaders (those who read below a fourth-grade level) score significantly higher than

readers (Regan & Fruchtman, 1990). Is this because they are confused and do not understand the items or do nonreaders possess more of the attributes measured by this scale? This research will address this problem.

Focus of the Study

This study first will deal with the following:

1. It will determine whether factors such as socioeconomic status (SES), gender, race, age, intelligence (IQ), reading level and incarceration influence scale elevations (contribute to higher or lower scores).
2. It also will investigate whether there are patterns of item responses related to certain offenses or types of offenses.
3. It will determine which items are endorsed more frequently by high- vs. low-scorers.
4. It will look at the underlying factor structure of this scale.
5. The derived factors will be compared to other factor and content analyses of this scale on the full MMPI.
6. Then, the scale scores will be compared with corresponding classifications of each youngster on the dimensions of delinquency, emotional disturbance and assaultiveness. In this way, it will determine the usefulness of Scale-8 in this setting.

Also, two other issues will be explored:

1. Whether the standard K-corrected T-scores or the T-scores based on adolescent norms provide better

discrimination on these three dimensions.

2. Whether nonreaders, who score significantly higher on this scale even when items are read to them, score higher because they do not understand the items or because they are more delinquent, emotionally disturbed or assaultive.

Questions and Hypotheses

This is an exploratory study which will be concerned with answering questions as well as testing specific hypotheses. This approach will provide more comprehensive information on this scale. Appropriate designs and statistical tests will be used to answer questions and test the hypotheses. Decisions will be based on preset levels of certainty. The following questions will be answered and hypotheses tested:

Set I

1. Are there significant differences in the average Scale-8 scores at different levels of SES as defined by level of income?
2. Are there significant differences in the average Scale-8 scores at different age levels?
3. Is there a significant difference in the average Scale-8 scores of males and females?
4. Is there a significant difference in the average Scale-8 scores of blacks and whites?

5. Is there a significant difference in the average Scale-8 scores of youngsters whose IQ test scores are low-average and above and those whose IQ scores are below low-average?
6. Is there a significant difference in the average Scale-8 scores of readers and nonreaders?
7. Is there a significant difference in the average Scale-8 scores of those incarcerated in the Youth Home and those not incarcerated at the time of the testing?

Set II

1. What are the differential endorsement patterns by SES, age, sex, race, IQ level, reading level and incarceration?
2. Is there a response pattern in regard to the offense committed?
3. Which items are endorsed more frequently by high scorers vs. low scorers?
4. What is the internal reliability of Scale-8?

Set III

1. What are the underlying factors of Scale-8?
2. What do these factors mean in terms of thinking, feeling and behavior?

3. How do these factors relate to delinquents?
4. Are these factors similar to the factors derived from Scale-8 of the full MMPI?
5. Do these factors correspond to the grouping of items by content on Scale-8 of the full MMPI?

Set IV

1. H_1: Those classified as more highly delinquent will score significantly higher on Scale-8 than those classified as less delinquent when the standard K-corrected T-scores are used.
2. H_1: Those classified as emotionally disturbed will score significantly higher on Scale-8 than those classified as not emotionally disturbed when the standard K-corrected T-scores are used.
3. H_1: Those classified as assaultive will score significantly higher on Scale-8 than those classified as non-assaultive when the standard K-corrected T-scores are used.

Set V

1. H_0: Those classified as more highly delinquent will not score significantly higher on Scale-8 than those classified

as less delinquent when the T-scores based on adolescent norms are used.

2. H_0: Those classified as emotionally disturbed will not score significantly higher on Scale-8 than those classified as not emotionally disturbed when the T-scores based on adolescent norms are used.
3. H_0: Those classified as assaultive will not score significantly higher on Scale-8 than those classified as non-assaultive when the T-scores based on adolescent norms are used.

Set VI

1. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of delinquency when the standard K-corrected T-scores are used.
2. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of emotional disturbance when the standard K-corrected T-scores are used.
3. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of

assaultiveness when the standard K-corrected T-scores are used.

SET VII

1. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of delinquency when the T-scores based on adolescent norms are used.
2. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of emotional disturbance when the T-scores based on adolescent norms are used.
3. H_0: There will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of assaultiveness when the T-scores based on adolescent norms are used.

Assumptions

1. The MMPI scale elevations are valid in that they represent the true attitudes, feelings and experiences of the subject.
2. The reports from which the classifications are made are an accurate representation of the subjects' behavior.

Limitations

1. The results of this study would not be generalizable to any group outside of those that fit the criteria of the group studied in this research, i.e., juvenile delinquents.
2. Inferences would be limited to the 168 version of the MMPI and only to those who use the conversion weights (see Appendix F, p. 117) developed at the Clinic for Child Study (Regan, 1988).
3. The classification of subjects on each of the dimensions will contain a number of false positives and false negatives. However, every effort will be make to keep these at a mimumum.

Chapter II

REVIEW OF THE LITERATURE

Preface

The focus of this research is the MMPI-168, which is, at best, an approximation of the full MMPI. Because there is little research on the 168 in regard to the effects of demographics and other background variables, the relevant research on the full MMPI will be reviewed. As will be seen, corresponding scale correlations and averages between the full MMPI and the 168 suggest that they are nearly equivalent. Factor analysis of the scales yields the same factors (Overall, Hunter, & Butcher, 1973). Where the 168 runs into difficulty is in matching profile configuration with the full MMPI (Hoffman & Butcher, 1975).

Correspondence in profile configuration is measured by comparing the same individual's scores on the full MMPI and the 168 to see whether the highest scale on the test (high-point code) is the same for the full MMPI and the 168. This also is done for the combination of the highest and second highest scales (two-point code). For example, suppose an individual had Scale-8 as the highest of all of the scales on the test and Scale-4 was the second highest. The individual's high-point code would be '8' and his\her two-point code would be '8-4.' When the standard K-corrected T-scores are used, the high-point and two-point codes only are measured for the scales which are equal to or

above a T-score of 70. When T-scores based on adolescent norms are used, it is recommended that this cut-off be lowered to a T-score of 65 (Ehrenworth & Archer, 1985). K-corrections are not used with adolescent norms. When the same individual is scored for the full MMPI and the 168, the highest and second highest scales may not be identical. This is seen as crucial because high-points and two-point codes have standardized interpretations based on over 40 years of validation research. If the same individual has different high-point and two-point codes on the 168 when compared to the standard MMPI, one has to determine which of the two different code-types best describes the individual being tested. Currently, it is being recommended that if the 168 is used, it must be validated as a separate instrument (Hoffman & Butcher, 1975; Newmark & Finch, 1976)). This research project is aimed at analyzing and validating one of the scales on the 168.

This review will present research on the full MMPI and Scale-8 of the full MMPI relevant to the objectives of this research. Primarily, this approach is taken because of the lack of research on the 168 in regard to background data and empirical correlates. It is felt that the empirical correlates to this scale and the background influences are similar enough to warrant a thorough review of the full MMPI in this manner. However, in regard to the actual research and analyses the 168 will be treated as a separate and independent instrument.

The Standard MMPI

The Minnesota Multiphasic Personality Inventory (MMPI) is a 566-item true and false, self-report personality inventory. All of the items scored for the 13 scales are within the first 399 items. The remaining 167 statements are experimental items which, when combined with some of the 399 items, form experimental scales used in research. It has well-established reliability and validity and is relatively simple to administer and score (W. G. Dahlstrom, Welsh, & L. Dahlstrom, 1972; Green, 1980). There are three validity scales which describe how the subject took the test, eight scales associated with pathology, and two scales which are not concerned with pathology, but provide clinically useful information about the subject. The thirteen scales are as follows:

Validity

- Lie (L)
- Frequency (F)
- Defensiveness (K)

Pathological

- 1-Hypochondriasis (Hs)
- 2-Depression (D)
- 3-Hysteria (Hy)
- 4-Psychopathic Deviate (Pd)
- 6-Paranoia (Pa)
- 7-Psychasthenia (Pt)
- 8-Schizophrenia (Sc)

9-Mania (Ma)

Clinically Useful

5-Femininity (Mf)

0-Introversion (Si)

Scales are identified by either using the two letter abbreviation associated with it or by the number of that particular scale, e.g., the schizophrenia scale is referred to as either Sc or Scale-8.

Minnesota normative group. The original Minnesota normative group consisted of 724 individuals, mostly relatives and friends of patients at the University hospitals in Minneapolis. The only criterion for exclusion was that the individual was currently under the care of a physician. The test authors, Hathaway and McKinley, ended up with a fairly representative cross-section for gender and marital status of the population of Minnesota in the late 1930's. The age range was 16 to 55 (Dahlstrom et al., 1972). Other subjects were added to this group as the scales were developed. There were 265 high school graduates who came through the University of Minnesota Testing Bureau, 265 skilled workers with the Work Progress Administration, and 254 medical patients who did not report psychiatric problems (Green, 1980).

K-Corrections. Correction weights (K) were added to five of the pathological scales (Hs, Pd, Pt, Sc, and Ma) to improve their discrimination. The purpose of the K is to compensate for the defensiveness of the examinee. The K

weights are computed from the subject's raw score on the K-scale, which measures defensiveness or social desirability. The percentage of K which the five scales receive is standardized and is based on research demonstrating the ability of that percentage of weight to optimally improve the hit-rate of correctly identifying pathology when it does exist (Meehl & Hathaway, 1946).

Criterion nature of the MMPI. The MMPI was developed as a criterion test (Hathaway, 1956). In developing criterion tests, the normal group and the criterion group are given the same set of questions for a scale. How each group responds to these items determines which items discriminate, and these items are subsequently retained. The discriminating items are then cross-validated by giving them to another criterion group. By using the scores of the normal group as a reference, it is determined at what point or elevation the scale score successfully discriminates between normals and those in the criterion group. That point or elevation is used as the index of discrimination.

The common use of the term "adult norms" to refer to the MMPI reference group may be inappropriate in that in the original normal group, the age range was 16 to 55. On a criterion test, one does not use separate age or group norms. There is just one normal group which sets the scale, so it is the same for all persons tested. This group is not used for comparison; rather, it is a standard from which the scale is calibrated. On a criterion test, the person is

described by her/his elevation on the scale and not compared to other examinees. The interpretation can be determined without knowing how other examinees have performed on the instrument. By the elevation (position on the scale, higher or lower), one can know the amount of the trait that one possesses. The test is independent of norms.

Development of adolescent norms. Despite the criterion nature of the MMPI, many clinicians and researchers insist on applying group-specific norms. The most commonly applied group norms are the adolescent norms. The source of the adolescent normative group was Hathaway and Monachesi's (1963) state-wide sample. It was collected in Minnesota during the decades of 1940, 1950, and 1960. Researcher Peter Briggs selected the scores of 100 boys and 100 girls from ages 14, 15, and 16; and 80 boys and 40 girls who were 17. An additional 1,046 profiles were collected during 1964 from five other states: Alabama=129; California=189; Kansas=230; Missouri=108; North Carolina=225; Ohio=165. None of these adolescents were institutionalized or in treatment for emotional disturbances (Marks, Seeman, & Haller, 1974). These norms have been published (Archer, 1987; Dahlstrom et al., 1972; Green, 1980; Lachar, 1974; Marks et al., 1974). K-corrections are not used with the adolescent norms.

Adolescent norms vs. standard K-corrected T-scores. A system of code-type (high-point and two-point codes) interpretation for the adolescent norms has been developed

and published (Marks et al., 1974). However, adolescent norms submerge profiles and in many cases fail to discriminate pathology when it is present. Ehrenworth and Archer (1985) suggested lowering the 70-T cutoff to 65-T when using the adolescent norms.

Conversely, adolescents scored with the standard K-corrected T-scores show consistently higher elevations on scales F, 4, and 8, even when no serious psychopathology is present (Archer, 1987). Hathaway and Monachesi (1963) reported that ninth-graders had mean scores with K-corrections on scales 4, 8, and 9 which were approximately 10 T-score points higher than the original Minnesota sample of adults (age range: 16 to 65). Ball (1962) found that non-delinquent adolescents also achieved mean T-scores near 60 on scales F, 4, 7, 8, and 9 while the other scales were near 50. Baughmam and Dahlstrom (1968) found that scales F, 4, 7, 8, and 9 were elevated near 60 among eighth-grade girls and boys, while scales 8 and 9 were almost 70-T for boys. These elevations could be the result of the turmoil characteristic of many adolescents, or other differences in item endorsement that may not have any psychopathological implications (Green, 1980). Adolescents admit more feelings of alienation, problems in relationships and antisocial beliefs (Dahlstrom et al., 1972). These are characteristics of the F, 4, and 8 scales.

Those who argue against adolescent norms insist that the MMPI is a criterion instrument and that the same

scale--based on the original normal group--should be used regardless of age or other categories. The differences between adolescents and adults are significant, meaningful and interpretable. Leona Dahlstrom (1987) indicates that using specific group or cultural norms tends to minimize important sources of conflict with the dominant culture. It explains deviations as only typical reactions of his/her group (adolescent vs adult or black vs white). The stresses that the individual is undergoing, as well as their coping strategies to deal with them, will be obscured.

Those who support the use of adolescent norms are concerned about adolescents being labeled pathological and/or deviant when they simply may be going through a natural period of developmental distress.

The standard method for assessing adolescents is the dual profile method where one compares the individual on both sets of norms (Dahlstrom, L., 1987; Green, 1980; Marks et al., 1974). It is often recommended to try both and see which works best in a particular setting.

The best way to choose the most appropriate scaling method would be an empirical test of which procedure provides the most accurate description of the subjects being evaluated or which method best discriminates "deviance" from "normalcy" in regard to the population in which the test is being used. This study will assess which scaling method is more appropriate in this juvenile court setting.

Race and the MMPI. Differences in scale elevations between whites and blacks were reported in earlier studies

(Ball, 1960; Gynther, 1969; McDonald & Gynther, 1962). Green (1980) reviewed the literature on black/white differences and came up with a consistent pattern of differences only for scales 8 and 9, with blacks scoring higher, but usually by less than five T-score points. In 1976, Klinge and Strauss found no significant differences between white and black adolescents at Detroit's Lafayette Clinic. Also, Bertelson, Marks, and May (1982) found no significant differences between races. More recently, Archer, Gorden and Kircherner (1986) found minimal (less than three T-score points) differences between black and white adolescents. Since the sample in this study will include both whites and blacks, this study will test for significant differences on Scale-8 between these two groups.

Reading Ability and the MMPI. Dahlstrom et al, (1972) and Williams (1985) recommend a minimum reading grade level of fifth or sixth grade for the MMPI. There was no specific recommendation for minimum reading grade level when an audiotape is used. However, Williams does say that if an adolescent scores below an IQ of 65, or has less than a third-grade reading level, the MMPI should not be administered in any form. Prior research at the Clinic for Child Study has shown that nonreaders (below a fourth-grade level) have significantly higher scores on Scale-8 than those classified as readers (fourth-grade level and above) (Regan & Fruchtman, 1990). This study will determine if this is due to greater deviance or pathology in nonreaders.

Other demographic and background correlates specific to Scale-8. Dahlstrom, Diehl, and Lachar (1986) did a multiple regression of Scale-8 on the background factors of age, gender, race, SES, and educational level with a sample of 1,196 black and white, normal adults. The total R^2 for all five variables was .122. With a sample this size, the multiple regression coefficient was significant, but was of low magnitude and accounted for only 12% of the variance in Scale-8.

Hathaway and Monachesi (1963) found no significant differences when they used occupational level as an index of SES.

In regard to gender, Moore and Handel's (1980) study of 16-year-old and 17-year-old adolescents found that when the standard K-corrected T-scores were used, males scored significantly higher than females on Scale-8 as well as Scales F, 4, 5, 7, and 9. Hathaway and Monachesi (1963) also found that boys were more likely than girls to have high scores on Scale-8. However, Marks et al. (1974) reported that females consistently scored higher on Scale-8. The effect of gender on MMPI scale scores is not clear and further research needs to be done in this area. This study will test for significant differences in Scale-8 scores between females and males in this population.

Reliability of the MMPI. The reliability of the standard MMPI has been established through several test-retest studies over various time intervals. Many of

these studies are reported in Dahlstrom, et al. (1972). Green (1980) summarizes the reliability studies for each scale.

Scale-8 on the Standard MMPI

Development. Scale-8 was developed by contrasting the item endorsements of the original Minnesota normative group with those of 50 patients who had been diagnosed as schizophrenic. Items were selected solely because the criterion group answered them differently from the normal and other reference groups. The final Scale-8 was derived from 152 items, all of which showed statistically reliable differences for the schizophrenia criterion. But many of these items also differentiated other criteria, such as depression and hypochondria. Some of these items were kept in the test because it was felt that clinical syndromes interrelate in terms of symptoms and features (Hathaway, 1956). The completed version of Scale-8 contained 78 items.

Factor analysis. The only published factor analysis done on the Scale-8 items was a partial one done by Comrey and Marggraff (1958). The computer program developed by Comrey did not permit the analysis of matrices exceeding 68 variables. As a result, they selectively eliminated the 17 items on Scale-8 which overlapped with Scale-7, as well as a few items overlapping with other scales. The actual analysis consisted of 58 items on Scale-8 plus the variables of age, sex and hospitalization, for a total of 61

variables. They used 360 cases, half of which were psychiatric patients with varied diagnoses and half normal adults. He used a centroid extraction with a varimax rotation. The final rotated solution resulted in 12 factors. However, after the fifth factor, there was only one loading greater than .30. The 12 factors were:

I-Paranoia

II-Poor Concentration

III-Poor Physical Health

IV-Psychotic Tendencies

V-Rejection

VI-Withdrawal

VII-Father Identification

VIII-Sex Concern

XI-Repression

X-Mother Identification

XI-Age

XII-Other Psychotic Tendencies

The importance of this factor analysis to the 168 is questionable. Seven Scale-8 items of the first 168 were excluded. This leaves only 21 items in common with the 28 items used in this research (see Table 1, p. 23). Also, the items that correlated with Scale-7 that were left out may be critical in the sense that traits do combine and overlap in the individual.

Item grouping by content. Harris and Lingoes (1955) used a face validity or content analysis approach in

Table 1

168 Items on the Comrey and Marggraff Factors

		Comrey-Marggraff Factors										
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	8		X			X							
	15												
	16	X				X							
	17							X					
	20								X				
	21										X		
	22												
1	24	X				X							
6	32												
8	33	X											
	35												
	37												X
I	38	X											
T	40		X				X						
E	41		X										
M	47			X							X		
S	52	X											
	65							X				X	X
	76												
	97												
	103			X									
	104						X						
	119												
	121	X											
	156			X							X		
	157												
	159												
	168	X									X		

grouping items into subscales on Scale-8 of the full MMPI. They ended up with three major groupings: Object Loss, Lack of Ego Mastery-Intrapsychic Autonomy and Bizzare Sensory Experiences. Object Loss was divided further into Social Alienation and Emotional Alienation. Lack of Ego Mastery-Intrapsychic Autonomy was subdivided into three subscales. These were: Lack of Ego Mastery Cognitive, Lack of Ego Mastery-Conative, and Defective Inhibition. These subscales, simplified in outline form with explanations (Green, 1980; Caldwell, 1988), are:

1. Object Loss
   a. Social Alienation
      1) Lacks rapport with others
      2) Feels abused and misunderstood by others
   b. Emotional Alienation
      1) Life is ungratifying
      2) Out of touch with themselves
      3) No sense of self-identity
2. Lack of Ego Mastery-Intrapsychic Autonomy
   a. Lack of Ego Mastery-Cognitive
      1) Not in control of one's thinking
      2) Poor memory and concentration
      3) Strange thoughts
   b. Lack of Ego Mastery-Conative
      1) Lack of interest and energy
      2) Lethargic or inert

c. Lack of Ego Mastery-Defective Inhibition

1) Lacks impulse control

2) Feelings and actions disconnected

3. Bizarre Sensory Experiences

The items from the 168 that are on these subscales are shown in Table 2, below. This scheme accounts for 70 of the 78 items on the full MMPI, although there is a great deal of

Table 2

168 Items on the Harris and Lingoes Subscales

		Harris-Lingoes Factors					
		Sc1A	Sc1B	Sc2A	Sc2B	Sc2C	Sc3
	8		X		X		
	15						
	16	X					
	17						
	20						
	21	X					
	22					X	
1	24	X				X	X
6	32			X	X		
8	33			X			
	35	X					X
I	37						
T	38						
E	40			X			
M	41			X			
S	47					X	
	52	X					
	65	X					
	76		X	X			
	97				X		
	103					X	
	104		X	X			
	119					X	
	121	X					
	156				X	X	
	157	X					
	159		X				
	168		X				

item overlap. On the 168, this scheme accounts for 23 of the 28 items on Scale-8. The problem with this grouping is that the complex and abstract labels make the subscales difficult to apply and interpret on a behavioral level.

The MMPI-168

Development. The full MMPI (399 items) is one of the most widely used personality tests for both adults and adolescents. However, it is time consuming and especially frustrating for a population of impulsive, acting-out, and poorly motivated youngsters. While several short forms of the MMPI have been developed, the MMPI-168 appears to be the most promising in terms of accuracy of predicting the longer or standard-form scores. The 168 consists of the first 168 items of the standard MMPI. A table for converting the short-form raw scores to the standard-form raw scores has been published by Overall, Higgins and DeSchweinitz (1976). Factor analysis yields the same factors for both the standard MMPI and the 168 (Overall et al., 1973). Scale correlations with the standard MMPI range from .77 to .97 for psychiatric patients, medical patients, and normal college students. Lueger (1983) reported correlations ranging from .62 to .90 with adolescent delinquents. Correlations of .66 to .96 were reported by Cadow and Macbeth (1984) with adolescent psychiatric patients. Population-specific conversions were developed for the Clinic for Child Study, using a sample of 236 Youth Home residents (Regan, 1988), and will be used in this study.

Clinical correspondence. Though the 168 demonstrates statistical agreement with the standard form, this does not mean clinical validity. Clinical decisions are based on high points and two-point codes. Interpretations of these codes have been validated on a variety of populations, have been published and are used in computer generated reports (Archer, 1986; Dahlstrom et al., 1972; Graham, 1977; Green, 1980; Lachar, 1974; Marks et al., 1974). The criterion for clinical validity has been how well the 168 matches the full test on high points and two-point codes. The 168, at best, matches the full test high points 70% of the time, and two-point codes 50% of the time. This failure to match two-point codes better has led some researchers to caution that the 168 is of limited clinical utility (Hoffman & Butcher, 1975).

However, "failure to match" does not mean that the 168 is less accurate in clinical decision making. Three studies have been published which demonstrate that the 168 is slightly superior to the full MMPI on various measures of diagnostic discrimination and consensual diagnosis (Overall, Butcher, & Hunter, 1975; Overall, Higgins, & DeSchweinitz, 1976; Newmark & Finch, 1976). This suggests that the 168 may have clinical validity apart from the standard MMPI. It may be that because the test is shorter, the respondent is more consistent, attentive and accurate in taking the test. Most of the earlier research on the 168 has centered around establishing its correspondence to the full MMPI. However,

the results have been disappointing. Many clinicians feel that the 168 should be treated and validated as a separate test.

Recent research. More recently many articles have been published in which the 168 was used as an independent measure of pathology (Berven, Habeck, & Malec, 1985; Kahn et al., 1987; ; Mizes, 1988; Rohsenow, 1982; Schaffer, et al., 1988). Validation studies also are becoming more frequent where there is empirical validation of 168 scale correlates (Malec, 1983; Sexton et al., 1987; Singh, 1984). However, there is no published research on Scale-8 of the MMPI-168 in regard to separate validation of correlates related to Scale-8. This research will be focused entirely on Scale-8 of the 168.

Reliability of the 168. The reliability of the 168 was established at the Wayne County Juvenile Court Clinic for Child Study by Regan & Fruchtman (1990) using 30 incarcerated delinquents. The reliability of Scale-8 of the 168 was .88. The reliability for Scale-8 on the full MMPI ranges from .74 to .85 (Dahlstrom et al., 1972). There have been no published item or factor analyses for Scale-8 of the 168.

Delinquency and Scale-8

Scale-4 was originally intended to measure psychopathy, sociopathy, or delinquency, and it still does, but it measures a certain type of delinquent who is bolder, angrier

and more rebellious. When Scale-8 is scored high by persons who are not mentally ill, it appears to suggest a "lone-wolf," bizarre, faulty orientation to the social world (Hathaway & Monachesi, 1963). Clinically, delinquents are known to have difficulty in adapting to the usual demands and controls of society. Scale-8 suggests delinquents whose behavior would be more disturbed and unconventional than Scale-4. These delinquents are not just angry, but confused, alienated, impulsive and disoriented. In Hathaway and Monachesi's study (1963), Scale-8 was related to teachers' ratings on predicted delinquency. High scores (equal to or above a T-score of 70) on scales 4, 8, and 9 have been found to be typical of delinquents (Hathaway and Monachesi, 1963; McKegney, 1967; Fruchtman, 1982).

Emotional Disturbance and Scale-8

Relative to control subjects, disturbed individuals have more highly elevated (scales well above a T-score of 70) MMPI profiles and are rated as more disturbed behaviorally (Walters, Scrapansky, Thomas, Marlow, & Glenn, 1984). Alhough Scale-8 has not been singled out as a specific indicator of emotional disturbance, this scale more than any other seems to indicate mental disturbance and loss of efficiency (Dahlstrom et al., 1972). It reflects disorders characterized by disturbances in thinking, mood, and behavior (Graham, 1977).

Assaultiveness and Scale-8

In the literature, the term assaultiveness is used interchangeably with violence and dangerousness. The MMPI has been used to differentiate between violent and non-violent offenders or delinquents in two different ways. One is the trait approach, in which single scale elevations or high-points are used to differentiate these groups. Using this approach, Panton (1958) found that non-assaultive offenders scored higher on Scale-3 and lower on Scale-8 and Scale-9, while the assaultive group scored higher on Scale-8. Contrary to this, Carrol and Fuller (1971) found that a group of non-violent offenders scored higher on scales 8 and 9 than the violent offenders. Butcher (1965) used delinquent boys who were placed in four groups according to their level of aggression (low, low-middle, high-middle, and high) based on teachers' and peers' ratings. High-aggressive boys scored higher than the combined middle groups on scales 1, 3, 4, 8, and 9. Also, the low-aggressive boys scored higher than the combined middle groups on scales 1, 7, 8, and 0. Although both groups scored high on Scale-8, the difference was that low-aggressive boys had scales elevated that indicated the individual inhibits acting-out (Scale-1, Scale-7 and Scale-0) and the high-aggressive boys had scales elevated that indicated the individual is more likely to act-out (Scale-4 and Scale-9).

The other approach is the code-type method which involves patterns of elevations on two or more scales. The

most typical is the two-point code type where the code type consists of the two highest scales equal to or greater than a T-score of 70, using the standard K-corrected T scores. Gilberstadt and Duker (1965) found male VA patients with a 4-3 code type to be assaultive and impulsive persons with poorly controlled hostility. This finding was supported by Persons and Marks (1971) with male inmates in a medium security prison. However, McCreary (1976), using male and female offenders, discovered that 4-3's had the fewest assaultive convictions and 8-4's had the most. It is noted that McCreary's sample was court-referred from a county jail and the most serious male offenses were indecent exposure, assault and child molestation. Persons and Marks were dealing with more chronic and severe assaultive offenders, and Gilberstadt and Duker's classification was based on behavioral observations and not legal convictions. The nature of the relationship between assaultiveness and the MMPI and more specifically Scale-8 is unclear and will be a focus of this study.

Reading in Relation to Delinquency, Emotional Disturbance, and Assaultiveness

Academic skill deficits may be the strongest covariate of antisocial behavior (Dishion et al., 1984). Delinquent youngsters have difficulty with school, particularly in the area of reading. In Meltzer's et al. (1984) study of delinquent youngsters, a significantly higher prevalence of

school problems was found among delinquents, beginning as early as kindergarten. By the second grade 45% of the delinquents to be were already delayed in reading, in contrast to 14% in the comparison group. Kaufman, Cullinan, and Epstein (1987) found that poor reading performance was related to high scores for Conduct Disorder and Socialized Delinquency on the Behavior Problems Checklist. Hathaway and Monachesi (1963) found that poor readers scored higher on Scale-8, but did not believe it was because of poor reading ability. They suggest that whatever the factor(s) is (are) that make up Scale-8 may be the meaningful variable(s) that underlie the reading deficiency. Fruchtman's study (1982) of incarcerated delinquents in the Wayne County Youth Home found that low reading grade level along with current offense predicted assaultiveness, but at only a slight improvement over chance expectations. Sociologists also link school failure with delinquent behavior. Poor students experience social alienation, isolation, aimlessness, and powerlessness. They have no reason to invest in conformity and they have little to lose by deviation from it (Eliot, Ageton, & Canter, 1979). This study will attempt to demonstrate that there is a relationship between reading and the dimensions of delinquency, emotional disturbance, and assaultiveness, such that nonreaders (below a grade level of 4.0) will be more delinquent, emotionally disturbed and assaultive than readers (equal to or above a grade level of 4.0).

Chapter III

METHODOLOGY

Analysis of Scale-8

Source of data. Three hundred consecutive cases will be selected from the files of the Wayne County Clinic for Child Study (Clinic). At the Clinic, psychologists administer a battery of intelligence, achievement and personality tests to adjudicated delinquent youngsters whose charges range from home truancy to first-degree murder and for whom the court has either ordered or is considering probation or out-of-home placement. The population of youths tested at the Clinic is about 75% black and 90% male, with an age range from 12 to 17. The youngsters are all residents of Detroit and the adjacent Wayne County suburbs.

Test administration. Each individual is given three hours of testing in small groups ranging in size from 5 to 12 individuals. At each testing there is at least one test administrator, a youth home supervisor and at least one deputy sheriff. The administrator explains the purpose of the tests, who sees the results and how these results will be used. All directions are read for each test, and sample questions and problems are given where appropriate. The MMPI-168 is administered by audio tape. The tape is stopped at intervals of every 30 statements so the youths can have questions repeated or explained. The explanations are restricted to definitions of difficult or outdated words.

The 168 is machine scored. If items are missed or double scored, this information is provided. These youths also are seen individually for an interview and administration of the Wechsler Intelligence Scale for Children-Revised (WISC-R) (Wechsler, 1975) if they are below the age of 17. The 17-year-olds are given the Wechsler Adult Intelligence Scale-Revised (WAIS-R) (Wechsler, 1981).

Screening for invalid MMPI profiles. The three validity scales (L, F, and K) were constructed to provide information on how the examinee took the test, more specifically, whether the subject was trying to make him/herself look good or was exaggerating his/her symptoms. The L and K scales are use to detect a "fake-good" response set. The L-scale is composed of obvious items, e.g., "I like everyone I know." Individuals who score high on this scale are either rigidly moralistic or are making a deliberate but unsophisticated attempt to make themselves look good. The K-scale is composed of more subtle items, and a high score on this scale indicates defensiveness or a less deliberate attempt to present themselves in a favorable light. A T-score equal to or greater than 70 is routinely used as a cut-off on both the L- and the K-scales in screening for invalid profiles. The F-scale is used for detecting a malingering or "fake-bad" response set. High scores have been associated with not only a fake-bad response set, but with random responding, a "cry for help," confusion due to psychosis and illiteracy (Gearing, 1979).

The F-scale is composed of all of the items on the MMPI that were endorsed by less than 10% of the normal group. Gough (1956) and Meehl (1956) recommended a cut-off of greater than a raw score of 16 (T-score of 80). However, delinquents and prisoners often attain F's greater than 80 and still produce valid profiles (Hathaway and Monachesi, 1953; McKegney, 1965; Gynther, 1961).

For this research, profiles with T-scores equal to or greater than 70 (using the standard K-corrected T-scores) on the L and K scales will be eliminated. Subjects will not be screened on the F-scale.

Background and demographic data. Frequencies and percentages will be presented on each of the levels of the background variables. The background variables are:

SES (family income)

1= < $10,000 or Public Assistance

2= $10,000 to $19,999

3= $20,000 to $29,999

4= ≥ $30,000

Age

1= ≤ 14

2= 15

3= 16

4= 17

Gender

1= male

2= female

Race

1= black

2= white

3= other

Offense Type

1= murder

2= rape

3= assault

4= robbery of person

5= property offenses

6= drugs

7= status (school and home truancy, curfew violation)

8= other

IQ (as measured by the revised Wechsler Scales)

1= < 80 (below low-average)

2= ≥ 80 (low-average and above)

Reading Level (as measured by the Vocabulary subtest of the Metropolitan Achievement Test [Prescott, Balow, Hogan, & Farr, 1986])

1= nonreader (< 4th grade level)

2= reader (≥ 4th grade level)

Incarceration

1= incarcerated

2= not incarcerated

Effects of background variables on Scale-8. The average raw score for Scale-8 will be computed for each of the levels of each of the background variables. These will

then be tested for significant differences, using a *t*-test when the variable has two levels and a oneway ANOVA when there are three or more levels (using the *F*-test for overall differences and the Scheffe statistic for differences between specific levels if the overall *F* is significant). The level of significance will be set at .05 for all *F*, *t*, and Scheffe tests. The estimated omega-squared statistic (ω^2) will be used as an index of strength of association between the levels of the variables on all *F* and *t* tests.

The items on Scale-8 also will be tested for differences in item endorsement by the different levels of each of the background variables. Each of the 28 items and the K-dichotomy will be crosstabulated with each of these variables, and a chi-square test of independence will be used to determine if the level of a particular background variable is related to item endorsement. Where there are two levels, a phi coefficient (ϕ) will be computed to show the strength of association; if there are three or more levels, Cramer's V will be used. This is a variation of phi for contingency tables greater than a 2 X 2 (Norušis/SPSS, Inc., 1990a). The items also will be crosstabulated with high scorers (upper 27th percentile) vs. low scorers (lower 27th percentile), as recommended by Kelley (1959), to determine which items are the best discriminators.

Reliability. The index of reliability will be the Kuder-Richardson-20 (Kuder and Richardson, 1937), which is a variation of the alpha-coefficient for dichotomous data.

Factor analysis of Scale-8. The item endorsements on Scale-8 for each of the 300 subjects will be hand-scored, using scoring keys. Items endorsed will be scored '1' and items not endorsed will be scored '0'. Since K-corrections are used on this scale and the weight is equivalent to the total raw score on the K-scale, it may account for a significant part of the total scale score. The raw scores on the K-scale will be converted to a dichotomy by coding those below the median as '0' and those equal to or above the median as '1'. The variables in the factor analysis will be the 28 Scale-8 items and the K dichotomy. The analysis will be done using the SPSS/PC+ Factor Analysis program (Norušis/SPSS, Inc., 1990b) A principal components extraction will be used because it explains more variance than any other method of extraction and is most useful when the goal is exploration. Then a varimax rotation will be employed which is a practical approach that simplifies the interpretion of the resulting factors by maximizing the variance of the loadings on each factor (column). No limit will be set on the number of factors. However, only those rotated factors with at least one loading $\geq .50$ will be considered significant in contributing to the interpretation of the scale. An item by factor matrix will be drawn up and this will be compared to the item by factor matrix for Comrey and Marggraff's factor analysis (see p. 23) and the item by content-group matrix for Harris and Lingoes' content groupings (see p. 25).

Validition of Scale-8

Classification of subjects. On the delinquency dimension, subjects will be classified as "high" based on the following criteria:

1. five or more criminal charges
2. current or prior probation
3. age equal to sixteen

The age will be kept constant to control for the effect of time on the accumulation of charges. The criteria for low delinquency will be:

1. less than five criminal charges
2. neither current probation or prior probation
3. age equal to 16

For the emotional disturbance dimension, the criterion for emotionally disturbed will be:

1. inpatient in a psychiatric hospital within the past five years

For not emotionally disturbed the criteria will be:

1. never an inpatient at a psychiatric hospital
2. never involved in therapy or counseling
3. never classified as educationally emotionally impaired
4. no evidence of suicide threats or attempts

For the assaultiveness dimension, the criterion for assaultive subjects will be:

1. conviction on at least one assaultive offense (murder, rape, robbery, and assault)

The criteria for non-assaultive subjects will be:

1. no conviction on an assaultive offense
2. never charged with an assaultive offense
3. no evidence of assaultive behavior, such as school exclusions for fights in school or reports from parents of assaultive behavior.

Each file of each subject will be reviewed to assure accurate classification. The subjects will be selected randomly based on the criteria for each level of each dimension from a pool of 821 consecutively tested delinquents at the Clinic for Child Study.

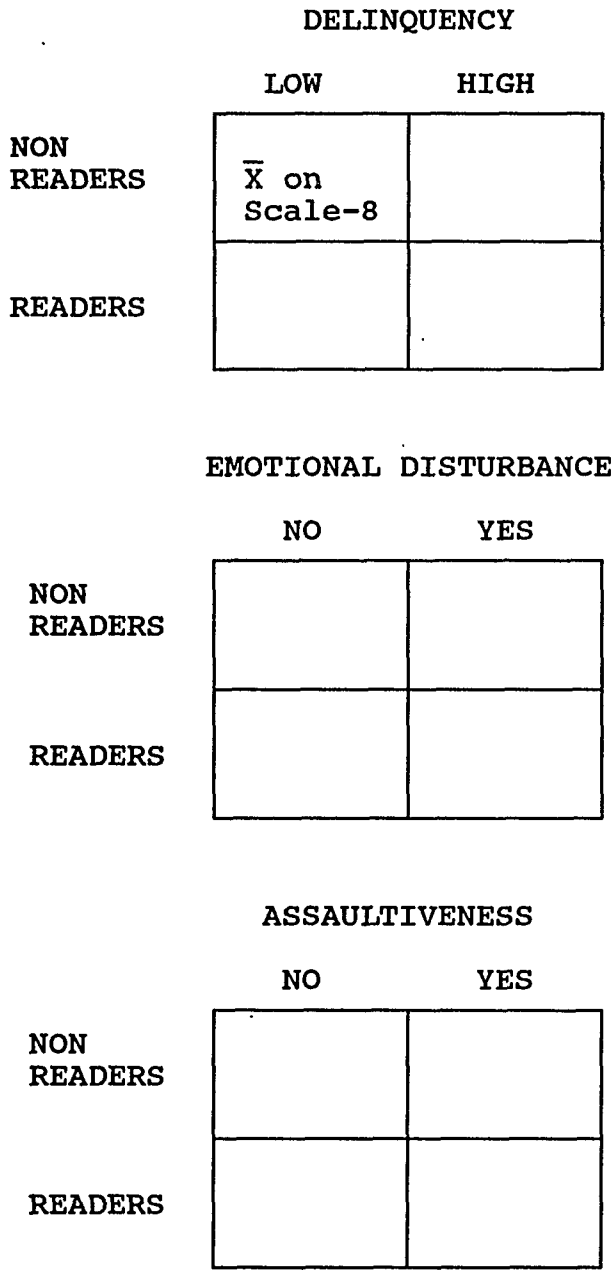
Statistical design. Six 2 x 2 factorial ANOVA's will be used. Two levels (high and low) of each of the three dimensions of delinquency, emotional disturbance and assaultiveness will be crossed with two levels of reading (readers and nonreaders). The dependent variable will be the Scale-8 K-corrected T-scores. This will then be repeated for the T-scores based on adolescent norms. This design will test the 12 hypotheses in Sets IV, V, VI, and VII which deal with the following issues:

1. Whether or not those rated high on a dimension will score higher on Scale-8.
2. Which scaling method (standard K-corrected T-scores or T-scores based on adolescent norms) is more accurate in discriminating on the two levels of the three dimensions.
3. Whether nonreaders will score higher than readers

on Scale-8, regardless of the scaling method used and over both levels of the three dimensions. A visual representation of this design is shown in Figure 1 (p. 42). The level of significance for all of the F tests will be set at .05. Where the F's are significant, t-tests will be used to test for significance between the groups involved. These tests will be one-tailed with the level of significance set at .05. The estimated omega-squared (ω^2) statistic will be used as an index of strength of association for F and t tests.

Figure 1

2 X 2 ANOVAS for the Dimensions of Delinquency, Emotional Disturbance and Assaultiveness by Reading Level



Chapter IV

RESULTS

Description of Sample for the Analysis of Scale-8

Sample size. The sample for the item analysis and the factor analysis consisted of 324 consecutive referrals to the Wayne County Juvenile Court Clinic for Child Study. Four cases were eliminated because of T-scores equal to or greater than 70 on the L-scale, and three cases were eliminated because of T-scores equal to or greater than 70 on the K-scale. Also, because there were only five cases in the "other" category of race, these were eliminated because a category of five would produce no interpretable information. This left a total of 312 cases. Also, there were some changes made in the offense categories. Because there were only nine "rape" offenses, this category was combined with "assault." "Property offense," which numbered 97, was broken down into "car theft" and "other property" (mostly breaking and entering). Since the offenses in the "other" category were mostly firearms violations, this was broken down into "firearms" and "other offenses." This resulted in the nine categories shown in Table 3, p. 46.

Sample statistics. The frequencies and percentages of true and false responses for each item on Scale-8 for the entire sample are shown in appendix B, p. 107. The descriptives for the background variables are shown in Table 3, pp. 45-46. For the category of age, 71 or 22.8% were 14

and under, 88 or 28.2% were 15, 129 or 41.3% were 16 and 24 or 7.7% were 17. The breakdown for race was 256 or 82.1% black and 56 or 17.9% white. The categorization by gender showed that 271 or 86.9% were male and 41 or 13.1% were female. For socio-economic status, 183 or 58.7% had family incomes below $10,000 or were on public assistance, 63 or 20.2% had family incomes between $10,000 and $19,999, 38 or 12.2% had family incomes between $20,000 and $29,999 and 28 or 9% had family incomes equal to or greater than $30,000. The breakdown by offense was 68 or 21.8% for assault, 55 or 17.6% for car theft, 45 or 14.4% for drugs, 42 or 13.5% for breaking and entering and property theft, 32 or 10.3% for robbery of a person, 29 or 9.3% for status offenses, 22 or 7.1% for firearms violations, 11 or 3.5% for murder, and 8 or 2.6% for other unidentified offenses not included in the above categories. Of the 312 subjects, 291 or 93.3% were incarcerated in the Youth Home when they were tested, and 21 or 6.7% were not incarcerated. Those with IQ levels equal to or above 80 were 235 or 75.3% and those below 80 were 77 or 24.7%. Readers numbered 218 or 69.9%, and nonreaders were 94 or 30.1%.

Tests for Significant Differences Between the Levels of Each Demographic Variable

Table 4, p. 48, shows the means, standard deviations and significance test results for all of the background variables. Although the overall F for age was significant, $p < .05$ with an estimated ω^2 of .02, subsequent comparisons

Table 3

Frequencies and Percentages

of Background Variables

Category	n	Pct.
Age		
≤ 14	71	22.8%
15	88	28.2%
16	129	41.3%
17	24	7.7%
Race		
Black	256	82.1%
White	56	17.9%
Gender		
Male	271	86.9%
Female	41	13.1%
SES		
< $10,000 or PA	183	58.7%
$10,000 to $19,999	63	20.2%
$20,000 to $29,999	38	12.2%
$30,000 and above	28	9.0%

Cont'd.

Table 3, Cont'd.

Category	n	Pct.
Offense		
Assault	68	21.8%
Car Theft	55	17.6%
Drugs	45	14.4%
Property Offenses	42	13.5%
Robbery of Person	32	10.3%
Status Offenses	29	9.3%
Firearms	22	7.1%
Murder	11	3.5%
Other	8	2.6%
Incarceration		
In Youth Home	291	93.3%
Not in Youth Home	21	6.7%
IQ		
Below 80	77	24.7%
80 and Above	235	75.3%
Reading		
Readers	218	69.9%
Nonreaders	94	30.1%

using the Scheffe test revealed no significant differences between the levels of the age variable. There was a trend for the Scale-8 scores to decrease with increasing age. A significant t, $p < .05$, was found for the differences between readers and nonreaders on Scale-8 scores. The estimated ω^2 was .01. No significant mean Scale-8 differences were found between the levels of the background variables of gender, race, SES, incarceration, offense and IQ.

Crosstabulation of item endorsement by the levels of each background variable

Scale-8 items by age. For age, 17-year-olds showed less frequent endorsement than the other ages for the five significant items: 15, 16, 22, 65, and 76 (See Table 5, p. 49). Significant items were those items which showed a significant difference ($p. \leq .05$) in frequency of endorsement between two or more levels of a variable. There appeared to be a gradual reduction in item endorsement as age decreased except for items 16, 65 and 76, where 15-year-olds endorsed these items more frequently than any other age group. The chi-squares ranged from 7.94 to 12.29 and the Cramer's V's ranged from .20 to .22. The item that showed the strongest association with age was item 22, "At times I have fits of laughing and crying that I cannot control." (True), with younger subjects (Ss) endorsing this item more frequently than older Ss.

Table 4

Significance Tests for the Levels of

Each of the Background Variables

	n	Mean	SD	Sig.Test	Prob.
Age				$\underline{F}$ = 3.13	< .05
≥ 14	71	9.33	4.45		
15	88	9.25	4.51	→ Scheffe	> .05
16	129	8.42	4.27		
17	24	6.54	3.76		
Gender				$\underline{t}$ = 1.05	> .05
Male	271	8.77	4.41		
Female	41	8.34	4.29		
Race				$\underline{t}$ = 1.07	> .05
Black	256	8.89	4.40		
White	56	7.91	4.26		
SES				$\underline{F}$ = 2.07	> .05
< $10,000	183	8.93	4.47		
$10,000 to $19,999	63	9.14	4.22		
$20,000 to $29,999	38	8.34	4.26		
≥ $30,000	28	6.89	4.15		
Incarceration				$\underline{t}$ =-0.88	> .05
In	291	8.65	4.30		
Out	21	9.71	5.45		
Offense				$\underline{F}$ = 0.68	> .05
Assault	68	8.99	4.67		
Car Theft	55	8.20	4.05		
Drugs	45	8.22	4.28		
Property	42	8.74	4.33		
Robbery of Person	32	10.06	5.00		
Status	29	8.14	4.31		
Firearms	22	9.05	4.34		
Murder	11	8.18	4.35		
Other	8	9.25	3.45		
IQ				$\underline{t}$ = 1.74	> .05
Below 80	77	9.48	4.44		
80 and above	235	8.47	4.35		
Reading Level				$\underline{t}$ = 2.20	< .05
Nonreaders	94	9.56	4.55		
Readers	218	8.35	4.28		

Table 5

Significant Items by Age[a]

Items		ages n	≤ 14 (71)	15 (88)	16 (129)	17 (24)	X^2	V[b]
15	Once in a while I think of things too bad to talk about. (T)		55 (78%)	58 (66%)	75 (58%)	12 (50%)	9.70	.18
16	I am sure I get a raw deal from life. (T)		48 (32%)	42 (47%)	55 (43%)	5 (21%)	7.94	.16
22	At times I have fits of laughing and crying that I can't control. (T)		38 (54%)	44 (50%)	44 (34%)	6 (25%)	12.29	.20
65	I loved my father. (F)		6 (9%)	17 (19%)	9 (7%)	1 (4%)	10.26	.18
76	Most of the time I feel blue. (T)		29 (48%)	49 (56%)	57 (44%)	6 (25%)	8.45	.16

[a]items significant, $p < .05$
[b]Cramer's V

Scale-8 items by race. Blacks endorsed all three significant items, 35, 76, and 157, more frequently than whites (See Table 6, p. 51). The chi-squares ranged from 5.71 to 8.45, and the phis ranged from .14 to .17. The item that showed the strongest association with race was item 76, "Most of the time I feel blue." (True), with black Ss endorsing this item more frequently than white Ss. When this item is read, the phrase "blue means sad" is added to it.

Scale-8 items by gender. Males endorsed four out of the five significant items, 16, 37, 40, and 157, more frequently than females. Females endorsed item 24 more frequently than males (See table 7, p. 52). The chi-squares ranged from 3.87 to 9.12 and the phis ranged from .12 to .18. The item that showed the strongest association to gender was item 157, "I feel that I have often been punished without cause." (True), with males endorsing this item more frequently than females.

Scale-8 items by SES. Three items were significant for this variable, 35, 76, and the K-dichotomy (See table 8, p. 54). For item 35 there was a trend of decreasing endorsement as income level increased. The K-dichotomy showed a trend where the K-score was higher as level of income increased. Item 76 showed a mixed pattern with the second to lowest level of income showing the most frequent endorsement, then the lowest level, followed by the two highest levels in order. The chi-squares ranged from 9.18 to 20.38 and the Cramer's V's ranged from .17 to .25. The

Table 6

Significant Items by Race[a]

	Items	race n	Black (256)	White (56)	X^2	ϕ
35	If people had not had it in for me I would have been much more successful. (T)		101 (40%)	12 (21%)	5.71	.14
76	Most of the time I feel blue. (T)		126 (49%)	15 (27%)	8.45	.17
157	I feel that I have often been punished without cause. (T)		149 (58%)	22 (39%)	5.90	.15

[a]items significant, $p < .05$

Table 7

Significant Items by Gender[a]

	Items	gender n	Male (271)	Female (41)	X^2	ϕ
16	I am sure I get a raw deal from life. (T)		116 (43%)	9 (22%)	5.61	.14
24	No one seems to understand me. (T)		83 (31%)	21 (51%)	5.90	.15
37	I have never been in trouble because of my sex behavior. (F)		76 (28%)	5 (12%)	3.87	.12
40	Most any time I would rather sit and daydream than anything else. (T)		102 (38%)	8 (20%)	4.36	.13
157	I feel that I have often been punished without cause. (T)		149 (58%)	22 (39%)	9.12	.18

[a]items significant $p < .05$

item that showed the strongest association to Scale-8 was item 76, "Most of the time I feel blue." (True), with an increase in endorsement as the level of income decreased.

Scale-8 items by offense. Two items showed significant differential endorsement among the offense categories (See table 9, p. 55). One was item 32, "I find it hard to keep my mind on a task or a job." (True), with Ss charged with robbery endorsing this item most frequently, followed by (in decreasing order) property offenses, murder, assault, car theft, firearms, status, other and drugs. This item yielded a chi-square of 16.38 and a Cramer's V of .23. The other significant item was 159, "I cannot understand what I read as well as I used to." (True), with "other" offenses endorsing this item most frequently, followed by (in decreasing order) firearms, robbery, drugs, assault, murder, car theft and status. The chi-square for this item was 18.33 and the Cramer's V was .24.

Scale-8 items by incarceration. Those incarcerated endorsed item 33, "I have very peculiar and strange experiences." (True) and the K-dichotomy (High K), more frequently than those not incarcerated. While those not incarcerated endorsed item 157, "I have had periods in which I have carried on activities without knowing later what I had been doing." (True), more frequently than those incarcerated (See table 10, p. 57). The chi-squares ranged from 4.52 to 11.89, and the phis ranged from .13 to .21. The item showing the strongest association with Scale-8 was

Table 8

Significant Items by SES[a]

	Items	level n	Under $10,000 (183)	$10,000 to $19,999 (63)	$20,000 to $29,999 (38)	$30,000 and Above (28)	X^2	V[b]
35	If people had not had it in for me I would have been much more successful. (T)		77 (42%)	23 (37%)	11 (29%)	2 (7%)	13.84	.21
76	Most of the time I feel blue. (T)		89 (49%)	37 (59%)	11 (29%)	4 (14%)	20.38	.25
K	K-dichotomy (High)		92 (50%)	43 (68%)	25 (66%)	19 (68%)	9.18	.17

[a]items significant, $p < .05$
[b]Cramer's V

Table 9

Significant Items by Offense[a]

Items	offense n	Murder (11)	Assault (68)	Robbery (32)	Car Theft (55)	Property (42)
32	I find it hard to keep my mind on a task or a job. (T)	3 (27%)	17 (25%)	14 (44%)	11 (20%)	15 (36%)
159	I cannot understand what I read as well as I used to. (T)	2 (18%)	17 (25%)	9 (28%)	7 (13%)	2 (5%)

Table 17, Cont'd.

Items	Offense n	Drugs (45)	Status (29)	Firearms (22)	Other (8)	X^2	V[b]
32	I find it hard to keep my mind on a task or a job. (T)	5 (11%)	5 (17%)	4 (18%)	1 (13%)	16.38	.23
159	I cannot understand what I read as well as I used to. (T)	12 (27%)	3 (10%)	8 (36%)	3 (38%)	18.33	.24

[a]items significant, p. < .05
[b]Cramer's V

the K-dichotomy with high K-scores associated with incarcerated subjects.

Scale-8 items by IQ. Subjects with IQ's below 80 endorsed three items, 35, 76, and 159, more frequently than subjects with IQ's 80 and above (See table 11, p. 58). The chi-squares ranged from 5.17 to 19.42, and the phis ranged from .14 to .26. The item showing the strongest association to Scale-8 was item 76, "Most of the time I feel blue." (T), with Ss having lower IQs (below 80) endorsing this item more frequently.

Scale-8 items by reading level. As shown in Table 12, p. 59, nonreaders endorsed items 47, 52, 103, and 159 more frequently than readers, while readers endorsed items 21 and 76 more frequently than nonreaders. The chi-squares ranged from 4.80 to 14.81, and the phis ranged from .13 to 23. The item that showed the strongest association was 159, "I cannot understand what I read as well as I used to." (True), with nonreaders endorsing this item more frequently than readers.

Scale-8 items by high vs. low scorers. As shown in Table 13, p. 60-61, all of the items were significant, $p < .05$. The chi-squares ranged from 4.08 to 77.96 and the phis ranged from .17 to .69. Item 76 showed the strongest association to Scale-8. Nine of the items plus the dichotomy had phis equal to or greater than .50:

15 Once in a while I think of things too bad to talk about. (T)

21 At times I have very much wanted to leave home. (T)

Table 10
Significant Items by Incarceration[a]

Items	Youth Home n	In (291)	Out (21)	X^2	ϕ
33	I have had very peculiar and strange experiences. (T)	174 (60%)	18 (6%)	4.52	.13
157	I have periods in which I carried on activities without knowing later what I had been doing. (T)	76 (26%)	11 (52%)	5.48	.15
K	K-dichotomy (High)	175 (60%)	4 (19%)	11.89	.21

[a]items significant, $p < .05$

Table 11

Significant Items by IQ[a]

Items	level / n	Below 80 (77)	80 and above (235)	X^2	ϕ
35	If people had not had it in for me I would have been much more successful. (T)	40 (52%)	73 (31%)	10.06	.19
76	Most of the time I feel blue. (T)	52 (68%)	89 (38%)	19.42	.26
159	I cannot understand what I read as well as I used to. (T)	23 (29%)	40 (17%)	5.17	.14

[a]items significant, $p < .05$

Table 12

Significant Items by Reading Level[a]

Items		level n	Non-readers (94)	Readers (218)	X^2	ϕ
21	At times I have very much wanted to leave home. (T)		41 (44%)	132 (61%)	6.95	.16
47	Once a week or oftener I feel suddenly hot all over without apparent cause. (T)		30 (32%)	38 (17%)	7.26	.16
52	I prefer to pass by school friends, or people that I know but have not seen for a long time, unless they speak to me first. (T)		37 (39%)	48 (22%)	9.11	.18
76	Most of the time I feel blue. (T)		52 (17%)	89 (29%)	5.00	.13
103	I have little or no trouble with my muscles twitching or jumping. (F)		29 (31%)	41 (19%)	4.80	.13
159	I cannot understand what I read as well as I used to. (T)		32 (34%)	31 (14%)	14.81	.23

[a]items significant, $p < .05$

35 If people had not had it in for me I would have been much more successful. (T)

37 I have never been in trouble for my sex behavior.(F)

76 Most of the time I feel blue. (T)

121 I believe I am being plotted against. (T)

156 I have had periods in which I carried on activities without knowing later what I had been doing. (T)

K defensiveness or social desireability (Low)

Table 13

Item Endorsement by Low vs. High Scorers[a]

Item	Low n 80	High 91	X^2	ϕ
8	6 (8%)	31 (34%)	16.19	.32
15	23 (29%)	78 (86%)	54.80	.58
16	15 (19%)	54 (59%)	27.48	.41
17	6 (8%)	33 (36%)	18.40	.34
20	5 (6%)	16 (18%)	4.08	.17
21	17 (21%)	71 (78%)	52.68	.57
22	11 (14%)	65 (71%)	55.05	.58
24	7 (9%)	57 (63%)	50.51	.56
32	4 (4%)	38 (42%)	29.09	.43
33	35 (44%)	73 (80%)	22.79	.38
35	9 (11%)	61 (67%)	52.51	.57
37	10 (13%)	33 (37%)	11.54	.27
38	20 (25%)	63 (69%)	31.60	.44
40	16 (20%)	55 (60%)	27.03	.41

Cont'd.

Table 13, Cont'd.

Item Endorsement by Low vs. High Scorers

Item	n	Low 80	High 91	X^2	ϕ
41		6 (8%)	47 (52%)	36.76	.48
		(6%)	(36%)		
47		2 (3%)	35 (39%)	30.38	.43
52		6 (8%)	43 (47%)	30.99	.44
65		1 (1%)	22 (24%)	17.30	.34
76		6 (8%)	69 (76%)	77.96	.69
97		5 (6%)	44 (48%)	34.88	.46
103		9 (11%)	29 (32%)	9.31	.24
104		0 (0%)	8 (9%)	5.54	.21
119		9 (11%)	36 (40%)	16.17	.32
121		2 (3%)	45 (50%)	44.76	.52
156		5 (6%)	48 (53%)	40.89	.50
157		26 (33%)	67 (74%)	27.39	.41
159		5 (6%)	36 (40%)	24.12	.39
168		0 (0%)	25 (28%)	23.59	.39
K		72 (90%)	31 (34%)	53.30	.57

[a]All items are significant, $p < .05$.

Factor Analysis

The factor analysis resulted in ten factors accounting for 54.7 percent of the variance. The correlation matrix (Table 14, pp. 63-64) from which the factors were derived revealed item intercorrelations of very low magnitude. The correlations range from < .01 to .43. There were only five coefficients greater than .30. Table 15, p. 65 shows the

extracted factor matrix and the rotated factor matrix is shown in table 16, p. 66. Table 17, p. 67 contains the communalities (the percentage of variance in each item explained by the common factors), which ranged from .41 to .72 with an average of .55. The eigenvalues (measures of the relative importance of the factors) and percentages for each factor are shown in Table 18, p. 68. In table 19, pp. 69-70, the item number and the text for each item with a loading of ≥ .50 is shown for each of the ten factors. The K-dichotomy and the following items did not load significantly on any of the ten factors:

15 Once in a while I think of things too bad to talk about. (T)

22 At times I have fits of laughing and crying that I can't control. (T)

38 During one period when I was a youngster I engaged in petty thievery. (T)

47 Once a week or oftener I feel suddenly hot all over, without apparent cause. (T)

76 Most of the time I feel blue. (T)

97 At times I have a strong urge to do something harmful or shocking. (T)

156 I have had periods in which I carried on activities without knowing later what I had been doing. (T)

Comparison of sample factors to Comrey and Marggraff factors. Table 20, p. 72 shows the Comrey and Marggraff (C-M) loadings for the items that loaded ≥ .50 on the sample factors. Because of the low magnitude of the C-M loadings, items with loadings of ≥ .30 were used. None of the items that loaded significantly on sample factors II, VII, VIII

Table 14

Correlation Matrix

Scale-8 Items

		8	15	16	17	20	21	22	24
	8	1.00							
	15	.06	1.00						
	16	.04	.11*	1.00					
	17	.05	.11*	-.01	1.00				
	20	.16	.07	-.03	.06	1.00			
	21	.18*	.19*	.09	.07	.02	1.00		
	22	--	.32*	.13*	.08	-.07	.14*	1.00	
	24	.10	.20*	.19*	.10	-.01	.21*	.25*	1.00
S	32	.14*	.16*	.09	--	-.01	.16*	.22*	.13*
c	33	.07	.20*	-.01	.04	-.02	.26*	.16*	.14*
a	35	.10	.16*	.25*	.05	.02	.06	.18*	.26*
l	37	.09	.02	.07	-.02	.10	.07	.06	-.06
e	38	-.01	.08	.06	.05	-.06	.17*	.07	.15*
	40	.07	.15*	.07	.06	.09	.07	.10	.10
8	41	.08	.15*	.08	-.05	-.01	.15*	.24*	.10
	47	--	.18*	.12*	.07	.01	.19*	.18*	.20*
I	52	.01	.11*	.25*	.09	-.06	.07	.18*	.12*
t	65	.12*	.08	.04	.43*	-.04	.12*	.09	.07
e	76	.14*	.28*	.26*	.05	.06	.15*	.16*	.20*
m	97	.06	.11*	.09	-.07	-.03	.24*	.22*	.19*
s	103	.05	.02	--	-.02	--	.05	.04	-.04
	104	.08	-.05	-.04	.04	.06	.05	-.01	.10
	119	.14*	.13*	.01	.10	.15*	.08	.05	.17*
	121	-.01	.12*	.21*	.10	-.09	.09	.20*	.23*
	156	-.02	.20*	.09	.03	.13*	.17*	.15*	.14*
	157	.04	.11*	.09	.04	.06	.09	.20*	.16*
	159	-.05	.09	.03	-.05	.07	.02	.13*	.25*
	168	.03	.08	.07	.06	-.01	.11*	.12*	.25*
	K	-.05	-.23*	-.09	--	--	-.25*	-.30*	-.27*

Cont'd.

*p < .05 (two-tailed tests) -- r < .01

Table 14, Cont'd

Correlation Matrix

	32	33	35	37	38	40	41	47
32	1.00							
33	--	1.00						
35	.11*	.03*	1.00					
37	.08	-.01	-.02	1.00				
38	.09	.05	.09	.12*	1.00			
40	.20	.07	.06	.14*	.07	1.00		
41	.17*	.16*	.12*	.05	.06	.16*	1.00	
47	.07	.13*	.10	.02	.08	.13*	.05	1.00
52	.13*	-.02	.12*	.02	-.16*	.12*	.12*	.11*
65	.03	.08	.04	.43*	-.04	.12*	.09	.07
76	.14*	.28*	.26*	.05	.06	.15*	.16*	.20*
97	.08	.11*	.09	-.07	-.03	.24*	.22*	.19*
103	.11*	.02	--	-.02	--	.05	.04	-.04
104	.28*	-.05	-.04	.04	.06	.05	-.01	.10
119	.02	.13*	.01	.10	.15*	.08	.05	.17*
121	.11*	.12*	.21*	.10	-.09	.09	.20*	.23*
156	.14*	.20*	.09	.03	.13*	.17*	.15*	.14*
157	.07	.11*	.09	.04	.06	.09	.20*	.16*
159	.02	.09	.03	-.05	.07	.02	.13*	.25*
168	.18*	.08	.07	.06	-.01	.11*	.12*	.25*
K	-.21*	-.23*	-.09	--	--	-.25*	-.30*	-.27*

	52	65	76	97	103	104	119	121
52	1.00							
65	.09	1.00						
76	.17*	.--	1.00					
97	.16*	.19*	.17*	1.00				
103	.14*	.01	.16*	-.02	1.00			
104	.05	.11*	.13*	.09	.12*	1.00		
119	.05	-.03	.12*	-.06	-.03	.02	1.00	
121	.23*	.12*	.18*	.23*	-.06	.11*	.04	1.00

	156	157	159	168	K
156	1.00				
157	.04	1.00			
159	.22*	.09	1.00		
168	.17*	.05	.22*	1.00	
K	-.24*	-.13*	-.12*	-.20	1.00

Table 15

Extracted Factor Matrix

	I	II	III	IV	V	VI	VII	VIII	IX	X
K	-.59	.11	.02	.03	.27	.04	-.04	-.10	.07	.06
24	.54	-.09	.07	-.13	.10	.17	.22	-.20	.07	.35
76	.52	.16	-.20	.09	.16	-.23	.07	-.02	.20	.05
22	.51	-.14	.05	-.13	-.06	-.24	-.29	-.05	-.20	.07
121	.49	-.34	.14	.07	.20	.09	.06	-.01	--	-.11
97	.49	-.23	--	.03	-.34	.17	.27	.17	-.13	-.10
35	.47	-.27	.02	.05	.39	.03	.23	-.12	.01	-.14
15	.46	.10	.04	-.34	.05	-.29	-.18	.05	-.07	.13
156	.46	--	-.25	-.30	.02	.20	-.15	.06	-.10	-.24
168	.46	.05	-.07	.17	-.17	.44	-.09	-.12	.24	.10
21	43	.19	.14	-.17	-.39	-.16	.25	.01	.14	.03
40	.41	.23	-.16	-.01	.10	.11	-.20	.29	-.12	-.32
52	.40	-.21	.07	.27	.23	-.23	-.10	-.02	-.04	-.02
41	.39	.13	-.31	-.14	.02	-.10	-.38	-.17	.28	-.15
8	.18	.51	.09	.02	.06	-.16	.48	-.18	.09	-.19
20	.04	.51	-.17	-.13	.27	.14	.26	.28	-.24	.04
119	.18	.36	-.09	-.34	.33	.07	.01	-.13	.09	.28
65	.24	.16	.70	.15	.07	.13	-.18	.10	.10	-.15
17	.16	.24	.69	-.02	.26	.11	-.25	.09	.11	.02
33	.31	.09	.11	-.48	-.36	-.04	--	-.05	.10	-.05
104	.23	.28	.01	.45	-.14	.40	.05	-.35	-.17	.02
103	.09	.23	-.11	.44	-.10	-.33	-.20	-.04	-.12	.41
159	.36	-.11	-.34	.09	.26	.40	-.11	.19	.14	.26
16	.34	-.24	--	.14	.34	-.38	.25	-.09	.10	-.10
37	.12	.29	-.12	.29	-.06	-.21	.02	.52	.18	-.05
32	.38	.22	-.13	.29	-.16	-.08	-.16	-.40	-.17	-.29
157	.33	-.01	.07	.02	.07	.02	.07	.18	-.60	.03
38	.32	-.14	--	.18	-.22	.02	.10	.30	.38	.07
47	.40	-.04	.19	.01	-.18	-.06	.02	.04	-.20	.41

--- denotes a factor loading of < .01.

Table 16

Rotated Factor Matrix[a]

	I	II	III	IV	V	VI	VII	VIII	IX	X
8	.19	.28	-.10	-.28	.06	.32	.52	-.14	.15	-.10
15	.16	.29	.43	-.03	.13	-.20	.18	.12	-.09	.28
16	**.71**	.05	.01	-.10	-.06	-.06	.02	-.03	.09	.05
17	.03	-.01	.02	.02	**.84**	-.05	.12	--	-.04	.04
20	-.13	-.09	--	.03	.03	-.01	**.68**	.28	.19	-.10
21	.05	**.71**	.06	-.04	.05	.08	.10	.01	.12	.07
22	.23	.21	.42	.01	.09	-.05	-.14	.24	-.15	.32
24	.34	.35	-.02	.42	.05	.06	.22	.06	-.29	.12
32	.12	.06	.35	-.15	-.04	**.66**	-.05	.06	.01	.14
33	-.12	**.60**	.29	-.03	.08	-.08	.01	-.02	-.14	-.09
35	**.67**	.01	.07	.18	.05	.06	.08	.09	-.10	-.16
37	--	.01	.03	.02	.04	-.01	.06	.01	**.78**	.15
38	.16	.34	-.05	.33	.02	-.05	-.18	-.06	.38	.02
40	.05	-.02	**.50**	.08	.11	.12	.13	.31	.31	-.15
41	.11	.09	**.67**	.12	-.05	.10	.02	-.27	.04	.07
47	.07	.35	-.05	.20	.13	-.01	-.01	.28	-.09	.39
52	**.52**	-.06	.13	.03	.11	.06	-.14	.14	.08	.23
65	.08	.20	-.01	-.01	**.80**	.13	-.08	.04	.09	-.04
76	.41	.17	.27	.14	-.05	.10	.25	-.11	.22	.21
97	.18	.47	--	.24	-.09	.13	-.19	.38	.11	-.17
103	-.03	-.07	-.02	-.01	-.07	.19	.01	--	.21	**.72**
104	-.05	-.01	-.10	.23	.09	**.75**	.06	.10	-.03	.08
119	.01	.05	.19	.15	.05	-.07	**.60**	-.08	-.21	.11
121	**.52**	.10	.10	.23	.16	.03	-.14	.19	-.06	-.11
156	.07	.14	**.55**	.20	-.07	.05	.08	.24	-.05	-.23
157	.13	.05	.05	-.02	.04	.06	.08	**.70**	-.02	.09
159	.14	-.15	.18	**.72**	-.07	-.04	.12	.08	.10	.02
168	.02	.22	.16	**.57**	.11	.37	-.05	-.08	.04	-.01
K	-.29	-.43	-.25	-.13	.12	-.15	.05	-.34	-.06	-.10

[a]Loadings ≥ .50 are in boldface.

Table 17

Communalities

Item	Communality
8	.64
15	.49
16	.54
17	.73
20	.61
21	.53
22	.49
24	.57
32	.63
33	.49
35	.54
37	.62
38	.46
40	.51
41	.57
47	.44
52	.40
65	.69
76	.47
97	.57
103	.61
104	.66
119	.51
121	.45
156	.49
157	.51
159	.62
168	.55
K	.46

Table 18

Summary Statistics

	Eigen-value	Percent Variance
I	4.23	14.6
II	1.57	5.4
III	1.52	5.2
IV	1.48	5.1
V	1.39	4.8
VI	1.30	4.5
VII	1.14	3.9
VIII	1.12	3.8
IX	1.07	3.7
X	1.04	3.6

Table 19

Significant Loadings on Each Factor[a]

Factor	Item	Loading	Item Text
I	16	.71	I am sure I get a raw deal from life. (T)
	35	.67	If people had not had it in for me, I would have been much more successful. (T)
	52	.52	I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first. (T)
	121	.52	I believe I am being plotted against. (T)
II	21	.71	At times I have very much wanted to leave home. (T)
	33	.60	I have had very peculiar and strange experiences. (T)
III	41	.67	I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going." (T)
	156	.55	I have had periods in which I have carried on activities without knowing later what I had been doing. (T)
	40	.50	Most any time I would rather sit and daydream rather than do anything else. (T)

Cont'd.

Table 19, Cont'd.

Factor	Item	Loading	Item Text
IV	159	.72	I cannot understand what I read as well as I used to. (T)
	168	.57	There is something wrong with my mind. (T)
V	17	.84	My father was a good man. (F)
	65	.80	I loved my father. (F)
VI	104	.75	I don't seem to care what happens to me. (T)
	32	.66	I find it hard to keep my mind on a task or a job. (T)
VII	20	.68	My sex life is satisfactory. (F)
	119	.60	My speech is the same as always (not faster or slower, or slurring; no hoarseness). (F)
	8	.52	My daily life is full of things that keep me interested. (F)
VIII	157	.70	I feel that I have often been punished without cause. (T)
IX	37	.78	I have never been in trouble for my sex behavior. (F)
X	103	.72	I have little or no trouble with my muscles twitching or jumping. (F)

[a]Loadings ≥ .50

and IX loaded significantly (≥ .30) on the C-M factors. Sample factor I is best represented by the C-M factor I (paranoia). Sample factor III came closest to C-M factor II (poor concentration). Sample factor IV was most like C-M factor X (psychotic tendencies). Sample factor V is best represented by C-M factor VII (father identification). Sample factor X is closest to the C-M factor III (poor physical health).

Comparison to Harris and Lingoes' content categories. Table 21, p. 73 shows the items with significant loadings (≥ .50) on each of the sample factors and shows where the same items appear on the Harris and Lingoes (H-L) content categories. For descriptions of H-L content categories see p. 24 and for text of the significant items on each Factor see pp. 69-70. All of the items (16, 35, 52, and 21) that loaded significantly on Factor I were included in the H-L content category 1A, called social alienation. Two items (21 and 35) on Factor II had significant loadings. Item 21 was on H-L content category Sc2A, lack of ego mastery-mastery-cognitive and also on content category Sc3, bizarre experiences. Three items (40, 41, and 156) loaded significantly on Factor III. Two of these items (40 and 41) were found on the content category Sc2B, lack of ego mastery-conative. Item 156 appeared on the content category Sc3, bizarre sensory experiences. Both of the items that had significant loadings on Factor IV, items 159 and 168, were located on content category Sc2A, lack of ego mastery-cognitive. Factor V had two items (17 and 65) with

Table 20

Comrey and Marggraff Loadings for the Significant Items on the Sample Factors

			Comrey and Marggriff Factors										
		Items	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	I	16												
S		35												
a		52	.30											
m		121	.53											
p	II	21												
l		31												
e	III	40		.34				.31						
		41		.38										
		156			.30							.33		
F	IV	159												
a		168										.33		
c	V	17							.38					
t		65							.39				.30	-.32
o	VI	32												
r		104												
s	VII	20												
		119												
	VIII	157												
	IX	37												
	X	103			.55									

Table 21

Items on Each of the Sample Factors Shared With the Harris and Lingoes Content Categories

		Item	1A	1B	2A	2B	2C	3
	I	16	*					
		35	*					
		52	*					
S		121	*					
c	II	21	*					
a		33			*			*
l	III	40					*	
e		41					*	
		156						*
8	IV	159			*			
		168			*			
F	V	17						
a		65	*					
c	VI	32			*	*		
t		104				*		
o	VII	20						
r		119						*
s	VIII	157	*					
	IX	37						
	X	103						*

significant loadings. Only one item (65) was found on content category 1A, social alienation. Both of the significant items loading on Factor VI (32 and 104) were on content category Sc2B, lack of ego mastery-conative. Item 32 was also on content category 2A, lack of ego mastery-cognitive. Only one of the two significant items (20 and 119) on Factor VII was found and this was item 119 which was on content category Sc3, bizarre sensory experiences. For item 157, the only significant loading on Factor VIII was on content category 1A, social alienation. The only item loading significantly on Factor IX, item 37 was not found in any of the content categories. The sole item on Factor X,

item 103, was located in content category Sc3, bizarre sensory experiences. None of the items matched with the H-L content category 1B, Emotional Alienation.

Validation of Scale-8

Sample description for the delinquency dimension. For the delinquency dimension sample (n=80), the racial composition was 67 or 83.8% black and 13 or 16.2% white. Seventy or 87.5% were males and 10 or 12.5% females. The minimum reading grade level was 1.40, the maximum was 7.70, the median was 4.15, the mean was 4.85 and the standard deviation was 2.14. Because of a ceiling on the reading test of 7.7, it resulted in a negatively skewed distribution. In this case, the median would be the best estimate of central tendency. The standard K-corrected T-scores had a minimum of 40, a maximum of 119, a median of 73, a mean of 74.04 and a standard deviation of 16.57. The T-scores based on adolescent norms had a minimum of 36, a maximum of 82, a median of 54, a mean of 55.14 and a standard deviation of 10.87. The Full-Scale IQ's had a minimum of 54, a maximum of 114, a median of 82.50, a mean of 82.80 and a standard deviation of 11.28. The descriptive statistics for the individual cells of the factorial are shown in appendix C, p. 111.

Results for the delinquency dimension. The results of the factorial analysis of variance for the delinquency dimension, using the standard K-corrected T-scores, are reported in Table 22, p. 75. The cell means are shown in

Figure 2, below. The *F* for delinquency was 0.13, *p* > .05. This did not support Hypothesis 1 under Set IV, which

Table 22

Analysis of Variance

Scale-8 Standard K-corrected T-scores

by Reading and Delinquency

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
Delinquency	32.51	1	32.51	0.13	>.05
Reading	2279.11	1	2279.11	9.04	<.05
Interaction					
Read. X Delq.	227.81	1	227.81	0.90	>.05
Error					
Within Groups	19159.45	76	252.10		
Total	21698.88	79	274.67		

Figure 2

Standard K-corrected T-scores

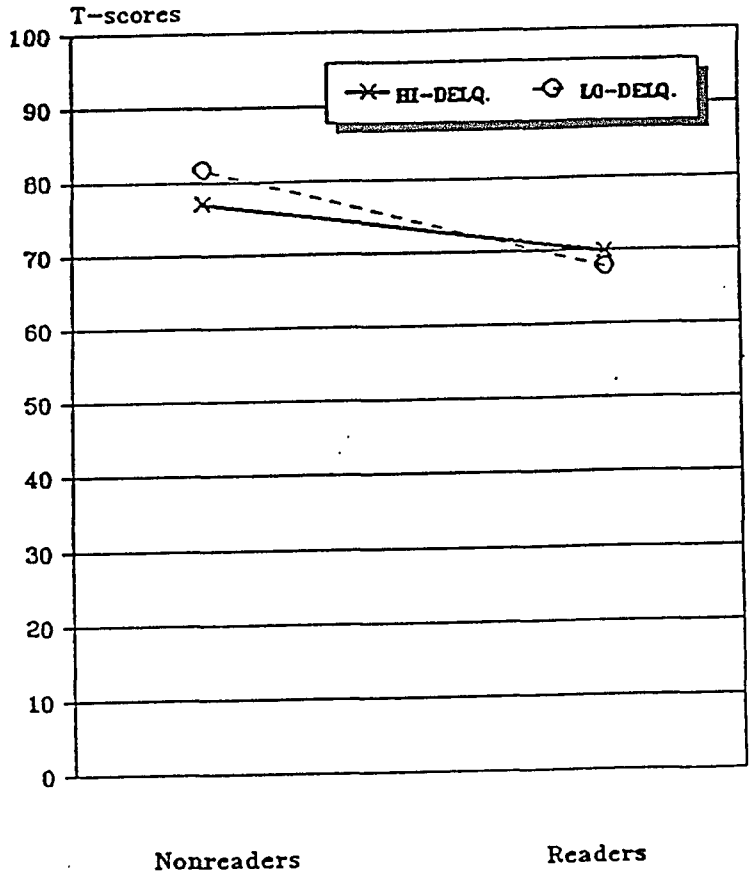
Delinquency

	Low	High
Nonreaders	81.70 (n=20)	77.05 (n=20)
Readers	67.65 (n=20)	69.75 (n=20)

predicted that those classified as more delinquent would score significantly higher on Scale-8 than those classified as less delinquent when the standard K-corrected T-scores are used. The F for the main effect of reading was 9.04, $p < .05$ with an estimated ω^2 of .09. The t for the difference between readers and nonreaders for low-delinquency was 2.65, $p < .05$ with an estimated ω^2 of .14. The t for the difference between readers and nonreaders for high-delinquency was 1.55, $p > .05$. Hypothesis 1 under Set VI, which predicted that there would be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of delinquency when the standard K-corrected T-scores are used, was supported for those classified high on the delinquency dimension, but was not supported for those classified as low on delinquency. There was no significant interaction between reading and delinquency. Figure 3, p.77, is a graphic representation of these results.

The results of the factorial analysis of variance for the delinquency dimension, using the T-scores based on adolescent norms, are reported in Table 23, p. 78. Figure 4, p. 78 contains the cell means. Figure 5, p. 79, is a graphic representation of these results. The F for the main effect of delinquency was 0.37, $p > .05$. This supported Hypothesis 1 under Set V, which predicted that those classified as more delinquent would not score significantly higher on Scale-8 than those classified as

Figure 3
Scale-8 and Delinquency
Standard K-corrected T-scores



less delinquent when the T-scores based on adolescent norms are used. The F for the main effect of reading was 6.97, $p < .05$ with an estimated ω^2 of .07. The t between readers and nonreaders for low-delinquency was 2.78, $p < .05$ with an estimated ω^2 of .14. The t between readers and nonreaders for high-delinquency was 0.89, $p > 05$. Hypothesis 1 under

Table 23

Analysis of Variance

T-scores Based on Adolescent Norms

by Reading and Delinquency

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
Delinquency	40.61	1	40.61	0.37	>.05
Reading	762.61	1	762.61	6.97	<.05
Interaction					
Read. X Delq.	221.11	1	221.11	2.02	>.05
Error					
Within Groups	8313.15	76	109.38		
Total	9337.48	79	118.20		

Figure 4

T-scores Based on Adolescent Norms

Delinquency

	Low	High
Nonreaders	60.60 (n=20)	55.85 (n=20)
Readers	51.10 (n=20)	53.00 (n=20)

Set VII, which predicted that there will be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of delinquency when the T-scores

based on adolescent norms are used, was supported for those scoring low on delinquency, but was not supported for those scoring high on delinquency. There was no significant interaction between reading and delinquency. Figure 5, below is a graphic representation of these results.

Figure 5
Scale-8 and Delinquency
Adolescent T-Scores

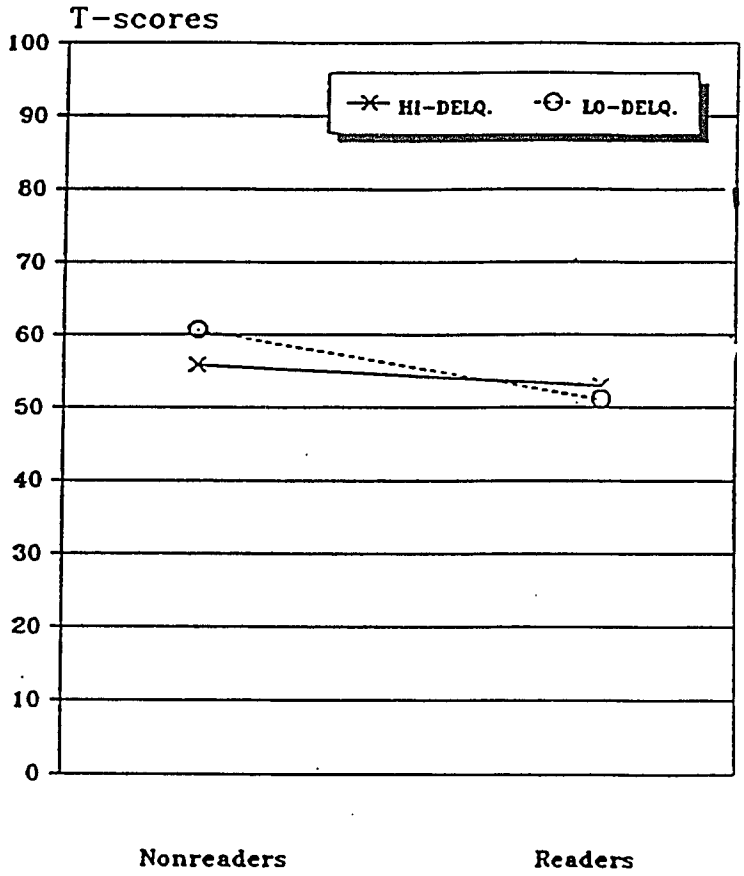
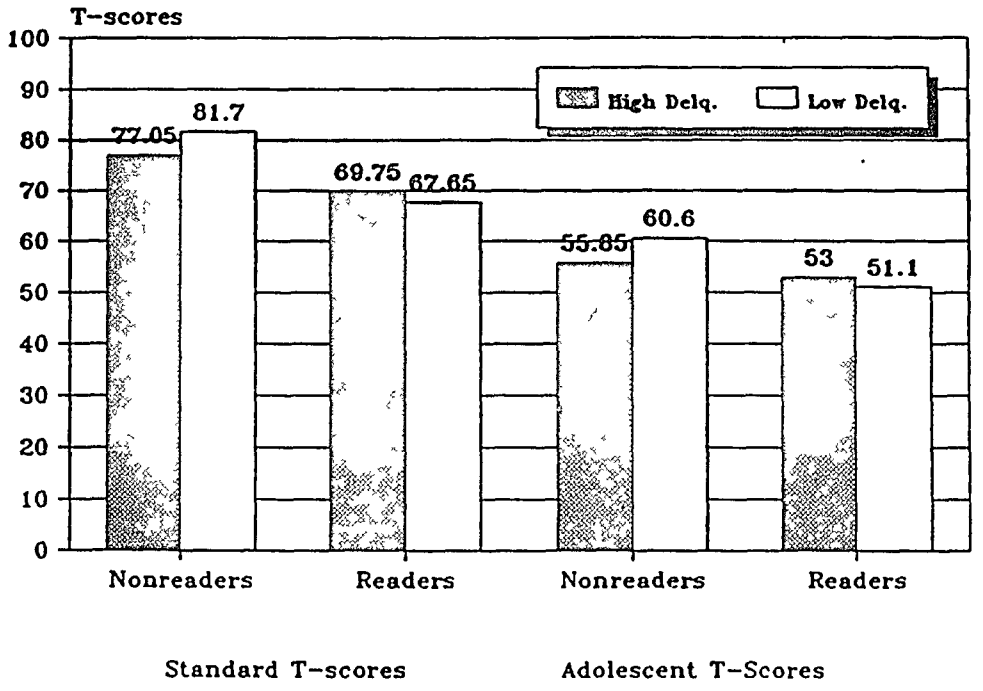


Figure 6, below, summarizes the results for the delinquency dimension.

Figure 6
Scale-8 By Delinquency and Reading



Sample description for the emotional disturbance (ED) dimension. For the ED dimension (n=80), the racial composition was 59 or 73.8% black and 21 or 26.2% white. For gender, 67 or 83.8% were male and 13 or 16.2% were female. For age, three or 3.8% were 12, six or 7.5% were 13, 16 or 20% were 14, 24 or 30% were 15, 24 or 30% were 16,

and seven or 8.7% were 17. The Full-Scale IQs had a minimum of 61, a maximum of 115, a median of 87.50, a mean of 86.68 and a standard deviation of 9.45. The minimum reading grade level was 1.70, the maximum was 7.70, the median was 4.15, the mean was 4.82 and the standard deviation was 2.02. The standard K-corrected T-scores had a minimum of 40, a maximum of 126, a median of 79.00, a mean of 78.06 and a standard deviation of 18.81. The T-Scores based on adolescent norms had a minimum of 36, a maximum of 88, a median of 60.00, a mean of 59.14 and a standard deviation of 11.84. The descriptive statistics for the individual cells are shown in Appendix D, p. 113.

Results for the ED dimension. The results of the factorial analysis of variance using the standard K-corrected T-scores are reported in Table 24, p. 82 and the cell means are shown in Figure 7, p. 82. The F for the main effect of ED was 8.61, $p < .05$ with an estimated ω^2 of .09. The t for the difference between not-ED and ED for nonreaders was -2.23, $p < .05$ with an estimated ω^2 of .07. The t for the difference between not-ED and ED for readers was -2.00, $p < .05$ with an estimated ω^2 of .14. These results supported Hypothesis 2 under Set IV, which predicted that those classified as ED will score significantly higher than those classified as not-ED when the standard K-corrected T-scores are used. The F for the main effect of reading was 0.64, $p > .05$. This supported Hypothesis 2 under Set VI which predicted that there will be no

Table 24

Analysis of Variance

Scale-8 Standard K-corrected T-scores

by Reading and Emotional Disturbance

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
ED	2820.31	1	2820.31	8.61	<.05
Reading	208.01	1	208.01	0.64	>.05
Interaction					
Read. X ED	21.01	1	21.01	0.06	>.05
Error					
Within Groups	24891.35	76	327.52		
Total	27940.68	79	353.68		

Figure 7

Standard K-corrected T-scores

Emotional Disturbance

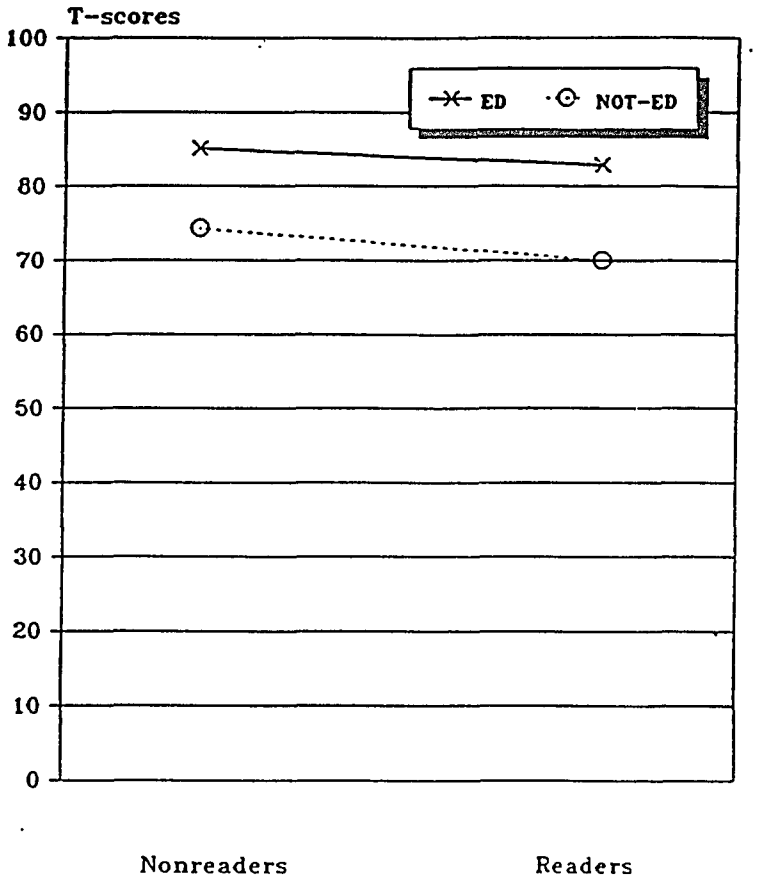
	No	Yes
Nonreaders	74.25 (n=20)	85.10 (n=20)
Readers	70.00 (n=20)	82.90 (n=20)

significant difference between the Scale-8 scores of readers and nonreaders on the dimension of emotional disturbance when the standard K-corrected T-scores are used. There was no significant interaction between reading and ED. Figure

8, below is a graphic representation of these results.

The results of the factorial analysis of variance for the T-scores based on adolescent norms are displayed in Table 25, p.84. Figure 9, p. 84 contains the cell means.

Figure 8
Scale-8 and Emotional Disturbance
Standard K-corrected T-scores



The *F* for the main effect of ED was 17.30, *p* < .05 with an estimated ω^2 of .17. The *t* for the difference between not-ED and ED for nonreaders was -2.59, p. < .05 with an

Table 25

T-scores Based on Adolescent Norms

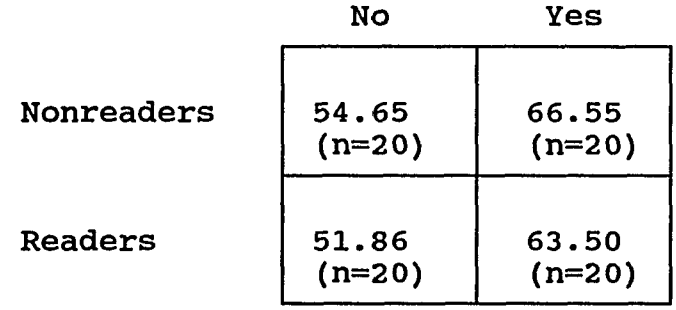
by Reading and Emotional Disturbance

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
ED	2773.01	1	2773.01	17.30	<.05
Reading	171.13	1	171.13	1.07	>.05
Interaction					
Read. X ED	0.31	1	0.31	0.002	>.05
Error					
Within Groups	12183.05	76	160.30		
Total	15127.50	79	191.49		

Figure 9

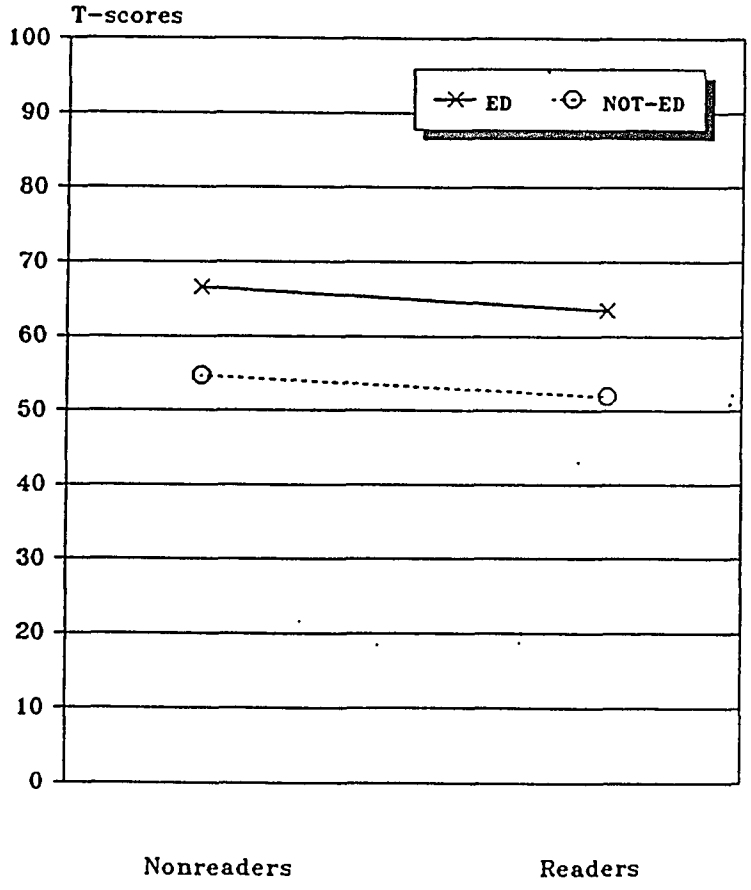
T-scores Based on Adolescent Norms

Emotional Disturbance



estimated ω^2 of .12. The t for the difference between not-ED and ED for readers was -3.46, $p < .05$ with an estimated ω^2 of .22. These results did not support Hypothesis 2 under Set V, which predicted that those classified as ED will not score significantly higher on Scale-8 than those classified as not-ED when the T-scores based on adolescent norms are used. Figure 10, below is a graphic representation of these results.

Figure 10
Scale-8 and Emotional Disturbance
Adolescent T-scores

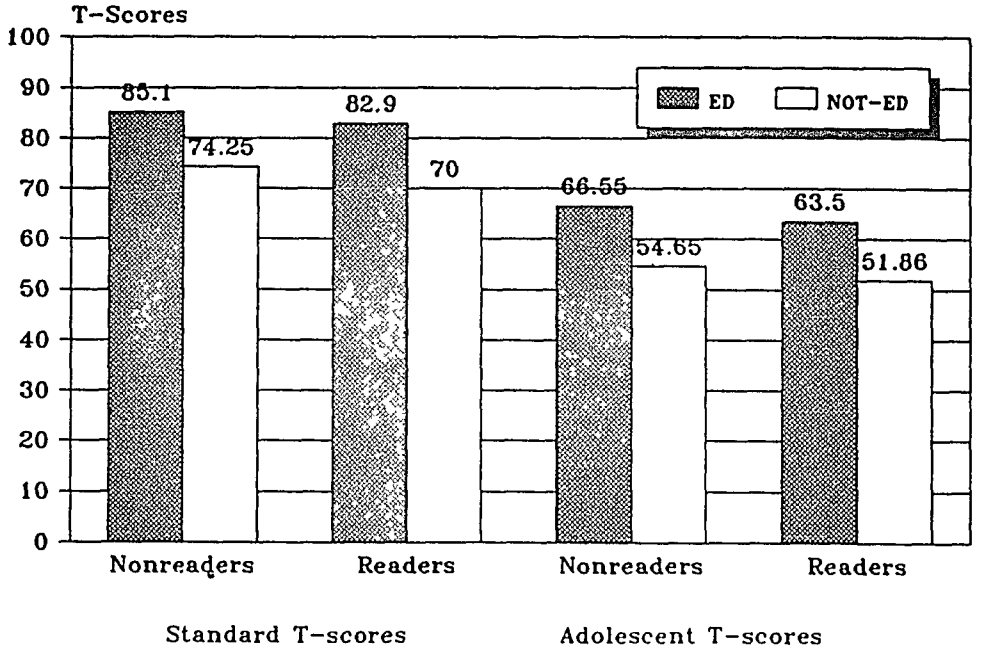


The F for the main effect of reading was 0.64, $p > .05$. This result supported Hypothesis 2 under Set VII, which

predicted that there would be no significant difference between the Scale-8 scores of readers and nonreaders on the ED dimension when the T-scores based on adolescent norms were used. There was no significant interaction between the factors of Reading and ED.

Figure 11, below summarizes the results for the ED dimension.

Figure 11
Scale-8 by ED and Reading



Sample description for the assaultiveness (ASA) dimension. For the assaultiveness dimension (n=80), the racial compositon for this sample was 72 or 90% black, and eight or 10% white. For gender, 73 or 91.2% were male and seven or 8.8% were female. The age distribution was eight or 10% 13, 11 or 13.8% 14, 22 or 27.5% 15, 31 or 38.7% 16

and eight or 10% 17. The Full-Scale IQs had a minimum of 54, a maximum of 122, a median of 84.00, a mean of 83.48 and a standard deviation of 12.92. The minimum reading grade level was 1.40, the maximum was 7.70, the median was 4.15, the mean was 4.65 and the standard deviation was 2.11. The standard K-corrected T-scores had a minimum of 42, a maximum of 121, a median of 78.00, a mean of 77.36 and a standard deviation of 15.26. The T-scores based on adolescent norms had a minimum of 36, a maximum of 84, a median of 56.00, a mean of 57.36 and a standard deviation of 10.25. The descriptive statistics for the individual cells are shown in Appendix E, p. 115.

Results for the ASA dimension. The results of the factorial analysis of variance using the standard K-corrected T-scores are reported in Table 26, p. 88 and the cell means are shown in Figure 12, p. 88. The F for the main effect of assaultiveness was 0.69, $p > .05$. The F for the main effect of reading was 3.24, $p > .05$. The F for the Reading by Assaultiveness interaction was 4.95, $p < .05$ with an estimated ω^2 .05. Since the interaction effect obscured the main effects, t tests were performed on both levels of each factor to determine if there were any significant effects. The t for nonreaders over the two levels of assaultiveness was -2.26, $p < .05$ with an estimated ω^2 .09. The t for readers over both levels of assaultiveness was 0.95, $p > .05$. The t for non-assaultive subjects over both levels of reading was 0.33, $p > .05$. The t for assaultive

Table 26

Analysis of Variance

Scale-8 Standard K-corrected T-scores

by Reading and Assaultiveness

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
ASA	148.51	1	148.51	0.69	>.05
Reading	702.11	1	702.11	3.24	>.05
Interaction					
Read. X ASA	1073.11	1	1073.11	4.95	<.05
Error					
Within Groups	16464.75	76	216.64		
Total	18388.48	79	232.77		

Figure 12

Standard K-corrected T-scores

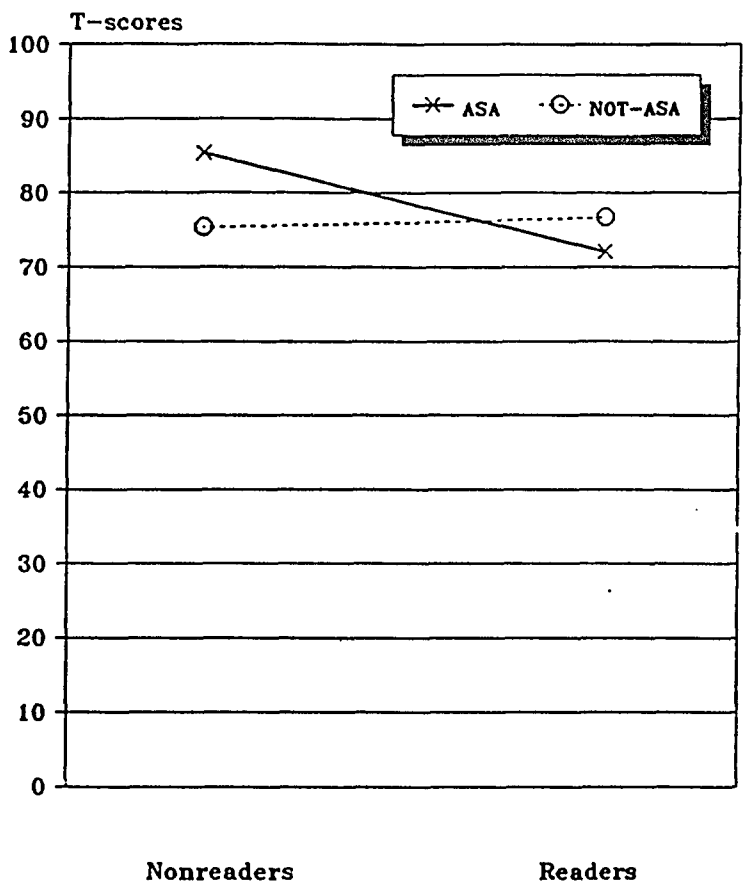
Assaultiveness

	No	Yes
Nonreaders	75.30 (n=20)	85.35 (n=20)
Readers	76.70 (n=20)	72.10 (n=20)

subjects over both levels of reading was 2.66, $p < .05$ with an estimated ω^2 of .13. These results gave partial support to Hypothesis 3 under Set IV which predicted that those classified as assaultive would score significantly higher on

Scale-8 than those classified as non-assaultive when the standard K-corrected T-scores were used. This hypothesis was supported for nonreaders but not supported for readers. Also, Hypothesis 3 under Set VI, which predicted that there would be no significant difference between the Scale-8 scores of readers and non readers on the dimension of assaultiveness when the standard K-corrected T-scores were used, was partially supported. This hypothesis was supported for readers, but not supported for nonreaders. Figure 13, p. below is a graphic representation of the results.

Figure 13
Scale-8 and Assaultiveness
Standard K-corrected T-scores



The results of the factorial analysis of variance using the T-scores based on adolescent norms are reported in Table 27 and Figure 14, below. The F for the main effect

Table 27

T-scores Based on Adolescent Norms

by Reading and Assaultiveness

Source	Sum of Squares	df	Mean Square	F	Prob.
Main Effects					
ASA	0.01	1	0.01	< 0.01	>.05
Reading	365.51	1	365.51	1.79	>.05
Interaction					
Read. X ASA	214.51	1	214.51	2.11	>.05
Error					
Within Groups	7726.45	76	101.66		
Total	8306.48	79	105.15		

Figure 14

T-scores Based on Adolescent Norms

Assaultiveness

	No	Yes
Nonreaders	57.85 (n=20)	61.15 (n=20)
Readers	56.85 (n=20)	53.60 (n=20)

for assaultiveness was < 0.01, p > .05. Hypothesis 3 under Set V, which predicted that those classified as assaultive

would not score higher on Scale-8 than those classified as non-assaultive when the T-scores based on adolescent norms were used, was supported. The F for the main effect of reading was 1.79, p > .05. Hypothesis 3 under Set VII, which stated that there would be no significant difference between the Scale-8 scores of readers and nonreaders on the dimension of assaultiveness when the T-scores based on adolescent norms were used, was supported. There was no significant interaction. Figure 15, below is a graphic representation of these results.

Figure 15
Scale-8 and Assaultiveness
Adolescent T-scores

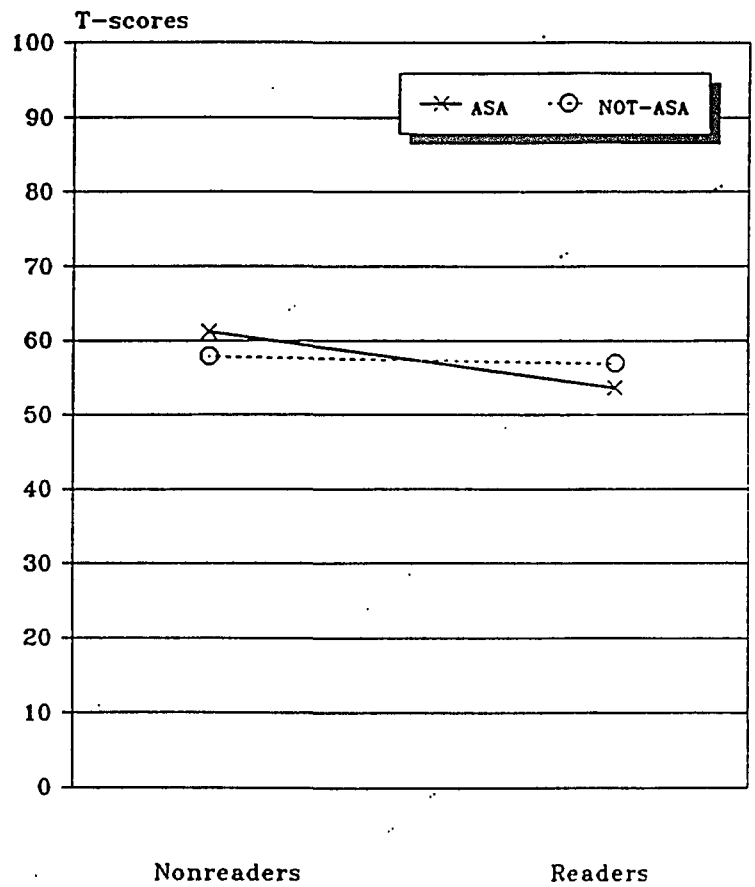
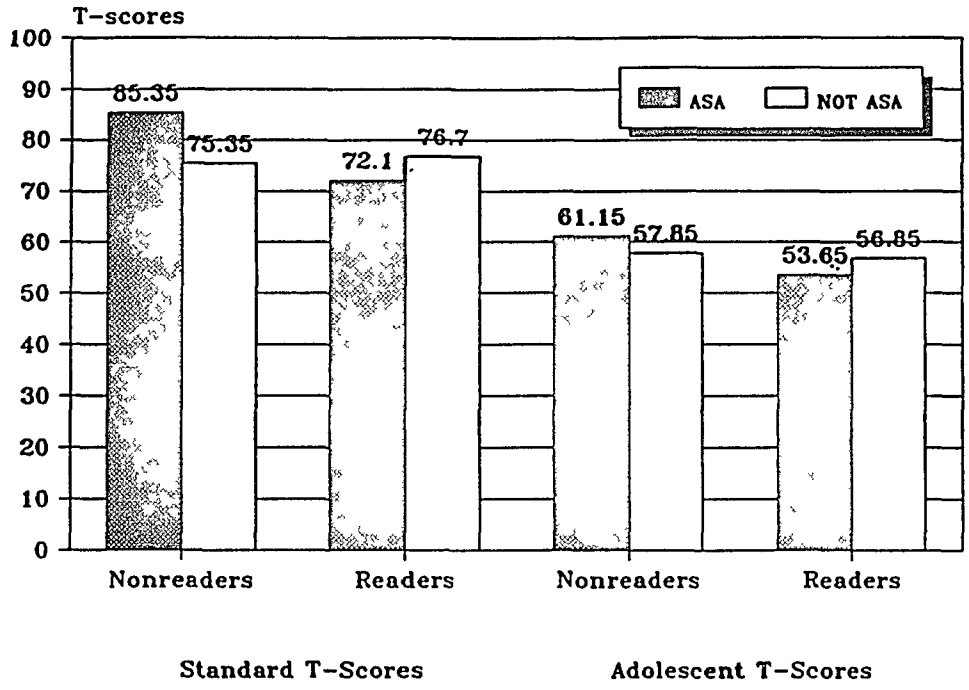


Figure 16, below summarizes the results for the ASA dimension.

Figure 16
Scale-8 By Assaultiveness and Reading



Chapter V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this research was to examine Scale-8 of the MMPI-168 using item-analysis techniques and factor analysis to determine the influence of background variables on the scale and to gather information in regard to what this scale was measuring in a population of juvenile delinquents. Further, it was intended to determine whether Scale-8 was useful in discriminating more delinquent youths from less delinquent youths, emotionally disturbed delinquents from not emotionally disturbed delinquents and assaultive from non-assaultive delinquents. It also investigated the influence of reading-grade-level on Scale-8 elevation and compared the standard K-corrected T-scores to the adolescent T-scores.

Item Analysis

Significance tests were conducted for the Scale-8 raw scores for each level of each of the background variables to determine whether there were any significant differences. The purpose of this was to determine if factors extraneous to the specified criteria might have contributed to significantly higher or lower scores on Scale-8. The only variable that showed a significant difference was reading. Nonreaders scored significantly higher on Scale-8 than readers. This difference was expected, however the

magnitude of the difference of a little over one point was much smaller than what has been observed in the past with this population.

The crosstabulation of each of the levels of each of the background variables with item endorsement revealed several items which showed significant differences in the number of subjects of one level who endorsed the item when compared to subjects of a different level who did not endorse the item. However, the magnitude of these differences were small and did not result in significant differences in overall scale elevation between the levels of any of the variables except the variable of reading. Some of these differences were expected: For example more nonreaders reported that they "cannot read as well as they used to" when compared to readers, or those with family incomes greater than $30,000 were less likely to endorse the item, "Most of the time I feel blue" than those with incomes of less than $20,000. Other differences in responding may be of clinical interest or concern: For example, why are black youngsters in this population more likely than white youngsters, to endorse the following items, "Most of the time I feel blue.", "I feel that I have often been punished without cause" and "If people had not had it in for me I would have been much more successful?" or why are 15-year-olds more likely to answer false to the item, "I loved my father?"

All of the items on Scale-8 demonstrated significant discrimination between high and low scorers in this sample

and among these items were nine that high-scorers endorsed at a siginficantly greater frequency ($\phi \geq .50$). The content of these items may be useful in providing some insight into the feelings and attitudes of high versus low scorers.

Internal Reliability

The Kuder-Richardson coefficient of .73 is low for an estimate of internal reliability. Considering that this is a multidimensional scale, a test-retest approach to estimating reliability would have been more appropriate.

Factor Analysis

A factor analytic method was chosen to provide information as to the underlying factors on this 28 item scale. It was the aim of the researcher to use this technique to group these items into a few meaningful and interpretable factors that would yield information on what this scale is measuring and then relate this to the dimensions of delinquency, emotional disturbance and assaultiveness. However, the low magnitude of the correlations between the items suggest that the results of this factor analysis be interpreted with caution. The problem with using a correlation matrix of very low magnitude is that the items are loosely held together and the factors derived are unstable. Consequently, this analysis should be interpreted with caution. Despite the low inter-item correlations, the analysis accounted for 54.7% of the variance and the communalities, though low, are

substantial and show considerable common variance. The reason for this low inter-item correlation and the presence of considerable underlying common variance appears to be in the way that Scale-8 and other MMPI scales were constructed. Content validity and inter-item correlation were not important to those who constructed the MMPI. Items were retained on this scale because of their ability to discriminate between individuals within the criterion group (diagnosed schizophrenics) and "normals", as well as other diagnostic groups. The MMPI was constructed as a criterion test and in constructing criterion tests, items do not have to correlate highly with each other. Further, if a number of uncorrelated variables correlate highly with a criterion, the multiple correlation coefficient is higher. When items have low correlation with one another and each correlate positively with the criterion, each item adds new information. The ideal situation is to have items that are uncorrelated with each other, but with each having predictive power in identifying the criterion.

Another problem with interpreting this factor analysis is that three of the factors (VIII, IX and X) have only one significant (loading $\geq$ .50) item on them and another five factors (II, IV, V, VI, and VII) have only two significant items. Keeping in mind the shortcomings of this analysis, the researcher proceeded with the interpretation of the factors with three or more variables that have loadings $\geq$ .50 and their relation to the dimensions of delinquency, emotional disturbance and assaultiveness. These were

factors I and III. The significant items on the first factor suggest a theme of victimization and alienation from others. Factor III suggests feelings of being overwhelmed, unable to cope and also suggests a lack of involvement and energy. The most significant theme, in that it accounts for the greatest amount of variance and has more variables loading significantly on it, is Factor I with a theme of victimization and alienation from others. This type of alienation and dissatisfaction is often associated with individuals within a delinquent or criminal population, as well as with individuals who are disturbed or depressed.

Comparison of sample analysis with prior analyses. By comparing the item groupings from the sample factor analysis to Comrey and Margraff's factor analysis of Scale-8 and Harris and Lingoes' content groupings, the researcher intended to compare the current research with what had been done previously. However, the prior research had little in common with this factor analysis. First of all, the Comrey and Marggraff analysis did not share all of the same items and secondly they also had the problem of a correlation matrix which had low inter-item correlations. The Harris and Lingoes approach was one of grouping items by their content without any statistical method. Despite the differences, all three approaches overlap with a factor dealing with social alienation, Factor I or "paranoia" for Comrey and Margraff, content category 1A or "social alienation" for Harris and Lingoes and in this study, Factor I which has themes of social alienation and victimization.

The presence of this consistency lends support to the interpretion of Factor I as social alienation which is defined as "feeling mistreated and misunderstood by others and lacking rapport with others."

Validation

Scale-8 by delinquency and reading level. It was the researcher's intention to demonstrate that those classified as more delinquent would score higher on Scale-8 when the standard K-corrected T-scores were used. However, the results failed to support this. Those classified as more delinquent did not score significantly higher on Scale-8 than those classified as less delinquent. Scale-8 did not discriminate between delinquents who have fewer offenses and have not been on probation from those who have more offenses and are currently on probation or have been on probation in the past. However, since both high and low delinquents had average scores which were above the criterion cut-off of $T \geq 70$, it could be that though Scale-8 does not discriminate between high and low delinquents, it may be useful in discriminating delinquents from nondelinquents.

Because prior research indicated that non-readers score significantly higher on Scale-8 than readers, an attempt was made to demonstrate that non-readers score higher because they were more delinquent, emotionally disturbed and/or assaultive and not because they may not have understood the items. This was done by crossing reading with each dimension. In this way, by controlling for the level of

delinquency, the Scale-8 scores of readers and nonreaders should not vary significantly over the same level of delinquency, if Scale-8 is measuring delinquency, and likewise for emotional disturbance and assaultiveness. If Scale-8 is measuring delinquency, high-delinquent readers would be expected to score the same as high-delinquent nonreaders. These same results were not predicted for the adolescent norms. It was felt that they would submerge the scores to such an extent that any difference would be obscured. The results showed that nonreaders scored significantly higher than readers. However this effect was significant only for those scoring low on the delinquency dimension. Scale-8 did not discriminate between high and low delinquents. However the higher Scale-8 scores for nonreaders, who scored low on the delinquency dimension, may not be an artifact of reading level but could be due to other factors. Two of these possible factors are emotional disturbance and assaultiveness which will be dealt with in the following paragraphs.

Though the adolescent norms did submerge the profiles, the results paralleled the standard K-corrected T-scores. There was no significant difference between the Scale-8 scores of those scoring low on the delinquency dimension and those scoring high on this dimension. However, there was a significant difference between the Scale-8 scores of readers and nonreaders with nonreaders scoring significantly higher. Again, this effect was significant only for those scoring low on the delinquency dimension.

Scale-8 by emotional disturbance and reading level. The researcher predicted that emotionally disturbed delinquents, those who had been in an inpatient psychiatric setting within the past five years would score higher on Scale-8 than delinquents who were not emotionally disturbed, those who have never been in a psychiatric hospital or have never been involved in any type of therapy or counseling.

The results showed that those classified as emotionally disturbed scored significantly higher on Scale-8 than those classified as not emotionally disturbed. This was true for both the standard K-corrected T-scores and the T-scores based on adolescent norms. This difference was predicted for the former but not the latter. It was felt that the adolescent norms would submerge the profile and these differences would be obscured. The adolescent norms did submerge the profile, but the difference between the emotionally disturbed group and the not emotionally disturbed group was significant and actually accounted for almost twice the variance when compared to the standard K-corrected T-scores. It appears that the adolescent norms may more efficient in measuring this effect.

The results also showed that when the emotionally disturbed factor was controlled, the differences between readers and nonreaders disappeared, indicating that nonreaders are probably scoring higher on Scale-8 because they are more disturbed than readers.

This research demonstrated that Scale-8 has potential to be used as a means of discriminating between delinquents

who are emotionally disturbed and need further evaluation from those who are not disturbed. This would be useful in a juvenile court setting in regard to making placement decisions in that a disturbed youngster would be considered for psychiatric placement or one with psychiatric consultation.

It is important to note that while these results were significant, the magnitude of these effects even for the adolescent norms accounted for only 17% of the variance in Scale-8 scores. The validity coefficient is .41. Considering that this is an multidimensional scale, a more appropriate measure of validity would be would be to identify the items in the subscale related to emotional disturbance and correlate this subscale to the criterion of emotional disturbance.

Scale-8 by assaultiveness and reading level. The researcher predicted that assaultive delinquents, those who had been convicted on at least one assaultive offense (murder, rape, assault, or robbery), would score higher on Scale-8 than non-assaultive delinquents, those who have niether been convicted nor ever charged with an assaultive offense.

The results, using the standard K-corrected T-scores, showed that there was no significant difference between readers who were assaultive and those who were not assaultive. However, there was a significant difference between the Scale-8 scores of assaultive and non-assaultive nonreaders. Subjects classified as assaultive who can read

scored significantly lower on Scale-8 than assaultive subjects who cannot read. For non-assaultive delinquents, there was no significant difference between readers and nonreaders. If Scale-8 were measuring assaultiveness, than both readers and nonreaders who are assaultive should score significantly higher on this scale. This was not the case and demonstrated that Scale-8 does not discriminate between delinquents who are assaultive, as defined by the researcher and those who are not assaultive, as defined by the researcher. Since Scale-8 does not measure assaultiveness and it has been shown that emotionally disturbed delinquents score significantly higher on Scale-8, it may be that assaultive nonreaders score higher because they are more emotionally disturbed than assaultive readers.

The results for the adolescent norms paralleled the results for the standard K-corrected T-scores, but the differences were not significant.

Adolescent norms vs. standard K-corrected T-scores. This research supported the use of the adolescent norms, as well as the standard K-corrected T-scores in this population, when it comes to using Scale-8 to discriminate emotionally disturbed delinquents from those who are not emotionally disturbed. However, it demonstrated that the cut-off for discrimination may be even lower than the recommended T-score of 65 (probably closer to 60) when the adolescent norms are used. On the other hand, the results for the standard K-corrected T-scores showed that a cut-off closer to a T-score of 80 rather than the traditional cut-

off of a T-score of 70 would be more appropriate. This research does not favor the use of one scaling method over the other, but does point to the need for population specific research on the appropriate cut-off score.

Recommendations

This research has shown that a factor analytic approach was not useful in investigating Scale-8 of the MMPI-168. A more useful approach to the understanding of what this scale is measuring would be to focus on the personality features of those scoring high on the scale in contrast to those scoring low on the scale. In analyzing Scale-8 on the MMPI-168 one should use approaches which have to do with the correlation of items and/or scales to external criteria rather than with approaches that are based on item intercorrelation.

In regard to further analysis of Scale-8 one should rely on a decision theory approach where one can use 2 X 2 tables in which the percentage of hits and misses is crossed with criterion versus no-criterion.

The next step to follow up on this research is to set cut-offs for the emotionally disturbed dimension on Scale-8 for both the standard K-corrected T-scores and the T-scores based on adolescent norms. A desireable cut-off would be where there are the fewest number of false positives and false negatives. This should be followed with a cross-validation where one can determine the utility of this scale in regard to the percentage of hits beyond that which would

be expected by chance. Cohen's kappa (Cohen, 1960), see below, in which P_o is the observed probability and P_c is the probability expected by chance, can then be employed to determine this.

$$k = \frac{P_o - P_c}{1 - P_c}$$

Because this research has shown that among delinquents, there may a connection between reading and emotional disturbance, such that nonreaders may be more emotionally disturbed than readers additional research is needed to confirm this. Also, further research is needed to determine whether this also may be true for nonreaders who scored low on the delinquency dimension and non-readers who scored high on the assaultiveness dimension.

Appendix C

Cell Descriptives for Delinquency Dimension

	Low-Delinquency		High-Delinquency	
	Non-Readers	Readers	Non-Readers	Readers
Race				
Black	19 (95%)	13 (65%)	19 (95%)	16 (80%)
White	1 (5%)	7 (35%)	1 (5%)	4 (20%)
Gender				
Male	19 (95%)	17 (85%)	18 (95%)	16 (80%)
Female	1 (5%)	3 (15%)	2 (10%)	4 (20%)
Offenses				
Murder	0 ---	0 ---	0 ---	0 ---
Assault	5 (25%)	5 (25%)	11 (55%)	4 (20%)
Robbery of person	1 (5%)	1 (5%)	1 (5%)	2 (10%)
Car Theft	3 (15%)	4 (20%)	5 (25%)	9 (45%)
Property Offenses	1 (05%)	---	1 (5%)	4 (20%)
Drugs	8 (40%)	4 (20%)	1 (5%)	1 (5%)
Status	0 ---	4 (20%)	1 (5%)	0 ---
Firearms	2 (10%)	2 (10%)	0 ---	0 ---
Other	0 ---	0 ---	0 ---	0 ---

Cont'd.

Appendix C, Cont'd.

	Low-Delinquency		High-Delinquency	
	Non-Readers	Readers	Non-Readers	Readers
FSIQ				
Min.	54.00	74.00	62.00	74.00
Max.	92.00	114.00	99.00	106.00
Med.	75.00	89.50	77.50	85.50
Mean	75.40	90.45	78.65	86.70
SD	8.96	11.76	9.63	8.01
Reading				
Min.	1.40	4.70	1.80	4.70
Max.	3.60	7.70	3.60	7.70
Med.	3.30	7.70	3.00	6.85
Mean	2.94	6.96	2.92	6.59
SD	0.73	0.98	0.68	1.23
Standard K-corrected T-Scores				
Min.	48.00	40.00	51.00	42.00
Max.	111.00	111.00	101.00	119.00
Med.	83.00	64.00	75.00	65.50
Mean	81.70	67.65	77.05	69.75
SD	15.60	17.88	13.93	15.86
Adolescent T-Scores				
Min.	38.00	36.00	40.00	38.00
Max.	77.00	75.00	70.00	82.00
Med.	59.50	50.00	54.00	51.00
Mean	60.60	51.10	55.85	53.00
SD	10.45	11.14	8.48	11.51

Appendix D

Cell Descriptives for Emotional Disturbance

	Non-ED		ED	
	Non-Readers	Readers	Non-Readers	Readers
Age				
12	1 (5%)	0 ---	0 ---	2 (10%)
13	1 (5%)	0 ---	1 (5%)	4 (20%)
14	5 (25%)	3 (15%)	7 (35%)	1 (5%)
15	6 (30%)	6 (30%)	5 (25%)	7 (35%)
16	4 (20%)	8 (40%)	6 (30%)	6 (30%)
17	3 (15%)	3 (15%)	1 (5%)	0 ---
Race				
Black	19 (95%)	18 (90%)	14 (70%)	12 (60%)
White	1 (5%)	2 (10%)	6 (30%)	8 (40%)
Gender				
Male	20 (100%)	19 (95%)	13 (65%)	15 (75%)
Female	0 ---	1 (5%)	7 (35%)	5 (25%)
Offenses				
Murder	1 (5%)	0 ---	0 ---	0 ---
Assault	5 (25%)	6 (30%)	9 (45%)	11 (55%)
Robbery of person	2 (10%)	1 (5%)	0 ---	1 (5%)
Car Theft	4 (20%)	7 (35%)	0 ---	2 (10%)
Property Offenses	4 (20%)	1 (5%)	2 (15%)	2 (10%)
Drugs	4 (20%)	3 (15%)	2 (10%)	1 (5%)
Status	0 ---	2 (10%)	5 (25%)	3 (15%)
Firearms	0 ---	0 ---	0 ---	0 ---
Other	0 ---	0 ---	1 (5%)	0 ---

Cont'd.

Appendix D, Cont'd.

	Non-ED		ED	
	Non-Readers	Readers	Non-Readers	Readers
FSIQ				
Min.	63.00	75.00	61.00	72.00
Max.	95.00	99.00	96.00	115.00
Med.	82.00	88.50	82.00	94.50
Mean	82.10	87.90	81.75	94.95
SD	7.95	4.90	8.81	9.22
Reading				
Min.	2.00	4.70	1.70	4.70
Max.	3.60	7.70	3.60	7.70
Med.	3.30	6.00	3.30	7.70
Mean	3.13	6.44	2.99	6.74
SD	0.56	1.27	0.71	1.17
Standard K-corrected T-Scores				
Min.	42.00	40.00	59.00	47.00
Max.	96.00	103.00	115.00	126.00
Med.	74.50	69.00	86.00	82.00
Mean	74.25	70.00	85.10	82.90
SD	15.53	18.54	15.31	22.16
Adolescent T-Scores				
Min.	37.00	37.00	41.00	36.00
Max.	68.00	72.00	86.00	88.00
Med.	57.00	52.00	66.50	62.00
Mean	54.65	51.85	66.85	63.50
SD	9.85	11.69	11.81	16.37

Appendix E

Cell Descriptives for Assaultiveness

	Non-ASA		ASA	
	Non-Readers	Readers	Non-Readers	Readers
Age				
12	0 ---	0 ---	0 ---	0 ---
13	2 (10%)	0 ---	5 (25%)	1 (5%)
14	4 (20%)	2 (10%)	1 (05%)	4 (20%)
15	2 (10%)	7 (35%)	4 (20%)	9 (45%)
16	11 (55%)	8 (40%)	9 (45%)	3 (15%)
17	1 (05%)	3 (15%)	1 (5%)	3 (15%)
Race				
Black	20 (100%)	17 (85%)	20 (100%)	15 (75%)
White	0 ---	3 (15%)	0 ---	5 (20%)
Gender				
Male	19 (95%)	19 (95%)	18 (90%)	17 (85%)
Female	1 (5%)	1 (05%)	2 (10%)	3 (15%)
Offenses				
Murder	0 ---	0 ---	0 ---	0 ---
Assault	0 ---	0 ---	15 (75%)	17 (85%)
Robbery of person	0 ---	0 ---	5 (25%)	3 (15%)
Car Theft	9 (45%)	7 (35%)	0 ---	0 ---
Property Offenses	3 (15%)	8 (40%)	0 ---	0 ---
Drugs	6 (30%)	3 (15%)	0 ---	0 ---
Status	2 (10%)	2 (10%)	0 ---	0 ---
Firearms	0 ---	0 ---	0 ---	0 ---
Other	0 ---	0 ---	0 ---	0 ---

Cont'd.

Appendix E, Cont'd.

	Non-ASA		ASA	
	Non-Readers	Readers	Non-Readers	Readers
FSIQ				
Min.	54.00	71.00	65.00	68.00
Max.	91.00	119.00	96.00	122.00
Med.	73.00	88.50	83.00	89.50
Mean	73.15	88.90	80.11	91.60
SD	9.37	11.52	9.43	12.53
Reading				
Min.	1.40	4.70	1.50	4.70
Max.	3.60	7.70	3.60	7.70
Med.	3.00	6.00	3.00	6.00
Mean	2.74	6.64	2.81	6.42
SD	0.79	1.06	0.73	1.17
Standard K-corrected T-Scores				
Min.	51.00	51.00	52.00	47.00
Max.	92.00	100.00	121.00	126.00
Med.	77.00	79.00	81.00	82.00
Mean	75.30	76.70	85.35	82.90
SD	11.18	15.65	16.42	22.16
Adolescent T-Scores				
Min.	41.00	39.00	45.00	42.00
Max.	73.00	84.00	77.00	103.00
Med.	57.00	56.00	59.50	71.50
Mean	57.85	56.85	61.15	72.10
SD	7.63	11.96	9.88	15.06

Appendix F

Predicted 399 Raw Scores

Raw Score	L	F	K	Hs	Dp	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
0	0	1	4	1	6	8	8	12	5	4	4	8	13
1	1	3	6	2	7	9	9	13	6	6	6	9	15
2	2	4	7	4	8	10	10	14	7	8	8	11	17
3	3	5	9	5	9	11	11	15	9	11	10	12	19
4	5	7	11	6	11	13	12	16	10	13	12	13	22
5	6	9	12	8	12	14	14	17	12	15	15	15	24
6	7	10	14	9	13	15	15	18	13	17	17	16	26
7	8	12	15	10	14	16	16	20	15	19	19	18	28
8	9	13	17	12	15	17	17	21	16	21	21	19	30
9	10	15	19	13	16	19	19	22	17	23	23	20	32
10	11	17	20	14	17	20	20	23	19	26	25	22	34
11	12	18	22	16	18	21	21	24	21	28	27	23	36
12		20	23	17	19	22	22	25	22	30	30	24	39
13		21		18	20	23	23	27	24	32	32	26	41
14		23		19	21	25	24	28	25	34	34	27	43
15		24		21	22	26	25	29	27	36	36	29	45
16		26		22	23	27	26	30	28	38	38	30	47
17		28		23	24	28	28	31	30	41	40	31	
18		29		25	25	30	29	32	31	43	42	33	
19		31		26	26	31	30	33	33	45	44	34	
20		32		27	27	32	31	35			47	36	
21		34		29	28	33	32	36			49	37	
22		35		30	29	34	34	37			51	38	
23		37		31	30	36	35	38			53	40	
24		38			32	37	36	39			55		
25		40			33	38	37	40			57		

REFERENCES

Ageton, S. S., Eliot, D. S., & Canter, R. J. (1979). An integrated theoretical perspective on delinquent behavior. Journal of Research in Crime and Delinquency, 16, 3-27.

American Psychiatric Association. (1980). Diagnostic and statistical manual of mental disorders (3rd. Ed.). Washington, DC: The American Psychiatric Association.

Archer, R. P., Gordon, R. A., & Kircher, F. H. (1986). [MMPI characteristics of adolescents.] Unpublished raw data. In Robert P. Archer (1987). Using the MMPI with adolescents. Hillsdale: Lawrence Erlbaum Associates, Publishers.

Archer, R. P. (1987). Using the MMPI with adolescents. Hillscale: Lawrence Erlbaum Associates, Publishers.

Ball, J. C. (1962). Social deviancy and adolescent personality. Lexington: University of Kentucky Press.

Ball, J. C. (1969). Comparison of the MMPI profile differences among negro-white adolescents. Journal of Clinical Psychology, 16, 304-307.

Baughman, E. E., & Dahlstrom, W. G. (1968). Negro and white children: A psychological study in the rural south. New York: Academic Press.

Bertelson, A. D., Marks, P. A., & May, B. D. (1982). MMPI and race: A controlled study. Journal of Consulting and Clinical Psychology, 50, 316-318.

Berven, N. L., Habeck, R. V., & Malec, J. F. (1985). Predominant MMPI-168 profile clusters in a rehabilitation medicine sample. Rehabilitation Psychology, 30 (4), 209-219.

Butcher, J. N. (1965). Manifest aggression: MMPI correlates in normal boys. Journal of Consulting Psychology, 29, 446-454.

Cadow, B., & Macbeth, L. (1984). Utility of the MMPI-168 with adolescents. Journal of Clinical Psychology, 33 (1), 142-148.

Caldwell, A. B. (1988). MMPI supplemental scale manual. Los Angeles, CA: Caldwell Report.

Carrol, J. L., & Fuller, G. B. (1971). An MMPI comparison of three groups of criminals. Journal of Clinical Psychology, 27, 240-242.

Caspy, T., Reisler, A., & Mendelson, Y. (1987). MMPI and intelligence correlates: Assessment of relationships via multivariate analyses. Journal of Clinical Psychology, 43 (4), 415-421.

Cohen, J. (1960). A coefficient of agreement for nominal scales. Educational and Psychological Measurement, 20 (1), 37-46.

Comrey, A. L., & Marggraff, W. M. (1958). A factor analysis of items on the MMPI schizophrenia scale. Educational and Psychological Measurement, 18, 304-311.

Dahlstrom, W. G., Diehl, L. A. , & Lachar, D. (1986). MMPI correlates of the demographic characteristics of black and white adults. In W. G. Dahlstrom, D. Lachar, and L. E. Dahlstrom (Eds.), MMPI patterns of american minorities (pp. 104-138). Minneapolis: University of Minnesota Press.

Dahlstrom, L. E. (1986). MMPI findings on other american minority groups. In W. G. Dahlstrom, D. Lachar, & L. E. Dahlstrom, eds., MMPI patterns of american minorities (pp. 50-86). Minneapolis: University of Minnesota Press.

Dahlstrom, W. G., Welsh, G. S., & Dahlstrom, L. E. (1972). An MMPI handbook, Vol. 1: Clinical interpretation (revised). Minneapolis: University of Minnesota Press.

Dishion, T. J., Loeber, R., Stouthamer-Loeber, M., & Patterson, R. (1984). Skill deficits and male adolescent delinquency. Journal of Abnormal Child Psychology, 12 (1), 37-53.

Ehrenworth, N. V., & Archer, R. P. (1985). A comparison of clinical accuracy of interpretive approaches for adolescent MMPI responses. Journal of Personality Assessment, 413-421.

Fruchtman, L. (1982). Use of the MMPI in predicting violence in incarcerated delinquents. Unpublished Doctoral Dissertation. Detroit: Wayne State University.

Gearing, M. L. (1979). The MMPI as a primary differentiator and predictor of behavior in prison: A methodological critique and review of the recent literature. Psychological Bulletin, 86, 929-963.

Gilberstadt, H., & Duker, J. (1965). A handbook for clinical and actuarial MMPI interpretation. Philadelphia: Saunders.

Gough, H. G. (1956). Diagnostic patterns on the mmpi. In W. G. Dahlstrom, G. S. Welsh, & L. E. Dahlstrom (Eds.) Basic readings on the MMPI in psychology and medicine (pp. 340-350). Minneapolis: University of Minnesota Press.

Graham, J. R. (1977). The MMPI: A practical guide. NY: Oxford University Press.

Green, R. L. (1980). The MMPI: an interpretive manual. New York: Grune and Stratton, Inc.

Gynther, M. D. (1961). The clinical utility of "invalid" MMPI F scores. Journal of Clnsulting Psychology, 25, 540-542.

Gynther, M. D. (1972). White norms and black MMPI's: A prescription for discrimination? Psychological Bulletin, 78, 386-402.

Harris, R. E., & Lingoes, J. C. (1955). Subscales for the MMPI: An aid to profile interpretation. Mimeographed materials. Department of Psychiatry, University of California, (Corrected version, 1968).

Hathaway, S. R. (1956). Scales 5 (masculinity-feminity), 6 (paranoia), and 8 (schizophrenia). In G. S. Welsh and W. G. Dahlstrom (Eds.) Basic readings on the MMPI. (pp. 104-112). Minneapolis: University of Minnesota Press.

Hathaway, S. R., & Monachesi, E. D. (1953). Analyzing and Predicting Juvenile Delinquency with the MMPI. Minneapolis: University of Minnesota Press.

Hathaway, S. R., & Monachesi, E. D. (1963). Adolescent personality and behavior: MMPI patterns of normal, dropout, and other outcomes. Minneapolis: University of Minnesota Press.

Hoffman, N. G., & Butcher, J. N. (1975). Clinical limitations of three Minnesota Multiphasic Personality Inventory short forms. Journal of Consulting and Clinical Psychology, 43, 32-29.

Huesmann, L. R., Lefkowitz, M. M., & Eron, L. D. (1978). Sum of MMPI scales F, 4, and 9 as a measure of aggression. Journal of Consulting and Clinical Psychology, 46, 1071-1078.

Kahn, M. W., Hannah, M., Hankin, C., Montgomery, C., & Pitz, D. (1987). Psychopathology on the streets: Psychological assessment of the homeless. Professional Psychology Research and Practice, 18 (6), 580-586.

Kaufman, J. M., Cullinan, D., & Epstein, M. H. (1987). Characteristics of students placed in special programs for the seriously emotionally disturbed. Behavioral Disorders, 12 (3), 175-184.

Kelley, T. L. (1959). Selection of upper and lower groups for the validation of test items. Journal of Educational Psychology, 30, 17-24.

Klinge, V., & Strauss, M. E. (1976). Effects of scoring norms on adolescent psychiatric patients' MMPI profiles. Journal of Personality Assessment, 40, 13-17.

Kuder, G. F., and Richardson, M. W. (1937). The theory of the estimation of test reliability. Psychometrika, 2, 151-160.

Lachar, D. (1974). The MMPI: Clinical assessment and automated interpretation. Los Angeles, CA: Western Psychological Services.

Lueger, R. J. (1983). The use of the MMPI-168 with delinquent adolescents. Journal of Clinical Psychology. 39 (1), 39-41.

Malec, J. F. (1983). Relationship of the MMPI-168 to outcome of a pain management program at long-term follow-up. Rehabilitation Psychology, 28 (2), 115-119.

Marks, P. A., Seeman, W., & Haller, D. L. (1974). The acturial use of the MMPI with adolescents and adults. Baltilmore: Williams & Wilkins.

McCreary, C. P. (1976). Trait and type differences among male and female assaultive and non-assaultive offenders. Journal of Personality Assessment, 40, 617-621.

McDonald, R. L., & Gynther, M. D. (1962). MMPI norms for southern adolescent negroes. Journal of Social Psychology, 58, 277-282.

McKegney, F. P. (1965). An item analysis of the MMPI F-Scale in juvenile delinquents. Journal of Clinical Psychology, 21, 201-205.

McKegney, F. P. (1967). Psychological correlates of behavior in seriously delinquent juveniles. British Journal of Psychiatry, 113, 781-792.

Meehl, P. E. (1956). Profile analysis of the MMPI in differential diagnosis. In G. S. Welsh and G. W. Dahlstrom (Eds.) Basic readings on the MMPI in psychology

and medicine (pp. 292-297). Minneapolis: University of Minnesota Press.

Meehl, P. E. & Hathaway, S. R. (1946). The K-factor as a suppressor variable in the MMPI. Journal of Applied Psychology, 30, 525-564.

Meltzer, L. J., Levine, M. D., Karniski, W., Palfrey, J. S., & Clark, S. (1984). An analysis of the learning styles of adolescent delinquents. Journal of Learning Disabilities, 17 (10), 600-608.

Mizes, J. S. (1988). Controlled comparison of bulimics and noneating disordered controls on the MMPI-168. International Journal of Eating Disorders, 7 (3), 425-428.

Moore, C. D., & Handal, P. J. (1980). Adolescents' MMPI performance, cynicism, estrangement and personal adjustments as a function of race and sex. Journal of Clinical Psychology, 36, 932-936.

Narušis, M. J./SPSS, Inc. (1990a). SPSS/PC+ 4.0 base manual for the IMB PC/XT/AT and PS/2. Chicago: SPSS Inc.

Narušis, M. J./SPSS, Inc. (1990b). SPSS/PC+ 4.0 statistics 4.0 for the IMB PC/XT/AT and PS/2. Chicago: SPSS Inc.

Newmark, C. S., & Finch, A. J. (1976). Comparing the diagnostic validity of an abbreviated and standard MMPI. Journal of Personality Assessment, 40, 10-12.

Overall, J. E., Butcher, J. N., & Hunter, S. (1975). Validity of the MMPI-168 for psychiatric screening. Educational and Psychological Measurement, 35, 393-400.

Overall, J. E., & Gomez-Mont, F. (1974). The MMPI-168 for psychiatric screening. Educational and Psychological Measurement, 34, 315-319.

Overall, J. E., Higgins, W., & DeSchweinitz, A. (1976). Comparison of differential diagnostic discrimination for abbreviated and standard MMPI. Journal of Clinical Psychology, 32, 237-245.

Overall, J. E., Hunter, S., & Butcher, J. N. (1973). Factor structure of the MMPI-168 in a psychiatric population. Journal of Consulting and Clinical Psychology, 41, 237-245.

Panton, J. H. (1958). MMPI provile configurations among crime classification groups. Journal of Clinical Psychology, 14, 305-308.

Persons, R. W., & Marks, P. A. (1971). The violent 4-3 MMPI personality type. Journal of Consulting and Clinical Psychology, 36, 189-196.

Prescott, G. A., Balow, I. H., Hogan, T. P., & Farr, R. C. (1986). Reading vocabulary subtest of the Metropoiltan achievement tests (6th. ed.). San Antonio: The Psychological Corporation: Harcourt, Brace & Jovanovich, Inc.

Regan, T. (1988). The utility of the MMPI-168 with incarcerated delinquents. Unpublished Document. Detroit: Wayne County Probate Court Clinic for Child Study.

Regan, T. & Fruchtman, L. (1990). The suitability of the MMPI-168 for incarcerated delinquents. Unpublished Manuscript. Detroit: Wayne County Probate Court Clinic for Child Study.

Rohsenow, D. J. (1982). Social anxiety, daily moods, and alcohol use over time among heavy social drinking men. Adictive Behaviors, 7 (3), 311-315.

Schaffer, J. W., Nurco, D. N., Hanlon, T. E., Kinbeck, T. W., Duszynski, K. R., & Stephenson, P. (1988). MMPI-168 profiles of male narcotic addicts by ethnic group and city. Journal of Clinical Psychology, 44 (2), 292-298.

Sexton, D. L., McIlwrith, R. K., Barnes, G., & Dunn, R. (1987). Comparison of the MCMI and the MMPI-168 as psychiatric inpatient screening inventories. Journal of Personality Assessment, 51 (3), 388-398.

Singh, B. S. (1984). Ventilatory response of Co-sub2: A psychobiologic marker of the respiratory system. Psychosomatic Medicine, 46 (4), 333-345.

Walters, G. D., Scrapansky, T. A., & Marlow, G. A. (1984). The emotionally disturbed military criminal offender: Identification, background, and institutional adjustment. Criminal Justice and Behavior, 13 (3), 261-285.

Wechsler, D. (1975). Wechsler intelligence scale for children-revised. San Antonio: The Psychological Corporation: A Division of Harcourt Brace Jovanovich, Inc.

Wechsler, D. (1981). Wechsler adult intelligence scale-revised. San Antonio: The Psychological Corporation: A Division of Harcourt Brace Jovanovich, Inc.

Williams, C. L. (1985). Use of the MMPI with adolescents. In J. N. Butcher & J. R. Graham (Eds.), Clinical applications of the MMPI, (pp. 37-39). Minneapolis: Department of Conferences, University of Minnesota.

ABSTRACT

AN ANLAYSIS AND VALIDATION
OF SCALE-8 ON THE MMPI-168
WITH JUVENILE DELINQUENTS

by

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The purpose of this research was to provide an understanding of what Scale-8 is measuring and to determine the usefulness of this scale in a delinquent population. The sample for the analysis consisted of 312 consecutive male and female referrals to the Juvenile Court Clinic for Child Study in Detroit. Crosstabulation of item endorsement with the levels of the background variables revealed several items which showed significant differences, however the magnitude of these differences were small and did not result in overall scale differences, except for reading level. Non-readers scored significantly higher than readers. The internal reliability was .73. The factor analysis yielded ten factors accounting for 54.7% of the variance and gave some support to one of the ten factors dealing with social alienation. The samples for the validation of each of the dimensions of delinquency, emotional disturbance and assaultiveness were drawn from a pool of 821 consecutively

tested delinquents based on preset criteria. The hypotheses dealt with three major issues: 1) Whether or not those rated high on a dimension would score higher on Scale-8. 2) Which scaling method (standard K-corrected T-scores or T-scores based on adolescent norms) is more accurate in discriminating on the two levels of the three dimensions. 3) To deterimine why nonreaders score significantly higher than readers on Scale-8. The results indicated that Scale-8 does not measure delinquency or assaultiveness in this population. However, emotionally disturbed delinquents scored significantly higher than not-emotionally disturbed delinquents. Nonreading delinquents appear to be scoring higher on Scale-8 because they are more disturbed than delinquents who can read. This research supported the use of the adolescent norms, as well as the standard K-corrected T-scores in this population, when it comes to using Scale-8 to discriminate emotionally disturbed delinquents from those who are not emotionally disturbed.

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