

MMPI-A SCALE SCORES: DIFFERENCES
BETWEEN INCARCERATED AMERICAN INDIAN
ADOLESCENT MALE OFFENDERS AND THEIR
BLACK AND WHITE COUNTERPARTS

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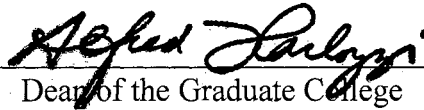
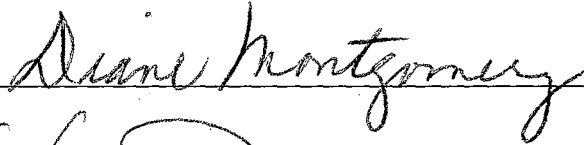
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CHAPTER 1

INTRODUCTION

In recent years, literature regarding the effects of culture on psychological testing has steadily increased (Dana, 1993). The reasons for this interest are varied and include a growing awareness among professionals of the influence that an individual's cultural background may affect the results of psychological testing. Three overlapping objectives of cross-cultural studies of personality have been identified. Butcher (1985) suggests that the most notable reason is to provide useful clinical assessment techniques for other cultures. Brislin (1983) pointed out that a second purpose of cross-cultural studies is to investigate the extent to which personality constructs postulated as the result of research in one culture can be applied universally. Although universality cannot actually be proven, its plausibility can be strengthened by demonstrating invariance of personality constructs across numerous diverse cultures (Ben-Porath, 1990). The third purpose for cross-cultural studies of personality concerns the comparison of "typical" personalities in two or more cultures by comparing scale scores across cultures (Ben-Porath, 1990).

Culture and Personality Testing

If, in developing instruments to assess personality, we are only interested in predictive or concurrent validity, we need not study instruments across other cultures. In fact, each culture could conceivably develop its own empirically keyed instruments. If, on the other hand, we are interested in construct validity, what a given instrument measures, then we want to find out whether the meanings and interpretations associated with an inventory developed in one culture can validly be utilized with another culture (Ben-Porath, 1990).

Any instrument that claims to measure universal personality constructs should be subjected to cross-cultural replicatory research. Cross-cultural validation enables us to determine to what extent the validity of constructs developed to characterize personalities in one culture actually represent universals that are applicable to all cultures. If, in fact, we discover that the structure of personality is stable cross-culturally, we will be able to go beyond the study of differences between cultures and make meaningful cross-cultural comparisons and generalizations (Ben-Porath, 1990).

The argument has been made that culturally determined thought processes affect psychological interventions and measurements. For example, these processes may unintentionally bias interpretation of clinical instruments by minimizing or ignoring group differences (Dana, 1988). Therefore, in the assessment process whatever we take for granted in ourselves and in our clients becomes an obstacle to authentic interpretation.

In addition to the identification of culture-general and culture-specific psychopathologies, it is necessary to distinguish between genuine deviance and residual deviance. Genuine deviance refers to a pattern of behavior that deviates from normal behavior relevant to all populations and special groups. Butcher et al. (1992) in the MMPI-A manuscript define deviance as delinquent behavior (Psychopathic Deviate scale) and/or behaviors typically associated with psychosis (Schizophrenia scale). Residual deviance refers to less functional behaviors, or those problems-in-living that are not necessarily pathological but are derived from specific and unique cultural experiences (Dana, 1993). According to Matchett (1972) an example of a common problem-in-living can be found in the Hopi villages during mourning, especially in women, and it includes depression and hallucinations of the recently deceased family member. In the case where

the underlying construct tapped by an instrument differs across ethnic and cultural groups, the interpretation of the assessment can result in the appearance of pathology where none may actually exist.

Authentic assessment of all individuals directly concerns psychologists, whether they work with mental health programs, criminal justice systems, welfare agencies, or educational institutions. In particular, the need for an efficient means of evaluating personality, especially in terms of the stresses that are put upon the American Indian people in our society, has led to the increasing use of well-established tests like the Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A) (Butcher, Williams, Graham, Archer, Tellegen, Ben-Porath, & Kaemmer, 1992; Dahlstrom, 1986). This instrument contains 478 items, which make up 10 primary scales, 7 validity scales, and 52 subscales and is designed to assess adolescent psychopathology (Archer, 1997; Butcher, et al., 1992).

Consideration of American Indian Culture

While American Indians do not constitute a homogeneous cultural group, there appears to be a core of world-view characteristics that has persisted and is an enduring reminder of an array of historic identities. It is this sense of American Indian identity that not only minimizes assimilation into the Anglo-American culture, but has also enabled life to be sustained under conditions of poverty, isolation, relative lack of educational opportunities, and the constant pressure of discrimination (Dahlstrom, Lachar, & Dahlstrom, 1986). As a minority group, American Indians are often dependent on government commodities and financial assistance, and experience some of the highest rates of unemployment, physical illness, alcohol abuse, trauma, and accidents (Dana,

1986). Therefore, it seems likely that the experience and worldview of American Indian people will affect clinical measurements conducted on this population, including psychological testing. American Indians, as well as other minorities, face potential bias from inappropriate test content, measurement of different constructs in different populations, inappropriate standardization samples, and social consequences due to labeling and prejudice (Kaufman & Reynolds, 1983).

According to the U. S. Bureau of Census (1996), the American Indian (all tribal groups and native entities) population was 2.2 million in 1995. There are 517 different native entities that have been recognized by the federal government, while state governments have recognized 36 tribes with unique customs, social organization, and ecology (LaFromboise & Low, 1989). Mason and Trimble (1982) found that these tribes once used over 200 different languages. Of these, 149 are still in use, as well as hundreds of dialects. In addition to differences in subgroups and linguistic background, American Indians differ in region of residence and in degree of acceptance of and by the majority culture. However, some values common to Indian tribal cultures can be identified. LaDue (1982) described a group of highly traditional American Indians as “more likely to be involved with others, to have stronger support systems, have less undirected activity, and to be more involved in spiritual activities.” Highwater (1981) discussed what he terms the “primal mind,” stating that it emphasizes the close identification of the American Indian individual with his or her tribe and its tribal religion, with much less ego orientation and social narcissism than that of the dominant culture. Dahlstrom (1986) noted a pervasive sense of interrelatedness, not only to other tribal members, but also to all living beings. This interrelatedness is often coupled with openness to alternative identities and a

tolerance of what might be termed deviant behavior by the dominant culture. Further, though many American Indians have moved away from their traditional values, their position in the dominant culture continues to be ambiguous and may be a possible source of stress when emotional problems arise, especially if community support is no longer readily available to them.

Cultural Considerations in Personality Testing

Large differences between a minority group and the majority population often result in a reaction of dismay and distress from investigators. How can one group of minority Americans look so different on the MMPI from a seemingly similar group of White Americans? Unfortunately, even though the call for appropriate comparisons across different minorities and age ranges is often heard, few groups have actually been surveyed (Dahlstrom, 1986; 1997). Dahlstrom further identified the need for the examiner to be not only well trained, but also a person trusted by tribal members. He also noted the desirability of collecting as much background information as possible to make interpretation of the results more meaningful as reasons for the lack of such data. These types of considerations need to be taken into account in the collection of minority normative data.

It is often seen as the fault of the test when minority groups show large differences from the majority results, especially in similar population settings (Allen & Walsh, 2000; Dahlstrom, 1986; 1997; Dana, 2000). One strategy for dealing with these differences is new conversions from raw to T-scores should be developed for each subgroup (Dahlstrom, 1986; 1997; Van de Vijver, 2000). This would serve as a corrective

measure so that an individual might be judged in relation to his or her own true peers and not be subjected to invidious comparisons with members of the dominant White culture.

Although such a procedure has its uses, there is a danger that important sources of conflict with the dominant culture might be minimized. If all deviations are “explained away” as only typical reactions of an individual’s cultural group, the stresses that the individual’s coping strategies (i.e., true psychopathology) put upon the respondent may be obscured. However, if minority groups consistently score higher than the dominant culture groups in similar settings, investigation of possible cultural influences could offer possible explanations.

In the case of elevated MMPI profiles in minority subjects, there may be environmental situations that require a change of interpretation of high scores. For example on the Schizophrenia (Sc) and Paranoia (Pa) scales for an American Indian population, it would seem advisable to be aware of other possible meanings such as spiritual beliefs and a history of oppression and deceit at the hands of the majority of population, rather than to introduce a priori statistical suppression of the differences (Dahlstrom, 1986; Dana 1993; LaDue, 1982). In other words, it seems reasonable to investigate why minority group members have high scores on certain scales, rather than to dismiss the findings as simply “typical of American Indians.”

Knowledge and understanding of scale score differences on the MMPI-A between American Indians and their Black and White counterparts are relatively limited. However, interest in the suitability of the MMPI for use with persons from diverse backgrounds and origins is by no means recent. As early as 1944, Grace Arthur published a study of the usefulness of the MMPI in evaluating the personality characteristics of

students in a twelfth grade at a federal school for American Indians located in Minnesota. Although the test was still in a preliminary form at the time, Dr. Arthur's findings led her to conclude that it was a suitable instrument for such assessment purposes. Additionally, Pollack and Shore (1980) compared scores of several different diagnostic groups of psychiatric patients from Pacific Northwest Coast, Plateau and Plains tribes and found that these scores did not discriminate between the groups; scores were similar across all of the groups. More recently, however, investigators have come to question these conclusions. In the MMPI-2 normative sample, 77 American Indian people scored higher than their White counterparts on most of the clinical scales (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). Forey (1996) replicated this finding using a sample of 68 tribal college students. In reviewing this research, Graham (1993) concluded that the differences between the MMPI-2 clinical scale elevations of the American Indians and their White counterparts are potentially important and that without analyses of these differences in relation to extra-test characteristics, it is unclear how these differences should be interpreted (Allen, 1998).

Therefore, it seems that cross-cultural research is essential to ascertaining the generality and universality of psychological instruments (Butcher & Pancheri, 1976). If we wish to understand psychologically what an instrument measures, that is, if we are interested in construct validity, we want to find out whether the meanings and interpretations associated with an inventory developed in one culture can validly accompany its use in another culture.

Statement of the Problem

Although many studies have explored the utility, validity, and accuracy of the MMPI, MMPI-2 and the MMPI-A, few studies have explored the impact of cultural differences among minority groups utilizing the MMPI-A. It seems relevant to explore these cultural differences in regards to the MMPI-A scale scores, especially in light of current research that supports the premise that culture is imbedded in an individual's personality. For example, Timbrook and Graham (1994) questioned the validity of the MMPI instruments across various cultures and further questioned the accuracy of MMPI interpretation across cultures. Although most of these studies have compared Blacks with Whites, there is a shortfall within the literature comparing other cultures to each other and to the majority group; more specifically, comparing American Indians with Blacks and with Whites.

Because the MMPI is a criteria-based test, an imposed etic may be inappropriately placed on responses of American Indians. The elevations found with adult American Indian populations suggest that it is likely that adolescents will show similar elevations on these scales. In particular, for American Indian males in a secure adolescent residential treatment facility, typical elevations compounded by cultural factors may suggest more psychopathology than actually exists. Additionally, artificially elevated scores due to cultural factors may adversely impact treatment. Therefore, it is expected that deviations in MMPI-A primary and scale scores across the different groups would be attributed to cultural differences that are indigenous to each group.

Groups of incarcerated adolescents were used, as it was believed that the levels of psychopathology (i.e., the MMPI-A primary and subscale scores) would be higher than

the general population. A population of incarcerated adolescents would provide natural elevations of these scores and provide adequate data to analyze differences across the cultural groups. It is within these elevations of scores that differences across culture may be found and attributed to culture rather than to true pathology.

Significance of the Study

A number of questions pertaining to the validity of scale scores for minority adolescents on the MMPI-A are addressed in the current study. Among American Indian adolescents, cultural factors are theorized to play a significant role on at least five scales, Infrequency (F), Depression (D), Psychopathic Deviant (Pd), Paranoia (Pa), and Schizophrenia (Sc) (LaDue, 1982; Dana, 1993). These findings are consistent with results reported by Bull (1976), Green (1986), Kline, Rozytko, Flint, and Roberts (1976), and Pollack and Shore (1980). Substantially elevated scores on the Schizophrenia (Sc) and Mania (Ma) scales are similar to findings by others (Bull, 1976; Butcher et al., 1983; Herreid & Herreid, 1976; Page & Bozlee, 1982; Pollack & Shore, 1980). It is hypothesized that a long history of oppression and conquered nation status, strong spiritual beliefs, and poverty have contribute to inflated elevations on these scales (Dahlstrom, 1986; Dana 1993; LaDue, 1982).

According to Timbrook and Graham (1994), there are two types of cultural differences that have been researched in regards to the MMPI scale scores. The first concerns a more widely researched comparison of scores (high vs. low) between minorities and Whites. The second and less extensively researched area concerns the validity of scale scores across various cultural groups. This study adds to the body of

literature on both of these areas and also offers some predictive properties in regards to group membership based upon MMPI-A primary and subscale scores.

Research Questions

As stated earlier, the purpose of this study is to explore scale score differences on the MMPI-A between incarcerated adolescent male American Indians and their Black and White counterparts to determine if the cultural groups may impact these scores differently. The following research questions are addressed:

1. Are there significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on the MMPI-A primary scale scores (F, D, Pd, Pa, and Sc)?
2. Are there significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆)?
3. Can racial group membership be predicted based upon the MMPI-A primary scales (F, D, Pd, Pa, and Sc)?
4. Can racial group membership be predicted based upon the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆)?

Null Hypotheses

The following null hypotheses are tested in this study.

Ho: There will be no significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on primary MMPI-A scales (F, D, Pd, Pa, and Sc).

Ho: There will be no significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on MMPI-A subscales (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆).

Ho: Cultural group membership cannot be predicted based upon the MMPI-A primary scale scores (F, D, Pd, Pa, and Sc).

Ho: Cultural group membership cannot be predicted based upon the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆).

Definitions of Related Terms

Adolescent Offender. For this study, adolescent offender is defined as an individual between the ages of 14 and 18, committed to the custody of the Lloyd E. Rader Institute, a Juvenile Justice Detention Center in Sand Springs, Oklahoma. Rader is a secure residential treatment facility for adolescents adjudicated delinquent for a number of serious crimes that, if committed as adults, would be considered felonies (e.g., murder, rape, armed robbery, etc.).

American Indian. As identified by documentation of American Indian heritage, Certified Degree of Indian Blood (CDIB) card.

White. As identified by parent or guardian report.

Black. As identified by parent or guardian report.

Racial/Cultural Group. Demographic groups that are self-identified and share a common historical style, as well as similar behaviors and values.

MMPI-A Validity Scales.

Cannot Say Score (?). This score is not a psychometric scale because it does not contain a fixed item pool but rather reflects the number of items that were either omitted or endorsed as both True and False.

Lie Scale (L). The L Scale consists of 14 items. It was designed to identify individuals who attempt to portray themselves in a favorable light by denying relatively minor flaws or weaknesses. It is seen as a measure of the individual's willingness to self-disclose personal information and to endorse negative self-views.

Subtle Defensiveness Scale (K). The K Scale consists of 30 items and was developed as a measure of test defensiveness and as a correction for the tendency of some people to deny problems. Five scales on the MMPI-2 are corrected by adding a portion of the K to the total score: Hs, Pd, Pt, Sc, and Ma. However, the correction was never used with adolescents on the original MMPI because it had not been validated on that population, and it is not included on the MMPI-A norms.

Infrequency Scale (F). The F Scale consists 64 items and was developed as a Measure of symptom exaggeration or the tendency to claim an excessive number of psychological problems. The F scale includes a variety of items related to strange or unusual experiences, thoughts, sensations, paranoid ideation, and antisocial attitudes and behaviors. Adolescents who produce marked or extreme elevations on the F scale may be suffering from severe psychiatric illness, may be attempting to “fake-bad” or overreport symptoms, or may be engaging in a random response pattern. Further, F scale item endorsement patterns have been shown to be affected by both developmental and cultural factors (Archer, 1997). The F1 subscale was developed to detect deviant responding to items located toward the front of the test and the F2 subscale to detect possible deviant responding to items located toward the end of the item pool (Pope, Butcher & Seelen, 1993; Archer, 1997; Butcher et al., 1992):

Consistency Scales. Consistency of item endorsement verifies the items have been endorsed in a reliable manner.

TRIN. The True Response Inconsistency Scale is made up of pairs of items in which a combination of two “true” or two “false” responses is semantically inconsistent. For example, “I am happy most of the time” and “Most of the time I am blue” cannot be

answered in the same direction if the test taker is responding consistently to the content.

VRIN. The Variable Response Inconsistency Scale is used to help interpret a high F score. It is made up of pairs of questions. For example, answering “true” to “I am greatly bothered by forgetting where I put things” and “false” to “I forget where I leave things” is inconsistent. Summing the number of scores the scale inconsistent responses. A high F score along with a low to moderate VRIN score rules out random responding (Pope, Butcher, & Seelen, 1993; Archer, 1997).

Clinical Scales.

Scale 1, Hyponchondriasis (Hs). Scale 1 contains 32 items. It was developed to identify individuals with a history of symptoms of vague physical complaints and ailments and who have a preoccupation with bodily functioning, illness, and disease.

Scale 2, Depression (D). Scale 2 contains 57 items developed to identify general dissatisfaction with life, poor morale, and lack of hope for the future.

Scale 3, Hysteria (Hs). Scale 2 contains 60 items used to identify individuals who utilize hysterical reactions in stressful situations. This scale includes items related to presenting the self as well socialized and well adjusted, as well as items of specific somatic concern.

Scale 4, Psychopathic Deviate (Pd). Scale 4 contains 49 items. It was originally designed to identify the psychopathic, or rather, antisocial personality. Individuals who were court referred for psychiatric evaluation as a result of delinquent actions including truancy, substance abuse, lying, forgery, stealing, and sexual promiscuity make up the criterion group for this scale. The scale covers areas such as social isolation, delinquency, dissatisfaction with everyday life, family conflicts, and problems with authority figures.

Scale 5, Masculinity-Femininity (Mf). Scale 5 consists of 44 items originally developed to identify homosexual males. However, difficulty in identifying or defining a clear diagnostic grouping resulted in the scale being used merely to indicate a substantial identification with traditional feminine or masculine roles.

Scale 6, Paranoia (Pa). Scale 6 consists of 40 items created to assess symptoms involving ideas of reference, suspiciousness, feelings of persecution, moral self-righteousness, and rigidity. Many items deal with psychotic symptoms but there is also a large group of items that deals with interpersonal sensitivity, cynicism, and rigidity that are not necessarily psychotic symptoms.

Scale 7, Psychasthenia (Pt). Scale 7 consists of 48 items designed to measure psychasthenia, now known as obsessive-compulsive

disorder. Compulsions, obsessions, excessive doubts and high levels of tension and anxiety characterize it.

Scale 8, Schizophrenia (Sc). Scale 8 consists of 77 items and is the largest scale in the MMPI-A. It was developed to identify patients with schizophrenia, and deals with bizarre thought processes, peculiar thoughts, social isolation, difficulties in concentration and impulse control, and disturbances in mood and behavior.

Scale 9, Hypomania (Ma). Scale 9 consists of 46 items developed to identify patients with hypomanic symptomatology. Content areas include elevated mood, grandiosity, irritability, egocentricity, and cognitive and behavioral overactivity. High scores on this scale have been related to narcissism, social extroversion, impulsivity, and excessive activity.

Scale 0, Social Introversion (Si). Scale 0 consists of 62 items. Individuals who produce elevated scores on scale 0 are likely to be socially introverted, insecure, and markedly uncomfortable in social situations. They tend to be shy, timid, submissive, and lacking in self-confidence.

Limitations of the Study

This study was carried out in a residential treatment facility for male adolescent offenders. Adolescents adjudicated to this facility typically have previous offense histories or have engaged in an offense that justified a placement in a secure setting rather than an outpatient treatment facility or a sentence of probation. Most of the male

adolescent offenders in this facility are believed to be chronic offenders. They may differ from other male adolescent offenders, such as those receiving outpatient treatment, or in a sample of male non-offenders.

It is important to note that the results of this study may be influenced by the individual's offender status and should not be generalized to all adolescents. The label of adolescent offender also carries a stigma. Consequently, responses to the MMPI-A may be influenced by the offender attempting to present him or herself in a more favorable manner. In contrast some adolescent offenders tend to embellish symptoms to gain peer approval. Offenders were used in this study as this population generally provides relevant characterological issues (i.e., higher MMPI-A primary scale scores) than the general population.

The study of cultural impact on the MMPI-A is limited to American Indian male adolescent offenders. These results may not be generalized to all minority adolescent offenders, all male adolescents, or all minority adolescents.

All American Indians participating in the study possess blood quantum cards, suggesting at least some tribal involvement. However, the need for an adequate subject pool required that archival data be used, preventing the utilization of an acculturation scale with this population. Therefore, the degree of acculturation or "traditionalness" was not directly assessed.

Individuals who participated in this study are representative of an adolescent offender population and, as such, results could also be influenced by many developmental issues, such as physiological processes, cognitive processes, and psychological and emotional challenges. In addition, this study was conducted in a single geographical area

with participants who, for the most part, were born and reared in this same geographical area.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter begins with a description of findings on adolescent psychopathology. Next, the development of the MMPI, MMPI-2, and MMPI-A are reviewed. Cultural considerations in assessment are reviewed, with an emphasis on the relative lack of empirical data concerning the use of the MMPI-A with adolescent American Indian populations. Cultural values and experiences of American Indians are discussed. Finally, literature relating to codetype interpretations of MMPI-A profiles and their relation to the examination of particular populations, in this case, institutionalized American Indian adolescent males, White adolescent males, and Black adolescent males is discussed.

Adolescent Assessment

Achenbach (1978) suggested that an understanding of psychopathology in children and adolescents must be firmly grounded in the study of normal human development. Adolescence is clearly one of the most critical developmental transitions that individuals go through (Archer, 1992). The frequency and intensity of changes that are simultaneously occurring present major challenges to the development of mature, appropriate and effective coping strategies (Peterson & Hamburg, 1986). It is the inability to develop such appropriate coping mechanisms that results in psychopathology. Three major areas of change and challenge for adolescents include physiological processes, cognitive processes, and psychological and emotional development.

One illustration of the influence of developmental forces on MMPI responses concerning physiological maturation can be seen in response to the item, "I am worried

about sex.” This item is included on the Hysteria (Hs), Masculinity-Femininity (Mf), and Schizophrenia (Sc). According to the Minnesota Multiphasic Personality Inventory (2nd revision; MMPI-2) Manual (Butcher, et al., 1989) this item is endorsed in the true direction by 15 percent of adult men in the normative sample. In contrast to the adult male sample, this item was endorsed true by 30.2 percent of adolescent males in the MMPI-A normative sample (Butcher et al., 1992). The higher rate of endorsement of this item in the critical direction by males in the 14 to 18 age group probably reflects the high level of stress for these adolescents related to issues of sexual identity as well as sexual maturation (Archer, 1997).

Adolescence also may be defined in terms of changes that occur in cognitive processes. Piaget (as cited in Archer, 1997) postulated that during early adolescence, the individual typically makes the transition from concrete operations to formal operations evidenced by the ability to manipulate ideas and concepts. According to Elkind (1978, 1980), as adolescents become capable of thinking about their thoughts, they may also become excessively concerned with how others perceive them. At least part of this self-absorption and belief in the uniqueness of their own experiences can be seen in their response to the Psychasthenia (Pt) and Schizophrenia (Sc) scale item, “I have strange and peculiar thoughts.” This item was endorsed true by 15 percent of adult males in the MMPI-2 normative sample while 45 percent of the male adolescents in the MMPI-A normative sample endorsed it as true (Archer, 1997). The item, “No one seems to understand me.” which appears on the Psychopathic Deviant (Pd), Paranoia (Pa), and Schizophrenia (Sc) scales was endorsed true by 9 percent of the men in the MMPI-2

normative sample and by 25.6 percent of the adolescent boys in the MMPI-A sample (Archer, 1997).

Finally, a host of psychological and emotional challenges occur during adolescence including the process of individuation, and the formation of ego identity and ego maturation (Archer, 1997). Blos (1967) described individuation as the development of relative independence from family relationships in preparation for assuming the role as an adult member of society. Adolescents typically increase their involvement with peers while decreasing their involvement with family members. Archer (1997) indicated that the early stages of individuation may result in increased conflict with parents as attitudes, thoughts, and feelings begin to differ from those of the adolescent's parents.

Ambivalence in the individuation process is also likely to be seen in rapid and marked attitudinal and behavioral changes by the adolescent. Ego identity includes the conscious sense of individual identity as well as an unconscious striving for developing personal character. Ego development also includes increasingly complex functioning in terms of impulse control, character development, interpersonal relationships, and cognitive complexity (Archer, 1997). As individuals develop, self-awareness, cognitive complexity, and interpersonal style become increasingly complex. Archer (1997) noted that adolescents rarely achieve higher stages of ego development. Several items reflecting this fact include: "I have few quarrels with members of my family," and, "Once in a while I feel hate towards members of my family whom I usually love." The first was endorsed true by 70 percent of adult males and 46 percent of adolescent males in the samples, and the second was endorsed true by 32 percent of adult men and 59 percent of adolescent boys in the samples, Archer (1997).

Adolescent Psychopathology

In addition to an awareness of adolescent developmental issues, it is important for the MMPI-A user to develop an understanding of the nature and extent of psychopathology typically encountered during adolescence (Archer, 1997). The definition and measures employed to identify psychiatric disorders among adolescents, as well as the methods and informants employed are of great importance. Weissman, Wickramaratne, Warner, John, Prusoff, Merikangas, & Gammon (1987) found considerable discrepancies between parent's and children's reports of the child's psychopathology using the Schedule for Affective Disorders and Schizophrenia for School-Age Children. They found that children's self-reports produced considerably more psychopathology than did the parent's. Reich and Earls (1987) also reported similar results using structured interview techniques such as the Diagnostic Interview for Children and Adolescents (DICA). An investigation by Rosenberg and Joshi (1986) on the Achenbach and Edelbrock (1983) Child Behavior Checklist (CBCL) found a significant relationship between degree of marital discord and discrepancies within parental reports of child behavior problems. It seems that the greater the degree of marital discord, the greater the discrepancy within parental reports.

In a more recent study, Williams, Hearn, Hostetler, and Ben-Porath (1990) compared self-report measures of psychopathology that included the MMPI with structured interview findings on the Diagnostic Interview Schedule for Children (DISC) and the Achenbach and Edelbrock CBCL. Significant disagreement was found between the measures that identified psychopathology. Therefore, it is clear that our estimates of

adolescent psychopathology relate not only to how diagnostic questions are asked, but also to whom the questions are addressed.

Psychopathology is often studied through the use of instruments that assess personality styles. However, information is not available to accurately assess both the emotional and behavioral problems in adolescents, as there is available to assess these problems in adults. This fact has impeded both research and clinical practice (Williams & Butcher, 1989). Historically, personality testing emerged primarily in work with neurotic and psychotic patients in the late 19th century. Group intelligence testing during World War I provided the prototype for self-report personality inventories such as Woodworth's Personal Data Sheet. This inventory was widely adopted for civilian use after the war, in both an adult and child form. By empirical item selection and criterion-keyed scoring, it served as a model for the development of subsequent self-report inventories. It was the basic method originally followed in development of the most widely used personality inventory, the Minnesota Multiphasic Personality Inventory (MMPI) (Fagan & VandenBos, 1993).

The MMPI

Following the trend of self-report personality inventories, authors S. Hathaway and J. McKinley began work in 1937 to develop an instrument to replace the time-consuming diagnostic interview (McKinley & Hathaway, 1943). The initial research resulted in the first MMPI scale, designed to identify hypochondriacal tendencies in psychoneurotic medical patients (McKinley & Hathaway, 1940). The development of additional MMPI scales continued over the next several years. The clinical scales were completed by 1946 and by 1948 the development of validity scales were also completed (Colligan, Osborne,

Swenson, & Offord, 1983). The evolution of the MMPI has made it the most widely used and widely researched personality assessment instruments in both adult and adolescent settings and has contributed significantly to our understanding of personality with over 140 translations in 46 countries (Butcher & Williams, 1992). Audiotaped versions of the MMPI-2 and MMPI-A are also available for individuals with visual difficulties or lowered reading levels.

The MMPI is a 566-item, true/false, objective personality assessment instrument that comprehensively identifies a large number of personality features. Soon after its 1943 publication, the MMPI became the most widely used personality test in the United States (Lubin, Larsen, & Matarazzo, 1984). The relative ease of administration and scoring as well as the large pool of items covered by the test contributed to the popularity of the MMPI in both clinical and experimental settings (Friedman, Webb, and Lewak, 1989).

The MMPI has an extensive history in identifying and evaluating the antisocial personality and its precursor, conduct disorder. The Psychopathic Deviate (Pd) scale, one of the 10 clinical scales, specifically identifies antisocial features. Further, the MMPI has been used extensively in corrections nearly since its inception (Clark, 1952; Pantou, 1958, 1959, 1962).

The MMPI has a long history of use with adolescents. The original normative sample for the MMPI included subjects as young as 16 years old, and the test authors clearly felt that the MMPI was suitable for assessing personality characteristics in adolescents (Hathaway & McKinley, 1940). Research on the use of the MMPI with adolescents began as early as 1941, preceding the release of the final form of the

inventory. Pioneering studies by Capwell and Monachesi demonstrated that Psychopathic Deviate (PD) scale discriminated between delinquent and nondelinquent adolescents (Newmark, 1996). During the 1947 – 1948 school year, Hathaway conducted the largest prospective study of the MMPI with adolescents ever undertaken. Hathaway and Monachesi (1963; Green, 1980), utilizing the Minneapolis public school system, collected MMPI data from 3,971 ninth graders with a mean age of about 15. Two and four years later they examined their data along with records obtained from the schools, and determined how many students had established records with the local juvenile division of the probation or police department. Again, in the spring of 1954, they tested another 11,329 ninth graders, representing the entire state of Minnesota. Three years later they determined who among this group of participants had established juvenile records. In 1957, once the majority of the second subject group had reached twelfth grade, they readministered the MMPI to 3,976 of these students. Follow-up data were collected from police records and court files. Their study showed that the adolescents had T-scores that were approximately 10 points higher than those of adults on the Psychopathic Deviate (Pd), Schizophrenia (Sc), and Hypomania (Hy) scales, utilizing K-corrections (Green, 1980).

This research was of considerable importance for several reasons. First, it provided detailed empirical information on the MMPI when used with adolescents. For example, they were able to report differences in item endorsement between adolescents and adults and between male and female adolescents. Additionally, they identified test-retest differences reflecting personality changes that occurred between middle and late adolescence. Second, their research established the validity of the MMPI in predicting the

important behavioral domain of delinquency. Third, their data served as a foundation for the development of adolescent norms.

Revision of the MMPI

The original MMPI had two primary inadequacies, which made the need for revision apparent. First, the items were out of date with particular statements containing objectionable content (Butcher & Tellegen, 1966). Second, the original norms used to standardize the measure were homogenous due to using subjects restricted by ethnicity and geography. The majority of individuals used were white, rural Minnesotans (Butcher & Williams, 1992). After more than 40 years passed, the University of Minnesota Press decided, in 1982, to revise the test. Great care was taken not to radically reconstruct the new instrument but to restandardize the existing device to maintain the continuity of the validity, clinical, and Harris-Lingoes scales. In 1989, the MMPI-2 was published.

The MMPI and MMPI-2 were standardized on adult populations. Use of the MMPI and MMPI-2 with adolescent populations revealed items, which, although developmentally appropriate, tended to characterize the juvenile in a deviant light. The adolescents appeared excessively psychopathic because they were compared to an adult population, not their peers. Typical adolescents are inclined to demonstrate an interest for excitement and emotionality as well as approach the world in a more intense and heightened manner than adults generally do. Examples of this can be found in questions typically answered by adolescents as true, such as, "When I get bored I like to stir up some excitement," or "At times I have fits of laughing and crying that I cannot control." A decreased interest in intellectual matters is also noted when comparing adolescents to adults. This can be seen in how typical teenagers respond to the following item with a

response of false: “I like to read about history” (Williams, Butcher, Ben-Porath, & Graham, 1992). The MMPI-A (adolescent form) followed shortly after in 1992.

Development of the MMPI-A

As a result of these observations, the MMPI Restandardization Committee decided that some alterations in the MMPI-II must occur in order to make the instrument more effective with an adolescent population. An experimental form was developed exclusively for use with adolescents, Form TX. It parallels that of the adult form used in data collection in developing the MMPI-2 in that both contained 704 test items, 550 being the original MMPI test items with 82 being revised to eliminate outdated language, awkward wording, sexist language, etc. 58 new items appeared on both forms, addressing compliance to treatment and amenability to therapy, attitudes towards self-change, alcohol and drug use, eating difficulties and suicide potential. Form TX additionally had 96 adolescent specific items assessing adolescent specific items assessing adolescent development and psychopathology and relevant content areas. It was believed that these new items would provide some understanding related to identity formation, peer-group influence, school issues, parent and family relationships, and sexuality. The 704-item booklet was then utilized to validate the standard scales and examine codetype classifications with the new instrument (Williams & Butcher, 1989). From these findings, the MMPI-A booklet was developed containing 478 items. In changing original MMPI wording from an adult perspective to more appropriate wording for the MMPI-A, the psychometric properties of the items were examined and found to be similar or improved from the MMPI items, with an increase in face validity and reduction in ambiguity (Williams, Ben-Porath & Halvern, 1991).

The MMPI-A (Butcher et al., 1992) was standardized exclusively on an adolescent population. It was developed to make the test more developmentally appropriate and to better represent the diversity of the United States population. Eight states were selected as sites for the normative study, including Minnesota, Ohio, California, Virginia, Pennsylvania, New York, North Carolina, and Washington. The goal of achieving ethnic heterogeneity and providing considerably more diversity than the normative samples for the original instrument guided the selection of states for the study. Approximately 2,500 subjects solicited through junior and senior high schools selected in each data collection site were tested in group sessions. In addition, subjects in the normative sample were administered a 16-item Biographical Information Form containing questions related to age, ethnicity, family characteristics, parental education and occupation, and academic history. Subjects also completed a 74-item Life Events Form that solicited information concerning the occurrences and effects of significant life events. Following the application of various exclusion criteria, the MMPI-A normative sample was reduced to 805 males and 815 females, with mean ages of 15.5 and 15.6 respectively. All subjects were between the ages of 14 through 18, inclusive. An additional sample of 225 13-year-old adolescents was collected in Norfolk, Virginia, and served as the basis for the MMPI-A norms for this age group (Archer, 1997; Butcher et al, 1992).

The ethnic distribution of the normative sample consisted of 76.2 percent White, 12.35 percent Black, 2.9 percent American Indian, 2.85 percent Asian, 2.1 percent Hispanics, 2.55 percent from “other” ethnic groups, and 1.05 percent failed to report an ethnic group. This ethnic distribution was deemed reasonably congruent with U.S.

Census data, with the exception of Hispanic groups, which were underrepresented in the normative sample (Archer, 1997; Butcher et al, 1992).

Information concerning the living situation of the normative subjects indicated that approximately 66 percent of the subjects reported living with both parents, and approximately 30 percent lived with a single biological parent. With reference to parental education, biographical data findings indicated that higher educational levels were overrepresented in the normative sample's parents compared to 1980 U.S. Census figures. Approximately 50 percent of the fathers and 40 percent of the mothers of normative subjects were reported to be college graduates or to have a postgraduate education, in comparison 20 percent of men and 13 percent of women reported similar educational levels in the 1980 census. Additionally, professional and managerial occupations were found more frequently among normative subjects' parents than unskilled laborers, homemakers, and unemployed individuals. The higher socioeconomic status and educational backgrounds of the normative subject's parents appears related to the data collection procedure of soliciting volunteers as subjects, which typically elicits greater participation from individuals and families with higher education and income levels (Butcher et al, 1992). This seems to question whether the normative sample is actually representative of any minority group.

In general, the item-level changes implemented for the final version of the MMPI-A included the removal of selected items related to religion (e.g., "I believe there is a God"), bodily functions (e.g., "I have diarrhea once a month or more") and sexual preferences (e.g., "I am very strongly attracted by members of my own sex"). Additionally, items were deleted which were deemed inappropriate to adolescent life

experiences (e.g., “Sometimes at elections I vote for men about whom I know very little”). In order to increase the relevance of the test for adolescents, items related to alcohol and drug use, family conflicts, identity problems, school/achievement difficulties, and eating disorders, were added (Newmark, 1996).

Cross-cultural Considerations in Assessment

To study psychopathology cross-culturally requires knowledge of the elements that make up a cultural group’s frame of reference and the mechanisms that underlie their social judgments. Behaviors that fall within the cultural frame of reference will be regarded as normal and will serve as markers for judgment. The farther away behaviors are from the cultural frame and from the judge’s own position, the more they will be regarded as increasingly pathological. Research conducted must be guided by the definition of normality as a “good fit” or congruence between the individual’s personality and cultural norms. Judgments about normality and abnormality must be made within the context of the cultural frame of reference (Millon, 1997). Following is a discussion of sources of potential confusion in testing across cultures.

Etic vs. Emic

The Etic vs. Emic Malinowski legal case (Dana, 1986) expressed that cultures must be understood in their own terms. Pike (1966), a linguist, coined the terms emic and etic to refer to understanding that is culture-specific or universal. Berry (1969) clarified the terms by explaining that an emic approach examines only one culture and studies behavior from within the system to discover structure-using criteria relative to internal characteristics of that culture while an etic approach examines and compares many

cultures from a position outside of the system. The analyst creates structure and criteria that are considered to be universal.

Psychologists have traditionally preferred an etic perspective in psychological testing that emphasizes universals among human beings by using examination and comparison of many cultures from a position outside those cultures. Unfortunately, an imposed etic has frequently been applied, one using the middle-class Anglo-American as the standard for comparison with other groups. For example, the original norms of the MMPI described a 35-year-old, white, rural, married, semi-skilled person with an eighth grade education (Dahlstrom, Welsh, & Dahlstrom, 1972). The norms for the MMPI-2 varied somewhat, however, the standard continues to be predominantly middle-class. The norms for the MMPI-A describe an adolescent male who is approximately fifteen years and four months old with a tenth grade education. He lives with both parents who have educations ranging from some college to graduate school and who work primarily in managerial or professional positions. If we only consider this standard, cultural differences will appear as statistical differences that describe a departure from normality (Dana, 1993). By way of contrast, an emic perspective is culture-specific and examines behavior from within a culture, using criteria relative to the internal characteristics of that culture.

An emic approach acknowledges that cultural groups must be understood on their own terms in order to provide accurate assessment (Dana, 1993). In today's society, many individuals remain rooted in their original culture while simultaneously enmeshed in the social and economic realities of the middle-class, predominantly Anglo-American culture. One resolution of this dilemma may be found in a multicultural stance that

involves education, openness, appreciation, and acceptance of cultural differences and they might effect test results.

Acculturation Versus Pluralism

A second problem area lies in the contrast of acculturation and pluralism as desirable goals for multicultural persons in American society. In the recent past, the melting pot ideal presumed that homogenization of different ethnic groups would produce a prototypical American. However, much of the strength contained in American character can be found in what is described as a "commitment of memory" in which people remember their historical sufferings and virtues in concert with their future aspirations, as a basis for meaning in their individual lives (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985). "Commitment of memory" forms the basis for cultural identity, which has become a source of strength for many members of minority groups who attempt to persevere with dignity in the face of overt discrimination and limited opportunity (Dana, 1993). Dana (1986) also noted that valid indicators of the level of acculturation include identity and attitude toward one's traditional culture. Acculturation is a moderator variable that affects assessment instruments whenever applied to persons who are culturally different from the population for which the instrument has been developed (Dana, 1986). The interpretations of data from existing etic instruments may be modified or qualified by the extent of acculturation. However, applications of independent acculturation scales to self-report tests have been rare (Hoffmann, Dana, & Bolton, 1985; Montgomery & Orozco, 1985; Uecker, Boutilier, & Richardson, 1980). Erik Erikson (1990) maintained that identity is located in the self or core of the individual

and that one's communal culture, self-esteem, and sense of affiliation and belongingness are deeply affected by the identity process.

Cultural pluralism accepts that individual differences are personal assets and attempts to maintain separate institutions for distinct social groups within a single political unit (Padilla & Keefe, 1984). The problem, however, is how to maintain essential ingredients of unique and historical identities and still participate fully as citizens in mainstream American life.

In a psychometric climate that minimizes group differences, an acceptance of general cultural differences can alert assessors to inadequacies in their norms and thereby modify or qualify interpretation. An understanding of the sources of potential confusion in test results is relevant not only to testing with multicultural clients today but also to the future development of test measurements.

Cultural Values and Experiences of American Indians

Historical Experiences

Over the years, American Indian tribes were consistently treated as conquered nations who either passively assimilated to Anglo-American society or were killed, relocated, isolated or otherwise mistreated (Trimble, 1988). Covington (1990) described the history of the American Indian as one of multiple losses that included displacement from their homeland, forcible removal of children from the family, destruction of community and family roles for men, and loss of language. The outcome of losing traditional culture has been unresolved grief, anger, pain, and loneliness among American Indian people (Covington, 1990). To understand the intensity of the conflict with Anglo-American society and the potential effects on personality and psychopathology that may

be observed in individuals, it is necessary to be aware of the many attempts to obliterate the cultural identity of American Indians (Dana, 1993). This has been accomplished directly by business, industry, and education or by federal government “improvement” programs and educational practices, which included residential boarding schools (Dana, 1993).

Individual Differences

In examining relevant literature, Trimble (1987) found that conceptual and methodological problems contributed to the so-called negative self-image of American Indians. He used a broad and culturally relevant definition of self that included esteem, acceptance of self, acceptance of others, and stability of self. Utilizing this enlarged definition of self, Trimble surveyed 791 respondents from 114 tribes in all geographic areas and found that respondents consistently perceived themselves in a moderately positive manner, not as alienated persons. Feelings of being externally controlled, with some hopelessness but without feelings of being powerless were also found.

Rotenberg and Cranwell (1989) as well as Trimble (1987) describe an extended self-concept among American Indian children that indicates an emphasis on family ties, traditional customs and beliefs, and moral worth. Examples of an extended self-concept include obligations to other human beings and to the Indian community, which helps to provide a continued group identity. In turn, a strong group identity increases the likelihood of prolonged individual survival in a mainstream culture that is increasingly less responsive to native persons (Dana, 1993).

Values

In spite of education, occupation in nontraditional jobs, and bicultural status, American Indian people have been successful in retaining a significant number of their cultural values (Dana, 1993). As a result of extensive literature reviews on American Indian values, Trimble (1981) and DuBray (1985) found that similarities across studies were greater than the differences. In spite of level of acculturation, they found a remarkable consistency and persistence of core values across tribes. However, differences in value orientations between tribes cannot be taken for granted.

Beliefs

Self-concept, in American Indian culture, is composed not only of mind and body but of spirit as well. Dana (1993) described the mind as the link between the body and the spirit; the spirit is expressed by the physical body and exists both before and after the body. The spirit world includes a supreme creator, lesser spirit beings, and also animal, rocks, and plants. The lesser spirit helpers serve as models or examples and provide guidance and assistance. They may appear to people in special states of awareness that are believed to be more real, more credible than ordinary visual perception. These states include dreams, intuitive perceptions, emotional responses to what remains unseen, and spirit or vision quests. As a group, American Indians hold reverence for the gifts of nature and see and interconnectedness of the past and present, spirit and flesh, man and nature (Dana, 1993).

The American Indian world-view of spirituality is so different from beliefs in the dominant society that it is often difficult to be perceived as credible to persons with a Eurocentric world-view. The American Indian world-view of spirituality does not include

a belief in a model of science that accepts physical monism but in one that can be extended in time, place, and composition. It does not view human beings as distinct entities, existing apart from nature with control over nature, but as simply a tiny part of a larger ecological unity (Dana, 1993).

Health and Illness

Health and illness are often viewed by American Indians as wellness and unwellness (Dana, 1993; Dana, 2000). Since the self is essentially tripartite, healing and worship, religion and medicine, or church and hospital may be fused and have similar connotations. While the practices of spirituality in the service of wellness may be tribe-specific, the nature of the cultural beliefs concerning health, in the sense of wellness, are pan-Indian (Dana, 1993; Dana 2000).

Wellness implies harmony in spirit, mind, and body. Unwellness, or disharmony, comes by either natural causes such as violations of sacred tribal taboos or unnatural causes such as witchcraft. Each individual is essentially responsible for his or her own wellness in the sense of having the power to create harmony or disharmony (Allen, 1998; Dana, 1993; Dana, 2000).

Services

In spite of severe problems of alcohol and drug abuse, anxiety, depression, cultural conflict, and suicide (Rhoades, Marshall, Attneave, Echo hawk, Bork, & Beiser, 1975) mental health services are often underutilized or not available for many American Indians (LaFromboise, 1988). In contrast to Anglo-American society where professionals emphasize impersonality, distance, and non-involvement with clients before, during, and after treatment, American Indian society values enduring involvement in the life of the

client and taking on somewhat of a guardian role as a condition for continuation of services. In addition to trust, identified human qualities such as respect, tolerance, acceptance of life and other people, family-orientation, cooperation, flexibility, and a sense of humor as displayed in behavior and sensed by the client, as features which influence whether or not services are acceptable over time or with the same provider (Dana, 1993).

The MMPI and American Indian People

A study done by Pollack and Shore (1980) examined MMPI results from 142 American Indians of several different geographical regions and cultural backgrounds. American Indians in their study scored consistently higher on the Infrequency (F), Depression, (D), Psychopathic Deviate (Pd), Paranoia (Pa), and Schizophrenia (Sc) scales. However, regardless of which of the scales was elevated or what profile the patient showed (i.e., 2-6-8 or 4-6-8) clinical evaluations and diagnoses by the Portland Area Indian Health Service, a branch of the U. S. Public Health Service, were essentially the same. Pollack and Shore feel cultural variables, even across differing Indian groups, may be sufficient to reduce the reliability with Indian people.

In a study of normal adult American Indians conducted by LaDue (1982), it was expected that significantly higher scores (i.e., one standard deviation or more above the mean of 50) would be found for her subjects on the Infrequency (F), Depression (D), Psychopathic Deviate (Pd), Paranoia (Pa), and Schizophrenia (Sc) scales as well as on the MacAndrew Alcoholism scale, based on an earlier study done on an Indian clinical population by Pollack and Shore in 1980. For both sexes, the expectations were fulfilled, with the exception of the Depression (D) scale. Additionally, males scored higher than

the norms on the Masculinity-Femininity (Mf) and Psychasthenia (Pt) scales, and both sexes did so on the Mania (Ma) scale. The measure of Indian traditionalism was significantly related to lower scores on the Hypomania (Ma) and Social Introversion (Si) and to higher scores on the MacAndrew scale. LaDue explored whether these more traditional subjects were, in fact, more likely to be alcohol abusers. Data from her biographical questionnaire, however, indicated that her subgroup of tradition-oriented American Indians showed they were less likely to be alcoholic. Her suggested explanation for elevations on the Mac Andrew scale lay with possibility that a religious or spiritual orientation may have led to endorsement of some items included in this scale. Endorsement of items such as, "My soul sometimes leaves my body" or "Evil spirits possess me at times" could contribute to elevations on this scale (LaDue, 1982; Dahlstrom, 1986). Although only three items on the 51-item MacAndrew scale are what are usually classed as "conventional" religious items (e.g., "I pray several times a week"), Dahlstrom (1986) identified an additional three items that might be seen as having spiritual meaning by some subjects (e.g., "I have had blank spells in which my activities were interrupted and I did not know what was going on around me").

Suzuki, Meller, & Ponterotto (1996) reported a study by Green that examined American Indian-White differences on the standard validity and clinical scale of the MMPI. It was here, for the first time that a clear pattern was established for normal American Indians to score higher on the clinical scales than their Caucasian counterparts. They did not, however, obtain higher scores on the Infrequency (F) scale. One study not included in Greene's reviews compared sixteen American Indian inpatient alcoholic

males to a white sample matched for age and marital status. No significant differences on any validity or clinical scale were found (Venn, 1988).

Several groups of Indian students have also been studied with the MMPI. One very early investigation by Arthur (1944) of twelfth-grade Indian students at a federal school in Minnesota was done during the period when the MMPI scales were still being developed. The Indian students were reported to score higher on early forms of scales 4 (Pd) and 2 (D) and lower on the predecessor of scale 1 (Hs) than did Minnesota college students.

Byrd (1966) examined the relation between MMPI scores and degree of Indian ancestry ("full-blooded," $\frac{3}{4}$, $\frac{1}{2}$, and $\frac{1}{4}$) in Indian school children and found that the more deviant patterns and the lowest achievement scores were found among those with the greatest degree of Indian ancestry. The full-blooded Indian adolescents showed greater feelings of rejection and alienation with depression and anxiety and had less ego strength than their mixed-blood contemporaries.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this chapter is to identify and discuss the participants, instrumentation, and procedure for data collection. In addition, a description of the proposed methods for data analysis is presented. Inclusion and exclusion criteria for the participants are addressed in conjunction with the validity of the individual profiles and demographic information obtained from the participant's individual file.

Participants

Three different participant groups were used, each consisting of a minimum of 100 male participants between the ages of 13 and 18. Participants were individuals who had been committed to the custody of the Lloyd. E. Rader Institute (Rader), a Juvenile Justice Detention Center located in Sand Springs, Oklahoma. Rader is a secure residential treatment facility for adolescents who have been adjudicated delinquent for a number of serious crimes that, if committed as adults would be considered felonies. These individuals were court ordered into state custody and placed at Rader for treatment and for the protection of society. The first participant group was comprised of 100 males identified as American Indian through documentation of CDIB card. The second participant group consisted of 100 males who were identified as Black by parental report. The third participant group consisted of 100 males who have been identified as White by parental report.

Demographic information, as reported in social histories and other facility records, was reviewed for each participant. Information collected included age, race,

crime(s) committed, verification of American Indian heritage by CDIB card, and confirmation of reading level through standardized intellectual and achievement testing.

The mean age for the American Indian and the Black group was 16 years and 1 month ($SD = 1$ year and 3 months), and 15 years and 9 months ($SD = 1$ year and 5 months) for the White group. The MMPI-A normative sample group had a mean age of 15 years and 4 months ($SD = 1$ year and 1 month) (Butcher et al., 1992). The mean reading level (by grade) for the American Indian group was 8.24 ($SD = 1.595$), 7.8 ($SD = 1.055$) for the Black group, and 8.8 ($SD = 1.750$) for the White group.

Of the American Indian group, 72 % had a drug or alcohol problem and 51 % had a crime against a person (26 % had a crime against a person and property and 15 % had a crime against property alone). Of the Black group, 70 % had a drug or alcohol problem and 53 % had a crime against person and property (23 % against a person, 11 % against property, and 10 % against sex and property). Of the White group, 55 % had a drug or alcohol problem and 36 % had a crime against a person (24 % had a sex crime, 23 % had a crime against person and property, and 11 % had a crime against property alone).

Instrumentation

The Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A) was utilized for this study. The MMPI-A contains 478 items. It has 10 primary scales, 7 validity scales and 52 subscales that are presented on three separate profile sheets for primary scales, content scales, and supplementary scales. In order to preserve the continuity of this instrument with the original test, the standard validity indicators of the Cannot Say Scale (?), the Lie Scale (L), the Infrequency Scale (F, F₁, and F₂) and the Defensiveness Scale (K) of the original MMPI were retained in the MMPI-A.

Additionally, two new validity indicators were provided on both the MMPI-A and the MMPI-2.

The VRIN Scale measures variable response inconsistency and the TRIN Scale measures true response inconsistency. The purpose of the VRIN and TRIN is to complement the traditional Lie (L), Infrequency (F) and Defensiveness (K) scales by indicating a tendency for the individual to respond in an inconsistent or contradictory manner. Other modifications were made at the item level. They include deletion of 58 basic scale items, primarily from the Infrequency (F), Masculinity-Femininity (Mf), and the Social Introversion (Si) scales. The original Infrequency Scale (F) underwent considerable revision because it was found to be inappropriate for adolescents, as it reflected frequent elevations for adolescents without external evidence of significant psychopathology. The Scales Masculinity-Femininity (Mf) and Social Introversion (Si) scales were shortened to reduce the overall length of the test instrument (Newmark, 1996).

Procedure

The collection of data was conducted through the use of archival material gathered from the Lloyd E. Rader Institute, a Juvenile Justice Detention Center located in Sands Springs, Oklahoma. The MMPI-A is routinely administered and scored as part of the standard facility procedure to all new residents of the center. Valid protocols of American Indian, Black, and White males between 14 and 18 years of age were collected for the time period from March 1994 through May 2000. Approval for this study followed agency procedure. No participant names were recorded on demographic data sheets or participant answer sheets. Each participant was assigned a number for

identification. The first step in the data collection was to compile a list of residents who were administered the MMPI-A during the period of the study. Center records were reviewed for this information and a list, with identification numbers only, was recorded. The MMPI-A answer sheets for residents whose records were used in the study were collected. For accuracy, the experimenter reentered and rescored all valid protocols (via a computerized MMPI-A scoring program). Standardized procedures for administration and scoring set forth in the MMPI-A manual were followed (Butcher et al. 1992). All records of the participants were screened by the examiner to ensure that an adequate reading level existed. Participants were eliminated from the study if they possessed a reading level below the 7th grade. Verification of adequate reading level was obtained from educational records from the school system located within the Lloyd. E. Rader Institute. The school system utilizes the Wechsler Individual Achievement Test (WIAT) and the Woodcock-Johnson, Revised (WJ-R) for assessment. Reading levels were obtained from these test scores. An MMPI-A was considered valid if the following criteria were met: VRIN and TRIN scale T scores greater than or equal to 80, Infrequency (F) scale score equal to or greater than 90, and the Infrequency (F₁ and F₂) subscale T scores equal to or greater than 80, Lie (L) scale T score equal to or greater than 65, and Cannot Say (?) greater than 10 (Archer, 1997; Butcher et al., 1992).

CHAPTER FOUR

RESULTS

Introduction

The purpose of this study was to examine differences between male American Indian adolescent offenders and their Black and White counterparts, in their tendency to demonstrate elevations in scale scores and subscale scores as measured by the MMPI-A. Data for age, reading level, and crimes committed were used to achieve the best possible match between the groups in order to control for between-group differences that could be attributed to these differences.

Statistical Analysis

An initial analysis of descriptive statistics was conducted to observe within-group and between-group mean score differences for each of the primary MMPI-A scales, the MMPI-A subscales, and the demographic data. In addition, descriptive statistics provided valuable information relative to group membership (homogeneity).

One-way ANOVAs were performed to identify significant differences between the American Indian group and their Black and White counterparts. The sets of ANOVA statistics were performed on the MPI-A primary scales (Model 1) as well as on the MMPI-A subscales (Model 2).

Finally, discriminant analysis models were utilized to examine how the groups were different. Primarily, discriminant analysis procedures were implemented to describe major differences among groups (Descriptive Discriminant Analysis), whereas a multiple analysis of variance (MANOVA) provides information on whether or not groups are statistically similar at various levels of significance. More importantly; however,

discriminant analysis procedures can be used to classify subjects into groups (Predictive Discriminant Analysis) based upon measurements obtained from an analysis of group scores (Stevens, 1996). Although the discriminant analysis procedure is a special case of a MANOVA, the MANOVA statistic cannot provide either the descriptive or predictive features found in discriminant analysis. According to Stevens (1996) discriminant analysis procedures are implemented to reduce the between-group associations (multiple analysis of variance; MANOVA) into additive components, via an uncorrelated linear combination of the original variables. This process yields discriminant functions statistically derived to be orthogonal (uncorrelated).

Two discriminant analysis models were performed. In the first model, the analysis was performed to determine if the primary scale scores of the MMPI-A (i.e., the F, D, Pd, Pa, and Sc scale scores) can separate the racial groups (i.e., American Indian, Black, and White). More specifically, the analysis was performed to determine if these MMPI-A primary scale scores for the American Indian adolescent male group significantly differed from those of the Black adolescent male and the White adolescent male groups. In this model, race served as the independent variable (factor) and MMPI-A primary scale scores served as the dependent variable. This analysis was conducted to test the following null hypotheses:

Ho: There will be no significant scale score difference between American Indian adolescent offenders and their Black and White counterparts on the primary MMPI-A scale scores (F, D, Pd, Pa, and Sc).

Ho: Racial group membership cannot be predicted based upon the MMPI-A primary scales.

In the second model, the discriminant analysis was conducted to determine if the 21 MMPI-A subscales [i.e., Social Alienation (Sc₁), Emotional Alienation (Sc₂), Lack of Ego Mastery, Cognitive (Sc₃), Lack of Ego Mastery, Conative (Sc₄), Lack of Ego Mastery, Defective Inhibition (Sc₅), Bizarre Sensory Experiences (Sc₆), Subjective Depression (D₁), Psychomotor Retardation (D₂), Physical Malfunctioning (D₃), Mental Dullness (D₄), Brooding (D₅), Infrequent Items 1 (F₁), Infrequent Items 2 (F₂), Persecutory (Pd₁), Poignancy (Pd₂), Naivete (Pd₃), Familial Discord (Pd₄), Authority Conflict (Pd₅), Social Imperturbability (Pa₁), Social Alienation (Pa₂), and Self Alienation (Pa₃)] could differentiate between the three racial groups (i.e., American Indian, Black, and White). Again, the discriminant analysis was performed to determine if the American Indian offender's MMPI-A subscale scores would be able to distinguish them from their Black and White counterparts. In this analysis, racial group was the independent variable (factor) and the 21 MMPI-A subscale scores were used as the predictor variable.

This analysis was conducted to test the following null hypotheses:

Ho: There will be no significant scale score difference between American Indian adolescent offenders and their Black and White counterparts on the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆).

Ho: Racial group membership cannot be predicted based upon the MMPI-A subscales.

These two discriminant analysis models provided several pieces of pertinent information: a) the proportion of variance in the discriminant scores not explained by group membership (Wilk's Lambda; Λ), b) correlations between each variable and the

discriminant function, which can be used to grasp the psychological character of the discriminant function, and c) the group centroids (weighted group means), which represent an average weighted discriminant score for each criterion group. The group centroids were plotted in standardized form in order to depict the geometric distance between each group's directly mirrored effect size (i.e., standard deviation unit of measurement). Computations were calculated using the SPSS[®] for Windows[®], version 9.0 software.

Descriptive Statistics

The mean and standard deviation for each predictor variable (e.g., MMPI-A primary Scale scores), by criterion group (e.g., racial/cultural group), are depicted in Table 1 (for Model 1) and in Tables 2, 3, 4, and 5 (for Model 2). Within the first model, the MMPI-A primary scale scores for the Black male adolescent offenders were moderately higher than their American Indian and White counterparts; however, on the four remaining scales the scores were very similar. For the second model, there was more variability across the MMPI-A subscales. For example, the scores for the Black male adolescent offenders were generally lower on the Authority Conflict (Pd₂), Social Alienation (Pd₄), and Lack of Ego Mastery-Conative (Sc₄) scales, while White male adolescent offenders were higher on the Familial Discord (Pd₁) and lower on the Psychomotor Retardation (D₂) scales. American Indians scored higher on Infrequent Items (F₁), Subjective Depression (D₁), and Self-alienation (Pd₄) and lower on Lack of Ego Mastery-Cognitive (Sc₃), Lack of ego Mastery-Defective (Sc₅), and Bizarre Sensory Experience (Sc₆) than their Black and White counterparts.

Table 1
MMPI-A Primary Scales Means and Standard Deviations (Model 1)

Racial/Cultural Group	MMPI-A Primary Scales	N	M	SD
American Indian	Infrequency (F)	100	53.08	7.58
	Depression (D)	100	56.55	8.58
	Psychopathic Deviate (Pd)	100	63.90	9.65
	Paranoia (Pa)	100	55.38	11.08
	Schizophrenia (Sc)	100	50.69	11.63
White	Infrequency (F)	100	52.61	8.78
	Depression (D)	100	54.77	10.37
	Psychopathic Deviate (Pd)	100	64.83	10.81
	Paranoia (Pa)	100	56.14	11.92
	Schizophrenia (Sc)	100	53.01	12.89
Black	Infrequency (F)	100	52.38	8.93
	Depression (D)	100	55.59	8.15
	Psychopathic Deviate (Pd)	100	60.70	9.69
	Paranoia (Pa)	100	56.19	10.94
	Schizophrenia (Sc)	100	50.82	10.54
Total	Infrequency (F)	300	52.69	8.43
	Depression (D)	300	55.64	9.08
	Psychopathic Deviate (Pd)	300	63.14	10.19
	Paranoia (Pa)	300	55.90	11.29
	Schizophrenia (Sc)	300	51.51	11.73

Table 2
MMPI-A Subscales Means and Standard Deviations (Model 2)

Racial/Cultural Group	MMPI-A Subscales	N	M	SD
American Indian	Infrequent Items 1 (F ₁)	100	55.48	8.33
	Infrequent Items 2 (F ₂)	100	50.98	7.96
	Subjective Depression (D ₁)	100	55.46	9.29
	Psychomotor Retardation (D ₂)	100	52.70	10.16
	Physical Malfunctioning (D ₃)	100	58.86	9.90
	Mental Dullness (D ₄)	100	52.74	10.75
	Brooding (D ₅)	100	54.22	9.80
	Familial Discord (Pd ₁)	100	51.24	10.05
	Authority Conflict (Pd ₂)	100	63.04	7.45
	Social Imperturbability (Pd ₃)	100	49.58	10.48
	Social Alienation (Pd ₄)	100	59.96	10.29
	Self Alienation (Pd ₅)	100	61.59	9.81
	Persecutory (Pa ₁)	100	57.84	10.66
	Poignancy (Pa ₂)	100	48.41	10.62
	Naivete (Pa ₃)	100	46.44	10.92
	Social Alienation (Sc ₁)	100	50.87	11.70
	Emotional Alienation (Sc ₂)	100	50.28	8.71
	Lack of Ego Mastery-Cognitive (Sc ₃)	100	53.46	11.54
	Lack of Ego Mastery-Conative (Sc ₄)	100	50.13	10.04
	Lack of Ego Mastery-Defective (Sc ₅)	100	48.56	11.48
	Bizarre Sensory Experience (Sc ₆)	100	49.71	11.56

Table 3
MMPI-A Subscales Means and Standard Deviations (Model 2)

Racial/Cultural Group	MMPI-A Subscales	N	M	SD
White	Infrequent Items 1 (F ₁)	100	54.70	8.82
	Infrequent Items 2 (F ₂)	100	51.06	9.83
	Subjective Depression (D ₁)	100	55.16	11.54
	Psychomotor Retardation (D ₂)	100	49.89	9.28
	Physical Malfunctioning (D ₃)	100	57.74	9.50
	Mental Dullness (D ₄)	100	52.74	12.51
	Brooding (D ₅)	100	53.59	11.94
	Familial Discord (Pd ₁)	100	54.80	9.67
	Authority Conflict (Pd ₂)	100	63.80	7.48
	Social Imperturbability (Pd ₃)	100	49.93	10.24
	Social Alienation (Pd ₄)	100	57.83	10.65
	Self Alienation (Pd ₅)	100	60.63	9.67
	Persecutory (Pa ₁)	100	56.88	10.92
	Poignancy (Pa ₂)	100	51.53	13.10
	Naivete (Pa ₃)	100	48.02	10.33
	Social Alienation (Sc ₁)	100	52.61	12.22
	Emotional Alienation (Sc ₂)	100	51.91	10.17
	Lack of Ego Mastery-Cognitive (Sc ₃)	100	53.40	11.73
	Lack of Ego Mastery-Conative (Sc ₄)	100	52.72	10.67
	Lack of Ego Mastery-Defective (Sc ₅)	100	50.81	10.54
Bizarre Sensory Experience (Sc ₆)	100	49.88	10.47	

Table 4
MMPI-A Subscales Means and Standard Deviations (Model 2)

Racial/Cultural Group	MMPI-A Subscales	N	M	SD
Black	Infrequent Items 1 (F ₁)	100	53.77	8.78
	Infrequent Items 2 (F ₂)	100	51.14	9.88
	Subjective Depression (D ₁)	100	54.34	8.94
	Psychomotor Retardation (D ₂)	100	53.20	9.65
	Physical Malfunctioning (D ₃)	100	58.93	10.03
	Mental Dullness (D ₄)	100	49.63	9.21
	Brooding (D ₅)	100	53.00	10.71
	Familial Discord (Pd ₁)	100	51.05	9.39
	Authority Conflict (Pd ₂)	100	60.71	8.86
	Social Imperturbability (Pd ₃)	100	52.74	10.03
	Social Alienation (Pd ₄)	100	56.05	9.93
	Self Alienation (Pd ₅)	100	59.22	9.01
	Persecutory (Pa ₁)	100	58.02	11.56
	Poignancy (Pa ₂)	100	49.11	10.12
	Naivete (Pa ₃)	100	48.28	9.47
	Social Alienation (Sc ₁)	100	52.20	10.92
	Emotional Alienation (Sc ₂)	100	49.58	9.69
	Lack of Ego Mastery-Cognitive (Sc ₃)	100	52.46	10.00
	Lack of Ego Mastery-Conative (Sc ₄)	100	48.75	9.14
	Lack of Ego Mastery-Defective (Sc ₅)	100	50.68	11.31
Bizarre Sensory Experience (Sc ₆)	100	51.21	10.44	

Table 5
MMPI-A Subscales Means and Standard Deviations (Model 2)

Racial/Cultural Group	MMPI-A Subscales	N	M	SD
Total	Infrequent Items 1 (F ₁)	300	54.65	8.65
	Infrequent Items 2 (F ₂)	300	51.06	9.23
	Subjective Depression (D ₁)	300	54.99	9.97
	Psychomotor Retardation (D ₂)	300	51.93	9.78
	Physical Malfunctioning (D ₃)	300	58.51	9.80
	Mental Dullness (D ₄)	300	51.70	10.97
	Brooding (D ₅)	300	53.60	10.83
	Familial Discord (Pd ₁)	300	52.36	9.83
	Authority Conflict (Pd ₂)	300	62.52	8.04
	Social Imperturbability (Pd ₃)	300	50.75	10.32
	Social Alienation (Pd ₄)	300	57.96	10.38
	Self Alienation (Pd ₅)	300	60.48	9.52
	Persecutory (Pa ₁)	300	57.58	11.03
	Poignancy (Pa ₂)	300	49.68	11.40
	Naivete (Pa ₃)	300	47.58	10.26
	Social Alienation (Sc ₁)	300	51.89	11.61
	Emotional Alienation (Sc ₂)	300	50.59	9.56
	Lack of Ego Mastery-Cognitive (Sc ₃)	300	53.11	11.09
	Lack of Ego Mastery-Conative (Sc ₄)	300	50.53	10.07
	Lack of Ego Mastery-Defective (Sc ₅)	300	50.02	11.13
Bizarre Sensory Experience (Sc ₆)	300	50.27	10.82	

Univariate Analysis

A univariate analysis was used to test the first null hypothesis [there will be no significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on primary MMPI-A scales (F, D, Pd, Pa, and Sc) and there will be no significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on MMPI-A subscales (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆)]. Two sets of a one-way ANOVA statistic were performed with race (American Indian and Black, and American Indian and White) as the factor and the MMPI-A primary scales [Infrequency (F), Depression (D), Psychopathic Deviate (Pd), Paranoia (Pa), and Schizophrenia (Sc)] as the dependent variables for Model 1. Another two sets of one-way ANOVA statistics were performed with race (American Indian and Black, and American

Indian and White) as the factor and the MMPI-A primary scales [Infrequent Items 1 (F₁), Infrequent Items 2 (F₂), Subjective Depression (D₁), Psychomotor Retardation (D₂), Physical Malfunctioning (D₃), Mental Dullness (D₄), Brooding (D₅), Familial Discord (Pd₁), Authority Conflict (Pd₂), Social Imperturbability (Pd₃), Social Alienation (Pd₄), Self Alienation (Pd₅), Persecutory (Pa₁), Poignancy (Pa₂), Naivete (Pa₃), Social Alienation (Sc₁), Emotional Alienation (Sc₂), Lack of Ego Mastery-Cognitive (Sc₃), Lack of Ego Mastery-Conative (Sc₄), Lack of Ego Mastery-Defective (Sc₅), Bizarre Sensory Experience (Sc₆)] as the dependent variables for Model 2.

The results of the one-way ANOVA (Model 1) are presented in Table 6, which depicts a significant difference between the American Indian group and the White group on the Psychopathic Deviate MMPI-A Primary Scale.

Table 6
One-way ANOVA (Model 1)

Racial/Cultural Group	MMPI-A Primary Scales	F (1, 198)	Significance
American Indian and Black	Infrequency (F)	.357	.551
	Depression (D)	.658	.418
	Psychopathic Deviate (Pd)	5.472	.020 *
	Paranoia (Pa)	.270	.604
	Schizophrenia (Sc)	.007	.934
American Indian and White	Infrequency (F)	.164	.686
	Depression (D)	1.749	.188
	Psychopathic Deviate (Pd)	.412	.522
	Paranoia (Pa)	.218	.641
	Schizophrenia (Sc)	1.786	.183

* ANOVA analysis performed at the .05 level of significance ($p < .05$)

The results of the one-way ANOVA (Model 2) are presented in Table 7, which depicts four significant differences (Mental Dullness, Authority Conflict, Social Imperturbability, and Social Alienation) were found between the American Indian group and the Black group on the MMPI-A subscales. Additionally, two significant differences

(Psychomotor Retardation and Familial Discord) were found between the American Indian group and the Black group on the MMPI-A subscales.

Table 7
One-way ANOVA (Model 2)

Racial/Cultural Group	MMPI-A Subscales	F (1, 198)	Significance
American Indian and Black	Infrequent Items 1 (F ₁)	1.996	.159
	Infrequent Items 2 (F ₂)	.016	.900
	Subjective Depression (D ₁)	.755	.386
	Psychomotor Retardation (D ₂)	.127	.722
	Physical Malfunctioning (D ₃)	.002	.960
	Mental Dullness (D ₄)	4.826	.029 *
	Brooding (D ₅)	.706	.402
	Familial Discord (Pd ₁)	.019	.890
	Authority Conflict (Pd ₂)	4.054	.045 *
	Social Imperturbability (Pd ₃)	4.744	.031 *
	Social Alienation (Pd ₄)	7.475	.007 *
	Self Alienation (Pd ₅)	3.165	.077
	Persecutory (Pa ₁)	.013	.909
	Poignancy (Pa ₂)	.228	.634
	Naivete (Pa ₃)	1.621	.205
	Social Alienation (Sc ₁)	.691	.407
	Emotional Alienation (Sc ₂)	.289	.592
	Lack of Ego Mastery-Cognitive (Sc ₃)	.429	.513
	Lack of Ego Mastery-Conative (Sc ₄)	1.033	.311
	Lack of Ego Mastery-Defective (Sc ₅)	1.730	.190
Bizarre Sensory Experience (Sc ₆)	.928	.337	
American Indian and White	Infrequent Items 1 (F ₁)	.413	.521
	Infrequent Items 2 (F ₂)	.004	.950
	Subjective Depression (D ₁)	.041	.840
	Psychomotor Retardation (D ₂)	4.174	.042 *
	Physical Malfunctioning (D ₃)	.666	.415
	Mental Dullness (D ₄)	.000	1.000
	Brooding (D ₅)	.166	.684
	Familial Discord (Pd ₁)	6.514	.011 *
	Authority Conflict (Pd ₂)	.519	.472
	Social Imperturbability (Pd ₃)	.057	.811
	Social Alienation (Pd ₄)	1.974	.162
	Self Alienation (Pd ₅)	.486	.487
	Persecutory (Pa ₁)	.396	.530
	Poignancy (Pa ₂)	3.423	.066
	Naivete (Pa ₃)	1.104	.295
	Social Alienation (Sc ₁)	1.058	.305
	Emotional Alienation (Sc ₂)	1.482	.225
	Lack of Ego Mastery-Cognitive (Sc ₃)	.001	.971
	Lack of Ego Mastery-Conative (Sc ₄)	3.125	.079
	Lack of Ego Mastery-Defective (Sc ₅)	2.084	.150
Bizarre Sensory Experience (Sc ₆)	.012	.913	

* ANOVA analysis performed at the .05 level of significance ($p < .05$)

It is important to note the various differences that have been shown to be statistically significant (as identified by and asterisk) are related back to a comparison of MMPI-A primary and subscale mean scores in Table 8.

Table 8
One-way ANOVA and Mean Score Comparisons (Model 1 and Model 2)

MMPI-A Primary and Subscales	Mean Scores		Sig.	Mean Scores		Sig.
	Black	Indian		White	Indian	
Psychopathic Deviate (Pd)	60.70	63.90	.020 *	64.83	63.90	.522
Mental Dullness (D ₄)	49.63	52.74	.029 *	52.74	52.74	1.000
Authority Conflict (Pd ₂)	60.71	63.04	.045 *	63.80	63.04	.472
Social Imperturbability (Pd ₃)	52.74	49.58	.031 *	49.93	49.58	.811
Social Alienation (Pd ₄)	56.05	59.96	.007 *	57.88	59.96	.162
Psychomotor Retardation (D ₂)	53.20	52.70	.722	49.89	52.70	.042 *
Familial Discord (Pd ₁)	51.05	51.24	.890	54.80	51.24	.011 *

From Table 8, it can be seen that on the Psychopathic Deviate (Pd) scale (from the MMPI-A primary scale; Model 1) that the American Indian group scored significantly higher than their Black counterparts. Likewise, the American Indian group scored significantly higher on the Mental Dullness (D₄), Authority Conflict (Pd₂), and Social Alienation (Pd₄) MMPI-A subscales and scored significantly lower on the Social Imperturbability (Pd₃) MMPI-A subscales than did their Black counterparts. In addition, Table 8 also shows that the American Indian group scored significantly higher on the Psychomotor Retardation (D₂) MMPI-A subscale and scored significantly lower on the Familial Discord (Pd₁) MMPI-A subscale than did their White counterparts.

Descriptive Discriminant Analysis

A descriptive discriminant analysis was used to test the second null hypothesis [

Two sets of ANOVAs were performed (for both Model 1 and Model 2) to examine the capacity of the individual predictor variables to separate the American Indian male adolescent offender group from their Black and White counterparts.

Although statistical significance was found for some predictor variables, the ANOVA

models (Model 1 and Model 2) fall short of providing enough information to either accept or reject the null hypotheses. As expected, a discriminant analysis statistic was performed on both models in order to provide the information necessary to either accept or reject the null hypotheses.

The first model (discriminant analysis according to the five MMPI-A primary scales) generated a range of Wilks' Lambda values from .99 (F Scale) to .97 [Psychopathic Deviant Scale (Pd)], which represents a range from 1% to 3% of the variance explained. Only one value was statistically significant, with $F_{(2, 297)} = 4.63$, $p < .01$, for the Psychopathic Deviant (Pd) scale. This result indicated that when considered individually, only one personality variable from the MMPI-A primary scales significantly contributed to the racial group separation.

The second model (discriminant analysis according to the 21 MMPI-A subscales) generated a range of Wilks' Lambda values from .99 [Subjective Depression (D_2)] to .96 [Familial Discord (Pd_1)], which represents a range from 1% to 4% of the variance unexplained. Five values were statistically significant, with $F_{(2, 297)}$ ranging from 3.38, $p < .03$, for Psychomotor Retardation (D_2) to 4.73, $p < .009$, for Familial Discord (Pd_1), Authority Conflict (Pd_2), Social Alienation (Pd_4), and Lack of Ego Mastery-Conative (Sc_4). Unlike the first model, these results indicate that when considered individually, five personality variables from the MMPI-A subscales significantly contributed to racial group separation. It is interesting that only three of these significantly contributing MMPI-A subscales (Familial Discord, Authority Conflict, and Social Alienation) from the Model 2 discriminant analysis are derivatives of the only significantly contributing MMPI-A primary scale (Psychopathic Deviant; Pd) from the Model 1 discriminant

analysis. In Table 9, the Wilks' Lambda (Λ), F-statistic (F) and significance level for each of the 21 MMPI-A subscales are shown.

Table 9
Test of Equality of Group Means

MMPI-A Subscales	Wilks' Λ	F	df ₁	df ₂	Sig.
Infrequent Items 1 (F ₁)	.990	1.560	2	297	.212
Infrequent Items 2 (F ₂)	1.000	.007	2	297	.993
Subjective Depression (D ₁)	.998	.337	2	297	.714
Psychomotor Retardation (D ₂)	.978	3.384	2	297	.035 *
Physical Malfunctioning (D ₃)	.997	.463	2	297	.630
Mental Dullness (D ₄)	.982	2.711	2	297	.068
Brooding (D ₅)	.998	.316	2	297	.729
Familial Discord (Pd ₁)	.969	4.734	2	297	.009 *
Authority Conflict (Pd ₂)	.973	4.098	2	297	.018 *
Social Imperturbability (Pd ₃)	.981	2.855	2	297	.059
Social Alienation (Pd ₄)	.976	3.612	2	297	.028 *
Self Alienation (Pd ₅)	.990	1.573	2	297	.209
Persecutory (Pa ₁)	.998	.307	2	297	.736
Poignancy (Pa ₂)	.986	2.079	2	297	.127
Naivete (Pa ₃)	.994	.942	2	297	.391
Social Alienation (Sc ₁)	.996	.612	2	297	.543
Emotional Alienation (Sc ₂)	.990	1.569	2	297	.210
Lack of Ego Mastery-Cognitive (Sc ₃)	.998	.255	2	297	.775
Lack of Ego Mastery-Conative (Sc ₄)	.973	4.087	2	297	.018 *
Lack of Ego Mastery-Defective (Sc ₅)	.991	1.290	2	297	.277
Bizarre Sensory Experience (Sc ₆)	.996	.575	2	297	.564

* Discriminant Analysis performed at the .05 level of significance ($p < .05$)

Discriminant Content and Dimensionality for Model 1.

The results of discriminant function analysis according to the MMPI-A primary scales (Model 1) are presented in Table 10. Only one statistically significant discriminant function was found and it yielded a Wilks' Lambda of .93, which indicates that approximately 62% of variance between the three racial groups in this sample was explained by differences in participants' personality profiles. That is, this discriminant function accounted for 62% of the explained variance.

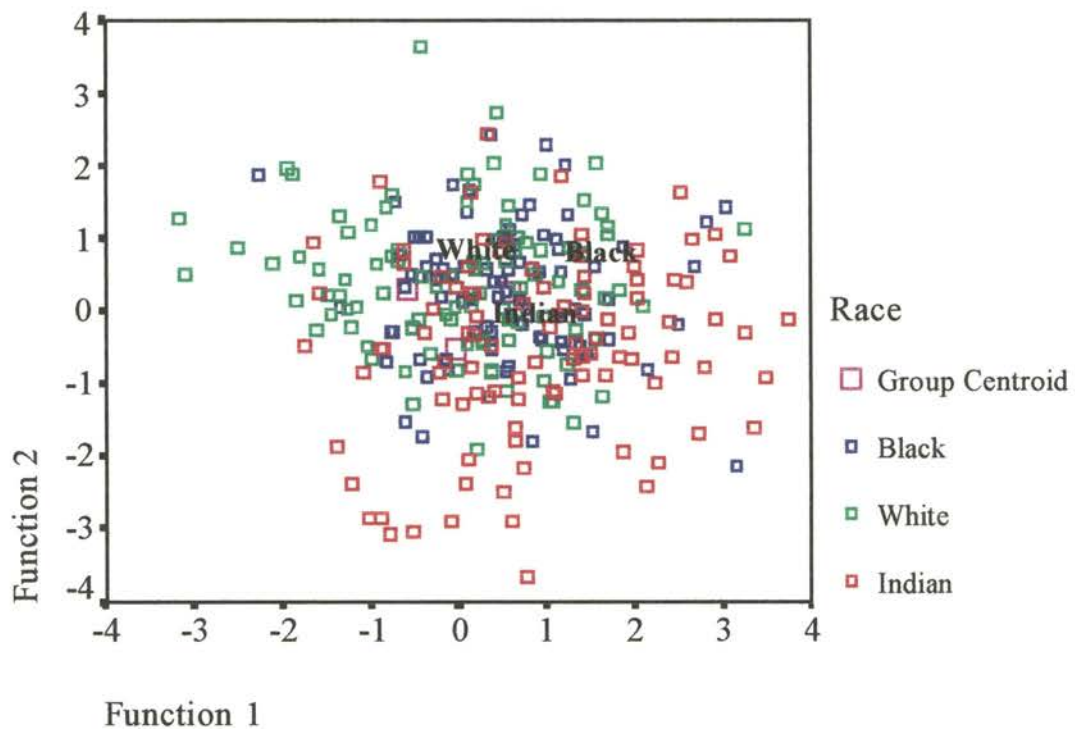
Table 10
Discriminant Function Results From the MMPI-A Primary Scales

Function	Eigenvalues					<i>p</i>
	Eigenvalue	% of Variance	Canonical Correlation	After Function Removed	Wilks' Lambda	
				0	.930	< .05
1	.048	62.0	.215	1	.971	

To illustrate the amount of group separation achieved by this discriminant analysis, Figure 1 depicts plots of the bivariate group centroids (the average discriminant scores assigned to members of each group) in two-dimensional discriminant space.

Figure 1

Discriminant Functions (MMPI-A Subscales)



The structure matrix presented on Table 11 depicts correlation between each predictor variable and the standardized discriminant functions. According to Betz (1987), these correlations are used to interpret function content. The pattern found among group

centroids and within the structure matrix makes it difficult to provide a substantive interpretation of Function 1. Examination of Function 1 revealed that it marginally separated participants who were American Indian (small negative centroid) from both the White and Black participants (small negative centroid). The table displays the pooled within-group correlations between discriminating variables and standardized canonical discriminant functions. The variables are ordered by absolute size of correlation within the respective function. The pattern found among the group centroids and within the structure matrix make possible the substantive interpretation of Function 1 as a Psychopathic Deviate-Schizophrenic function (Pd-Sc).

Table 11
Structure Matrix (MMPI-A Primary Scales)

	Function 1	Function 2
Psychopathic Deviant Scale (Pd)	.676 *	.552
Schizophrenia Scale (Sc)	.395 *	-.162
Depression Scale (D)	-.246	.345 *
F Scale	.010	.200 *
Paranoia Scale (Pa)	.031	-.187 *

* Largest absolute correlation between each variable and any discriminant function.

Discriminant Content and Dimensionality for Model 2.

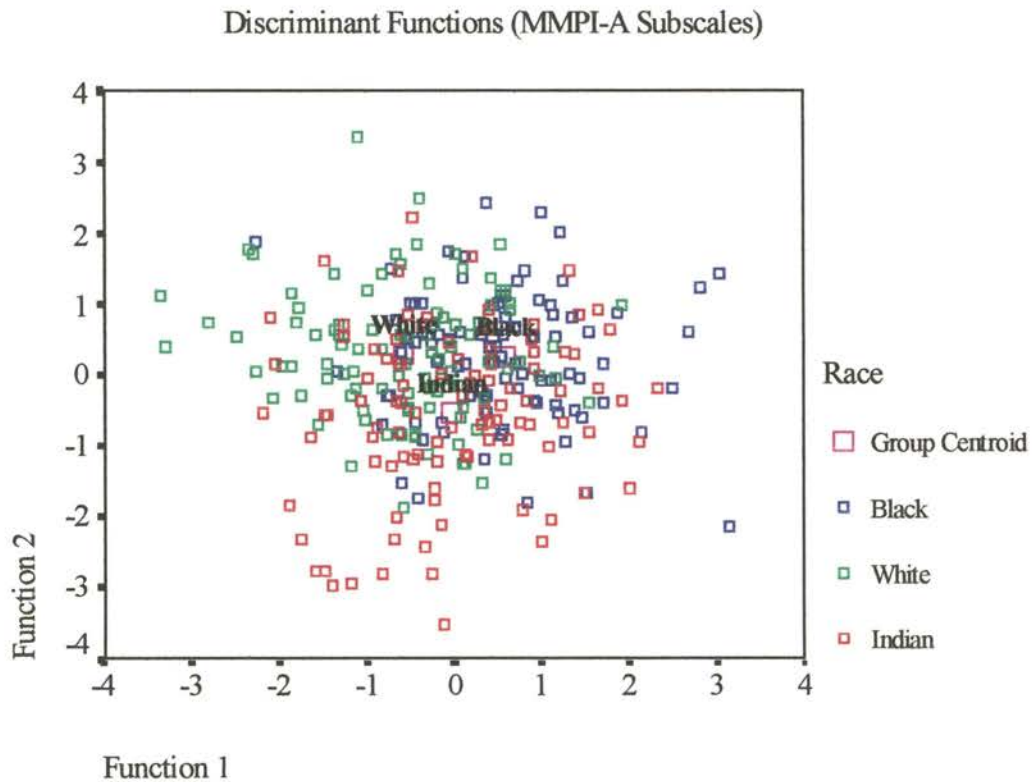
According to the discriminant analysis completed using the MMPI-A subscales, two significant discriminant functions were found, with a Wilks' Lambda of .73 that indicates approximately 27% of the variance between racial groups in this sample was unexplained by differences in the participants' personality profiles. Detailed results of the personality discriminant function analysis are presented in Table 12. The first function accounted for 65% of the explainable variance; the second function accounted for the remaining 35 % of the explainable variance.

Table 12
Discriminant Function Results From the MMPI-A Subscales

Eigenvalues						
Function	Eigenvalue	% of Variance	Canonical Correlation	After Function Removed	Wilks' Lambda	<i>p</i>
				0	.720	< .0001
1	.226	66	.43	1	.890	< .05
2	.119	34	.32			

To illustrate the amount of group separation achieved by this discriminant analysis, Figure 2 depicts plots of the bivariate group centroids (the average discriminant scores assigned to members of each group) in two-dimensional discriminant space.

Figure 2



The discriminant function structure for Model 2 (MMPI-A subscales) is presented in Table 13.

Table 13
Structure Matrix

	Function	
	1	2
Lack of Ego Mastery - Conative	-.345 *	.054
Familial Discord	-.341 *	.199
Authority Conflict	-.328 *	-.149
Psychomotor Retardation	.299 *	-.132
Mental Dullness	-.237 *	-.199
Emotional Alienation	-.212 *	.048
Physical Malfunctioning	.107 *	-.061
Persecutory	.090 *	-.039
Lack of Ego Mastery - Cognitive	-.070 *	-.066
Social Alienation	-.137	-.382 *
Infrequent Items 1	-.019	-.276 *
Lack of Ego Mastery - Defective	-.021	.250 *
Social Imperturbability	.226	.235 *
Self Alienation	-.118	-.233 *
Naivete	.013	.215 *
Poignancy	-.192	.202 *
Social Alienation	-.037	.167 *
Brooding	-.042	-.112 *
Bizarre Sensory Experience	.101	.106 *
Subjective Depression	-.067	-.096 *
Infrequent Items 2	.007	.017 *

* Largest absolute correlation between each variable and any discriminant function.

In contrast, Function 2 is much more difficult to provide a similar construct because the diverse representation of the scales that fell on this function provided poor loading values. Examination of Function 1 revealed that it marginally separated participants whom were American Indian (moderate negative centroid) from both the White and Black participants (small positive centroid). The table displays the pooled within-group correlations between discriminating variables and standardized canonical discriminant functions. The variables are ordered by absolute size of correlation within the respective function.

Predictive Discriminant Analysis

In viewing the data thus far, descriptive discriminant analysis has provided some information on the differences found between the three groups. A predictive discriminant analysis yields additional information pertaining to the classification of subjects into one of three groups based upon a set of measurements or mean vectors (group centroids).

Table 14 depicts the discriminant functions for each of the three groups based upon the distance (Mahalanobis distance) between mean vectors and the group centroid vectors.

Table 14
Functions at Group Centroids

Race	Function	
	1	2
American Indian	.003601	-.520
White	-.599	.236
Black	.563	.284

From the analysis of the discriminant functions at the group centroids, a classification table (Table 15) depicts the correct classification “hit-rate” for each of the three groups.

Table 15
Classification Results ^{b, c}
Predicted Group Membership

		Race	Indian	White	Black	Total
		Original	Count	Indian	44	27
White	22			59	19	100
Black	21			18	61	100
%	Indian		44.0	27.0	29.0	100.0
	White		22.0	59.0	19.0	100.0
	Black	21.0	18.0	61.0	100.0	
Cross-validated ^a	Count	Indian	37	28	35	100
		White	28	47	25	100
		Black	28	26	46	100
	%	Indian	37.0	28.0	35.0	100.0
		White	28.0	47.0	25.0	100.0
		Black	28.0	26.0	46.0	100.0

- a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
- b. 54.7% of original grouped cases correctly classified.
- c. 43.3% of cross-validated grouped cases correctly classified.

Summary

Chapter Four presented a summary of the statistical analysis used to examine differences between American Indian adolescent male offenders and their Black and White counterparts as measured by the MMPI-A primary scale scores and subscale scores. Data for age, gender, reading level, and type of crime committed were used to make the best possible match between racial groups in order to control for differences between groups that could be attributed to these variables.

This study was formulated on two related null hypotheses, with each null hypothesis having two components: (1) the MMPI-A Primary Scale Scores (F, D, Pd, Pa, and Sc), and (2) the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆). A comparison of each hypothesis with the results of the study are presented next.

The first null hypothesis stated that there would not be a significant scale score differences between American Indian adolescent offenders and their Black and White counterparts on the primary MMPI-A scales and on the MMPI-A subscales. Results from this study indicated that American Indians were significantly different from their Black counterparts on the MMPI-A primary scales. Likewise, American Indians were significantly different on three MMPI-A subscales from their Black counterparts and significantly different on two MMPI-A subscales from their White counterparts. These results were somewhat different than originally predicted (e.g., a greater difference in the Psychopathic Deviate scales between American Indians and both the Black and White groups was predicted). Overall; however, the results appeared to be congruent with the

initial predictions of primary and subscale score differences that could be attributed to cultural differences. This study failed to reject the null hypothesis.

The second null hypothesis stated that Racial/Cultural group membership cannot be predicted based upon the MMPI-A primary scale scores (F, D, Pd, Pa, and Sc) or the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆). Results from this study indicated that MMPI-A primary and subscale scores could not accurately predict group membership. Correct classification occurred 54.7 percent of the time, while the Black group was correctly classified at 61 percent, the White group at 59 percent, and the American Indian group at 44 percent. However, cross validation significantly reduced the classification hit rates (43 % for the total, 46 % for Blacks, 47 % for Whites and 37 % for American Indians); therefore, this study did not seem to provide adequate classification.

CHAPTER FIVE

CONCLUSIONS, DISCUSSION, AND RECOMENDATIONS

Introduction

This chapter provides a summary of the study, and an interpretation of the results. The implications of the statistical findings are discussed and recommendations for future research are suggested.

Summary of the Study

The purpose of this study was to explore differences in MMPI-A primary and subscale scores between male American Indian adolescent offenders and their Black and White counterparts. More specifically, it has been hypothesized by a multitude of researchers from various disciplines that an individual's culture has an influence upon his or her personality, coping methods, and general worldview.

In this study, MMPI-A scale scores were explored between American Indian male adolescent offenders and their Black and White counterparts. The MMPI-A was examined here, as it is a well-used instrument that contains several questions that might tap into an individual's spiritual beliefs and indigenous culture. It was hypothesized that responses to these questions by individuals from American Indian cultures would possibly classify him or her into an incorrect (Type II error) diagnostic category (in this case, the Psychopathic Deviant or Schizophrenia diagnostic category).

Participants in this study included 300 adolescent males from a Southwestern state, who ranged in age from 14 – 18 ($M = 16.07$; $SD = 1.32$). Demographic variables, for the most part, were similarly consistent across the cultural groups. The instrument used in this study was the MMPI-A true/false answer sheet. Responses from this answer

sheet were assessed and scored utilizing the MMPI-A computer scoring software from the Psychological Assessment Resources (PAR) Company. Individual profiles deemed invalid by the investigator were not used in this study.

Demographic data was collected and MMPI-A primary scale scores and subscale scores were obtained for each participant. Mean scores were obtained for each demographic variable and each MMPI-A primary scale and subscale score by cultural group. A series of one-way ANOVAs was conducted to explore differences between the demographic data and the MMPI-A primary scale and subscale scores. Finally, a discriminant analysis of MMPI-A primary scale and subscale scores was performed.

The purpose of this study was to explore if American Indian adolescent male offenders were significantly different from their Black and White counterparts on the MMPI-A primary scales and subscale scores. Results indicated that indeed a number of significant differences exists between American Indians and their Black and White counterparts on MMPI-A primary and subscales scores.

Statistical Findings

As presented in Chapter Four, the null hypotheses and research questions were tested using a one-way ANOVA and a discriminant analysis procedure, with the significance level set at .05 to protect against family-wise error. Two ANOVA models and two discriminant analysis models were performed on the data (Model 1 – MMPI-A primary scales and Model 2 – MMPI-A subscales). Both Model 1 and Model 2 provided statistically significant differences across cultural groups resulting in a rejection of the first set of null hypotheses.

The ANOVA procedure resulted in the following differences: (a) the American Indian group scored significantly higher than their Black counterparts on the Psychopathic Deviate (Pd) scale (Model 1), (b) the American Indian group scored significantly higher on the Mental Dullness (D₄), Authority Conflict (Pd₂), and Social Alienation (Pd₄) MMPI-A subscales and scored significantly lower on the Social Imperturbability (Pd₃) MMPI-A subscales than did their Black counterparts, and (c) the American Indian group scored significantly higher on the Psychomotor Retardation (D₂) MMPI-A subscale and scored significantly lower on the Familial Discord (Pd₁) MMPI-A subscale than did their White counterparts.

The discriminant analysis procedure resulted in the observation of the following differences: (a) the American Indian cultural group differed from the Black and White cultural groups on the linear combination of the Psychopathic Deviate (Pd) and the Schizophrenia (Sc) MMPI-A primary scale, (b) the American Indian cultural group differed from the Black and White cultural groups on the linear combination of the Lack of Ego Mastery, Cognitive (Sc₄), Familial Discord (Pd₄), Authority Conflict (Pd₅), Psychomotor Retardation (D₂), Mental Dullness (D₄), Emotional Alienation (Sc₂), Physical Malfunctioning (D₃), Persecutory (Pd₁), and Lack of Ego Mastery, Cognitive (Sc₃) MMPI-A subscales, and (c) that MMPI-A primary and subscale scores could not accurately predict group membership.

Conclusions

This study was designed to examine a sample of male adolescent American Indian offenders and their Black and White counterparts. Based on the statistical findings within

the parameters and limitations of this study, the following general conclusions are suggested.

1. The American Indian group scored significantly higher than their Black counterparts on the Psychopathic Deviate (Pd) scale.
2. The American Indian group scored significantly higher on the Mental Dullness (D₄), Authority Conflict (Pd₂), and Social Alienation (Pd₄) MMPI-A subscales and scored significantly lower on the Social Imperturbability (Pd₃) MMPI-A subscales than did their Black counterparts.
3. The American Indian group scored significantly higher on the Psychomotor Retardation (D₂) MMPI-A subscale and scored significantly lower on the Familial Discord (Pd₁) MMPI-A subscale than did their White counterparts.
4. The American Indian cultural group scored significantly higher than their Black and White counterparts on a linear combination of two MMPI-A primary scales [Psychopathic Deviate (Pd) and Schizophrenia (Sc)].
5. The American Indian cultural group scored significantly higher than their Black and White counterparts on a linear combination of nine MMPI-A subscales [Lack of Ego Mastery, Conative (Sc₄), Familial Discord (Pd₄), Authority Conflict (Pd₅), Psychomotor Retardation (D₂), Mental Dullness (D₄), Emotional Alienation (Sc₂), Physical Malfunctioning (D₃), Persecutory (Pd₁), and Lack of Ego Mastery, Cognitive (Sc₃) MMPI-A subscales].
6. Cultural group membership (i.e., American Indian, Black, or White) cannot be accurately predicted from the MMPI-A primary scales or MMPI-A subscales.

Discussion

Over the years, the MMPI has proven to be a reliable and valid measure of personality (Archer, Marush, Imhof, & Piotrowski, 1991; Butcher, 1985; Butcher, 1992). Although it was the most frequently used objective personality inventory with adolescents, the MMPI is packaged with some major disadvantages (Nichols, Padilla, & Gomez-Maqueo, 2000; Toyer & Weed, 1998). A survey conducted by Archer et al. (1991) suggested that forty-nine percent of psychologist (who administered the MMPI) believed the instrument took too long to administer to adolescents, eighteen percent considered the reading level too high, and seventeen percent complained of outdated or inappropriate language. The introduction of the MMPI-A was an attempt to resolve some of these disadvantages found in the MMPI when used with an adolescent population. However, the MMPI-A maintained the same theoretical construct as its predecessor, which has an additional set of caveats when used with individuals from a minority culture. More specifically, this is pertinent with individuals from minority groups that have suffered a long history of oppression (with tremendous losses to person and property), economic disadvantages, and social prejudice and discrimination. American Indians, as presented throughout the first two chapters of this study, are representative of a minority group that has undergone a long history of oppression and the utilization of the MMPI-A with this population appears to provide some cultural bias.

Malgady (1996) cites the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; 1994) as a reflection of an increased recognition upon the importance of considering an individual's culture in rendering a psychiatric diagnosis. Since the delivery of mental health services and the integrity of

mental health research rest upon an accurate diagnosis of psychiatric disorders and valid measures of psychological symptoms, it seems appropriate to consider the multifaceted impact of an individual's culture in making these determinations. Vasquez (1982) elucidates the point further by highlighting the fact that a cultural minority client may be implicitly compared to the clinician's generalized perception of psychopathology, relative to the DSM-IV criteria. That is, without consideration to the client's culture or the impact of his or her culture on personality, coping strategies, or interaction with the environment.

Some of the earlier research on the MMPI with an adolescent population showed that the Psychopathic Deviate (Pd) scale was able to reliably differentiate between delinquent and non-delinquent girls (Clark, 1952; Newmark, 1996; Panton, 1958, 1959, 1962; Toyer & Weed, 1998). Use of the Psychopathic Deviate (Pd) scale to differentiate between delinquent and non-delinquent adolescents has continued in the interpretation of MMPI-A scores (Butcher et al., 1992; Dahlstrom et al., 1972; Peña, Megargee, & Brody, 1996).

Although the results depict significant differences among the cultural groups and it has been asserted that that these differences are influenced by an individual's culture, it is also necessary to identify alternative possibilities that might also have influenced the significant differences that were found. Since this study involved the test scores from a specific and homogeneous population (incarcerated adolescents) it is conceivable that the utilization of a group that possesses significant pathology might yield confounding properties relative to differences in pathology (diagnostic differences), comorbidity (dual diagnosis, etc.), chemical dependency, and a host of other interpersonal and environmental problems. In addition, differences among the group demographics (age,

type of crime, and the use of drugs or alcohol) might also have adversely impacted the results. Screening measures were implemented to “match” the groups along these variables and other variables (e.g., crime, age, education, etc.) to minimize the effect of any confounding variable. The MMPI-A, as a general measure of personality, was designed to “normalize” the effects of confounding variables. While these groups were matched as closely as possible, it appears the White group was more sex-oriented in offenses, was slightly younger, and tended to have fewer drug/alcohol problems. The higher number of sex offenses among the White group may reflect a true difference in the groups. However, it is more likely a reflection of the fact that the White population is much larger than either of the other groups in this geographical area and, in particular, at this facility. In addition, crimes committed by the American Indian youths are often handled by the tribes rather than the local legal jurisdictions. In addition, minorities may be less likely to report sex offenses to the local authorities or pursue them through the legal system. Many minority cultures have long been known to use substances and to admit to using substances from a young age. However, the trend for White adolescents to use substances and acknowledge this use has increased in recent years.

In this study, group membership could not be accurately predicted using the MMPI-A primary and subscale scores. Several factors may have contributed to the poor classification hit rate. First, those participants who self-identified as American Indian but did not possess CDIB cards were classified as either Black or White. Therefore, the Black and White groups were likely also to contain individuals with some degree of Indian blood. Another confounding issue was the numerous overlapping of items across scales on the MMPI-A. This made it difficult to predict group membership from elevations on

the different scales and subscales. It appears that the MMPI-A may not be a sensitive enough instrument to address the subtle cultural differences and accurately classify the different groups. Finally, the participants in this study had differing motivations in answering the questions. Some may have wanted to present themselves as looking more pathological for status reasons. Others may have tried to present themselves in a good light in hopes of limiting their length of detention and treatment. Still others, in this case American Indians, may have been motivated to give the answers that they have learned are considered “normal” by the dominant culture rather than taking the chance on being considered “odd or different.” American Indians frequently modify their behavior to fit in with the dominant culture but this does not necessarily change their beliefs.

In examining the results of this study it seems that the original motivation for conducting this research (e.g., minorities—specifically American Indians—might appear more pathological simply because of their beliefs, values, and traditions, which are inherently embedded in their culture) has been shown. Although differences might be attributed to any number of confounding variables, it is believed that the differences lie within the cultural aspects that comprise the different groups. In reviewing the numerous personality measures, the MMPI-A stands out as a significant advancement for measuring personality traits among adolescents; however, the inherent nature of the overlapping scales contained within the MMPI-A are insufficient in differentiating the cultural aspects of individuals. This gap in the construct of the MMPI-A personality assessment can inadvertently misclassify an individual because of cultural beliefs, values, or traditions. More specifically, the MMPI-A subscales were designed to capture a variety of problematic personality traits under the rubric of the majority culture. This process

discounts cultural differences found within minority groups. For example, American Indians typically tend to be reticent and reluctant to initiate any activity when working with individuals from other cultures. This behavior is viewed as a component of the MMPI-A subscale called Mental Dullness. Historically, the American Indian people have not had a pleasant experience in working with the dominant culture. The innumerable acts of subjugation by the dominant culture have placed a heavy burden on the psychological composition of American Indians. Therefore they tend to be more reserved and suspicious of interactions with any other culture. The dominant culture might view this as being guarded, defensive, and possibly paranoid. In regards to affect and expression of emotion, American Indians may have difficulty in expressing emotions (specifically, anger, depression, and anxiety) when compared to their White counterparts. In fact, many American Indians differ on the “literal” meaning of psychological terms and have problems understanding the separation of mind and body.

The results of this study suggest that culture does impact scores on the MMPI-A. primary scales and subscales. Elevations reflecting personality traits common among the American Indian cultural group are evident. Elevations are reflective of individuals who have problems with authority, who have some cultural beliefs that might be considered pathological by the dominate culture, who experience social and emotional alienation, who lack interest and motivation or feel hopeless, and who are suspicious and feel persecuted. Scores indicate that these individuals often feel misunderstood by others and have difficulty taking the lead when interacting with others. However, they tend to have fewer quarrels than others within their own family and look to the family as a source of strength and knowledge.

It is hoped that demonstrating differences among cultural groups (based upon the MMPI-A scores) will elevate the need for a more accurate measures of personality that take into account the intrinsic aspects of an individual's culture.

Findings

The American Indian group scores on the Psychopathic Deviate (Pd) scale were significantly higher than the Black group scores. A significant difference was not found between the American Indian group and the White group on this MMPI-A primary scale. In addition, the differences in MMPI-A subscale scores between the American Indian group and the Black group [i.e., American Indians scored higher on Mental Dullness (D₄), Authority Conflict (Pd₂), and Social Alienation (Pd₄) and scored lower on the Social Imperturbability (Pd₃) scale] appears to revolve around central core issues contained in the Psychopathic Deviate (Pd) scale. These results were surprising in that it was predicted that the American Indian group would score higher on this scale than both the Black and White groups. These results may not reflect so much on this particular study, as it may describe the homogeneity of adolescent offenders as a group who possibly feel isolated, persecuted, and unloved. The amalgamation of these characteristics might possibly be expressed in the behavioral processes that resulted in adolescent incarceration. Consequently, the characteristics that underpin the Psychopathic Deviate (Pd) scale appear very similar to the characteristics of a long-suffering minority group and a population of male adolescent offenders.

In regards to comparisons made between the American Indian group and the White group, [i.e., American Indians scored significantly higher on the Psychomotor Retardation (D₂) and scored significantly lower on Familial Discord (Pd₁) than their

White counterparts], the results appear consistent with current literature. Butcher et al., identified feelings of shame and guilt, compounded by self-critical and introspective traits, as characteristic elements of the Psychomotor Retardation (D_2) subscale. As an oppressed minority culture, it would appear that the American Indian group would have naturally occurring elevations on this subscale when compared to the dominant culture. In contrast, the Familial Discord (Pd_1) subscale provides some insight into the cultural values, heritage, and beliefs of the American Indian people. Although the Familial Discord (Pd_1) subscale is contained in the Psychopathic Deviate (Pd) primary scale, it is more of a moderating variable to help determine family problems related to delinquent behavior. As stated earlier, the American Indian people have been described as placing emphasis on family ties, traditional customs and beliefs, and moral worth (Rotenberg & Cranwell, 1989; Trimble, 1987). Therefore, it seemed natural to predict a lower score on the Familial Discord (Pd_1) subscale even though a higher score was predicated on the Psychopathic Deviate (Pd) primary scale. These results were not surprising and actually seemed to confirm the influence of culture on personality testing.

Results from the discriminant analysis of the MMPI-A primary scales indicated a significant difference between the American Indian group and their Black and White counterparts based upon a linear combination of two MMPI-A primary scales [Psychopathic Deviate (Pd) and Schizophrenia (Sc)]. Based upon group scores (group centroids), the American Indians in this study differed significantly from their Black and White counterparts along a combination of all items contained in the Psychopathic Deviate (Pd) and Schizophrenia (Sc) MMPI-A primary scales. These two scales are most frequently associated with more severe psychopathology (Butcher et al., 1992) and have

been used in combination to differentiate between juvenile offenders and non-offenders (Dahlstrom, 1997). Therefore, the American Indian group might easily be seen as being more delinquent or posing more pathology than is actually true (Type II error).

The twenty-one subscale scores differed individually across the racial/cultural groups and nine subscale scores [Lack of Ego Mastery, Conative (Sc₄), Familial Discord (Pd₄), Authority Conflict (Pd₅), Psychomotor Retardation (D₂), Mental Dullness (D₄), Emotional Alienation (Sc₂), Physical Malfunctioning (D₃), Persecutory (Pd₁), and Lack of Ego Mastery, Cognitive (Sc₃) MMPI-A subscales] contributed to a linear combination that provided a statistically significant difference. A discriminant analysis of these subscale scores (in total) did not provide a “clean” linear combination of scores to help determine a substantive interpretation of the differences. Again, these results were not surprising and they appear to support the findings contained in the literature that argue for the necessity of cultural consideration with regard to personality testing.

In considering the results of the predictive discriminant analysis, it is important to consider both the “hit rate” for correct classification and the cost of misclassification (Stephens, 1996). The analysis resulted in a correct classification 54.7 percent of the time in total, while the Black group was correctly classified at 61 percent, the White group at 59 percent, and the American Indian group at 44 percent. More importantly, it is necessary to avoid substantive misclassification and/or a misleading prediction. To protect against these classification caveats, the cross-validation results were used for interpretation. This resulted in a correct classification for the total at 43 percent, 46 percent for Blacks, 47 percent for Whites, and 37 percent for American Indians. The probabilities of committing either a Type I or Type II error in classification were too

great to consider these results as adequate for predicting a correct racial/cultural group classification. The results of this study indicate a failure to reject the null hypothesis [i.e., Cultural group membership cannot be predicted based upon the MMPI-A primary scale scores (F, D, Pd, Pa, and Sc) or the MMPI-A subscale scores (F₁, F₂, D₁, D₂, D₃, D₄, D₅, Pd₁, Pd₂, Pd₃, Pd₄, Pd₅, Pa₁, Pa₂, Pa₃, Sc₁, Sc₂, Sc₃, Sc₄, Sc₅, and Sc₆)]. This was considered surprising, as it was believed that the differences between racial/cultural groups would be large enough to make an adequate classification prediction.

It does appear that culture (race) has a significant influence on the results of the MMPI-A personality test; however, these differences were not significant enough to predict group membership (with any certainty and without committing a significant number of Type I and Type II errors). There is a difference between interpreting an individual's MMPI-A scale score result and making a classification prediction based upon MMPI-A group scores. Findings from this study suggests that American Indians might score higher on the Psychopathic Deviate (Pd) and the Schizophrenia (Sc) scales than their Black and White counterparts merely through differences in culture and not in true psychopathology. Therefore, American Indians might appear to be suffering from more pathology than is actually the case. In addition, practitioners that simply conduct a cursory review of an individual's MMPI-A score might deem them more pathological as opposed to them being more similar to average juvenile delinquents. These differences suggest that certain questions on the MMPI-A contain culturally sensitive language, that when interpreted without recognition of the individual's culture, could lead to an overestimation (Type II Error) of pathology.

Malgady (2000) offers an interesting insight pertaining to cross-cultural or multicultural research and the null hypothesis. He asserts that the null hypothesis is never true (i.e., there is no difference between groups) and that all ethnic groups are different. Cohen (1998), a noted statistician, argues that estimations of Type II errors (i.e., concluding no bias when in fact there is bias) occur half the time in social science research. He also agrees with Malgady in that all groups are different; the question remains whether the difference is substantial to mental health research.

Recommendations for Future Research

As current research continues to explore the utility of the MMPI-A personality inventory and the literature continues to grow and develop with an eye towards multiculturalism, psychologists who use this instrument should carefully consider an individual's culture when interpreting MMPI-A test results. It does not appear that there is a great need for the development of unique tests or separate scoring scales for a variety of minority cultures. However, it does appear that what is needed is for the practitioner to be familiar with and sensitive to the culture of the examinee and explore the item contents of any MMPI-A primary scale and/or subscale score that is in question. According to Lopez (2000), culturally informed assessment is not an event, it is a process, a way of thinking critically about the role of culture and human behavior.

Further studies utilizing the MMPI-A should focus on comparing incarcerated adolescents with a sample of non-offenders from the same geographical area and similar demographics. Similar studies of this type could be replicated for various geographical areas across the United States. This will help clarify if scale score elevations are a result of culture, true psychopathology, or merely the adolescent's stage of development.

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APPENDICES

APPENDIX A
DEMOGRAPHIC DATA SHEET

Demographic Data Sheet

Identification Number: _____

The following information was collected from the individual file of the participants.

1. Age in months when administered the MMPI-A: _____
2. Racial/Ethnic Identity:
 - a) White
 - b) Black
 - c) American Indian
3. Prior history of drug or alcohol problem: (i.e., prior treatment, part of crime)
 - a) Yes
 - b) No
4. Reading level: (i.e., from the WIAT, WJ-R, etc.)
Grade: _____
5. Crime committed:
 - a) Person
 - b) Property
 - c) Sex
 - d) Person & Property
 - e) Sex & Property

Date Data Collected: _____

By: _____

APPENDIX B

OKLAHOMA STATE UNIVERSITY INSTITUTIONAL
REVIEW BOARD: HUMAN SUBJECTS REVIEW

**OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR AN SUBJECTS RESEARCH**

Date:

IRB#:

Proposal Title: MMPI-A SCALE SCORES: DIFFERENCES BETWEEN
INCARCERATED AMERICAN INDIAN ADOLESCENT MALE OFFENDERS AND
THEIR BLACK AND WHITE COUNTERPARTS

Principal Investigator(s): Marie Miville, Ph.D., Shirley M. Beall, M.S.

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved with Provisions

APPROVAL STSTATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW
BOARD AT NEXT MEETING.

APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER
WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE
SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS TO APPROVED
PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reason for Deferral or
Disapproval are as follows:

Signature: _____
Chair of Institutional Review Board

Date:

VITA²

Shirley Mullins Beall

Candidate for the Degree of

Doctor of Philosophy

Dissertation: MMPI-A SCALE SCORES: DIFFERENCES BETWEEN
INCARCERATED AMERICAN INDIAN ADOLESCENT MALE
OFFENDERS AND THEIR BLACK AND WHITE COUNTERPARTS

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in Leflore, Mississippi, January 19, 1950, the daughter of Homer and Frances Kathleen Mullins.

Education: Graduated from Flora High School, Flora, Mississippi, May 1968; received Bachelor of Arts Degree from Belhaven College 1993; received Master of Science Degree from Northeast Louisiana University 1995. Completed requirements for the Doctor of Philosophy Degree at Oklahoma State University in December, 2000.

Experience: Denver Health Medical Center (Correctional), American Psychological Association approved predoctoral internship 8/99-8/00. Provided assessment as well as individual and group therapy to adolescents and adults at Denver City and County Jails. L. E. Rader Center, Sand Springs, OK., 7/98-11/98, provided assessment as well as individual and group counseling for juvenile delinquents. Doctoral Practica: Osage Nation Counseling Center, Pawhuska, Oklahoma and Psychological Services Center, Oklahoma State University, Stillwater, Oklahoma, provided assessment as well as individual and group outpatient therapy for adolescents and adults.

Employment: Mississippi State Hospital, Whitfield, MS., 6/95-8/96, provided assessment for competency and sanity evaluations of adolescents and adults. Master's internship: Mississippi State Hospital, Whitfield, MS., 1/95-6/95, provided assessment for competency and sanity evaluations of adolescents and adults.

Professional Memberships: American Psychological Association, Society for Personality Assessment, International Rorschach Society, and Prescribing Psychologist Register.