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THE EFFECT OF READING LEVEL ON MMPI VALIDITY USING  
AN ORAL ADMINISTRATION PROCEDURE WITH  
A YOUTHFUL OFFENDER POPULATION

A Thesis  
by  
WILLIAM C. HARTLEY

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William C. Hartley

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APPROVED BY:

James H. Long  
James D. Long  
Chairperson, Thesis Committee

James R. Deni  
James R. Deni  
Member, Thesis Committee

Fred A. Wilson  
Fred A. Wilson  
Member, Thesis Committee

Joyce G. Crouch  
Joyce G. Crouch  
Chairperson, Department of Psychology

Joyce V. Lawrence  
Joyce V. Lawrence  
Dean of Graduate Studies and Research

ABSTRACT

THE EFFECT OF READING LEVEL ON MMPI VALIDITY USING  
AN ORAL ADMINISTRATION PROCEDURE WITH A YOUTHFUL  
OFFENDER POPULATION. (July 1985)

William C. Hartley

M. S., Central Missouri State University

M. A., Appalachian State University

Thesis Chairperson: James D. Long

The effectiveness of an oral administration procedure for the Minnesota Multiphasic Personality Inventory (MMPI) was evaluated to determine if the oral administration procedure would compensate for the severe reading deficiencies of youthful offenders under the age of 18. Data were obtained from 240 illiterate, semiliterate and literate male youthful offenders incarcerated in the North Carolina Department of Correction. Previous research had suggested that an oral administration procedure would significantly improve MMPI validity rates of reading deficient adults. Similar results were obtained in the present study with youthful offenders. Significant decreases in MMPI validity rates were found only among illiterate youthful offenders who scored at the lowest level of reading as

measured by the Wide Range Achievement Test. A race effect at the lowest level of reading was suggested by the data. The study also suggested that the oral administration of the MMPI may be most useful when administered to semiliterate and illiterate youthful offenders under the age of 18.

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## INTRODUCTION

The Minnesota Multiphasic Personality Inventory (MMPI), according to Gregory and Smeltzer (1977), is the most widely used psychometric instrument for personality appraisal and research. A considerable body of research in correctional settings has emerged during the last 10 years demonstrating the usefulness of the MMPI as a major contributor to inmate classification and management. The Federal Bureau of Prisons as well as numerous state prison systems routinely administer the MMPI to inmates as part of its diagnostic test battery. MMPI data obtained from inmates contribute to various classification decisions such as the determination of appropriate levels of supervision and security, the type of treatment programs which may be appropriate, and the planning for timely release from prison to parole.

The MMPI is a "paper and pencil" test which requires the person completing the inventory to read 566 items and respond by indicating whether the item is true or false for that person. The requirement that the MMPI items be read by the subject presents a significant problem in the prison setting because



prison inmates frequently show evidence of serious reading deficiencies. The present researcher estimates that in North Carolina as many as 50% of the inmate population would have significant difficulty successfully completing an MMPI administration due to reading impairment. A procedure which may compensate for an inmate's reading deficiencies involves an oral administration of the MMPI items using a tape recording. This compensatory administration procedure has been shown to be successful with reading deficient nonincarcerated adults. If as successful with reading impaired prison inmates, the compensatory administration procedure would provide the opportunity to expand MMPI testing of the inmate population and, thereby, significantly increase the MMPI data base for research in correctional settings.

#### MMPI Research in the Correctional Setting

Much of the recent research on the MMPI in the correctional setting has emerged from the work of Megargee (1977a, 1977b) and Megargee and associates (Meyer & Megargee, 1977; Megargee & Dorhout, 1977; Megargee & Bohn, 1977) who have developed and refined an inmate classification system based on inmate MMPI profiles. MMPI data obtained from male youthful offenders age 18 through 27 incarcerated at the Federal Correctional Institute at Tallahassee, Florida, were

subjected to analysis by Meyer and Megargee resulting in the identification of nine distinct MMPI subgroups. Megargee and Dorhout refined and revised the data analysis leading to the identification of a 10th subgroup. Megargee and Dorhout with the addition of the 10th subgroup were able to classify 96% of the sample of youthful offenders into the 10 subgroups. Major interest has been focused on the Meyer-Megargee typology in the hope that group membership would have important implications for treatment programming, custody and control requirements, parole planning, and recidivism studies.

Booth and Howell (1980) were able to classify successfully 88% of a sample of 641 MMPI profiles obtained from adult inmates incarcerated at the Utah State Prison. The relationships between Meyer-Megargee MMPI subgroup assignment and intelligence test scores, educational achievement levels, history of previous psychiatric hospitalizations, age at first arrest, number of incarcerations, and number of prison rule violations were significant at the .05 level. Booth and Howell (1980) noted that their study extends the data base for the Meyer-Megargee MMPI classification system beyond the federal prison system and suggests that it may be equally efficacious when used with state prison inmates.

Megargee (1984) analyzed MMPI data obtained from 1,164 male youthful offenders admitted to the Federal Correctional Institute at Tallahassee, Florida, and compared the MMPI data with inmate responses to an adjective checklist and also with responses to an adjective checklist completed by psychologists following clinical interviews with each of the inmate subjects. Subjects within subgroups were found to rate themselves and be rated by the rater-psychologists similarly, while significant differences in rating were noted between groups. According to Megargee the results of this study provided evidence for differences among the 10 subgroups of the MMPI based classification system both in terms of how inmates view themselves and how they are described by trained clinicians.

Louscher, Hosford, and Moss (1983) investigated the efficacy of the Meyer-Megargee MMPI based classification system to predict institutional adjustment of federal inmates. The authors were also interested in comparing subgroup assignment to the variables of age, race, and type of offense. The results of this study based on MMPI data obtained from 520 adult federal inmates incarcerated in a maximum security federal penitentiary were inconsistent with the findings of several previous studies. Although all subjects selected for this study were assigned to one of the 10 subgroups

based on the criteria established by Megargee (1977a), no significant differences between the subgroups were found regarding subjects' age, race, or type of offense. Subjects in one of the subgroups were found to have committed significantly more aggressive institutional rule violations than any of the other subgroups. According to Louscher et al. (1983), however, no significant difference between the subgroups was found on the variable of institutional adjustment. The authors noted that subjects for this study were assigned to the federal penitentiary because each had been identified as requiring maximum security supervision compared to subjects of previous studies who were assigned to medium security institutions. Louscher et al. were able to assign the subjects to all of the 10 subgroups based solely on MMPI profile data. They reported that initially 1,074 inmates were tested with the MMPI using a "standard group administration of the MMPI (supplemented by tapes--individual oral presentation--for reading impaired and Spanish speaking inmates)" (p. 272). A total of 278 MMPI protocols were not included in the sample due to inmate's refusal to complete MMPI testing or due to invalid protocols. The authors did not report educational achievement levels of subject's with invalid protocols.

Simmons, Johnson, Gouvier, and Muzyczka (1981) were able to classify 92% of 181 MMPI profiles using the Meyer-Megargee MMPI based classification system. These profiles were obtained from federal inmates during the summer of 1979 at a minimum custody federal correctional institute in Memphis, Tennessee. The purpose of their study was to investigate the test-retest stability of assignment to the Meyer-Megargee MMPI based subgroups. Simmons and his colleagues found that only 14 of 50 subjects selected for retesting produced MMPI profiles which retained them in the same subgroup. The tendency to "drift" from one subgroup to another following MMPI retesting was found to be significant at the .01 level. Simmons et al. suggested that the Meyer-Megargee MMPI based typology might be too dynamic and have too little stability to be of widespread use for inmate classification.

These examples of current MMPI research in the correctional setting are representative of the interests of psychologists in both the federal and state prison systems. Previous classification systems (e.g., Warren's Interpersonal Maturity Level or Quay's typology for adult offenders) based on demographic data (e.g., family history, psychiatric histories, prior criminal/delinquent history) require a considerable investment of staff time for interviews and administrative

data gathering and are highly subjective. An inmate classification system based on the MMPI or other easily administered "paper and pencil" test would be cost-effective and objective, and may also provide an immediate contribution to correctional decision making. But the requirement that a subject completing the MMPI must be literate presents serious problems in the correctional setting because a large proportion of inmates are semiliterate or illiterate.

#### MMPI Readability

The MMPI administration manual (Hathaway & McKinley, 1967) states that "(S)ubjects 16 years of age or older with at least six years of successful schooling can be expected to complete the MMPI without difficulty" (p. 9). A subject's ability to comprehend the MMPI items is the determining factor as to when it should be used. Ward and Ward (1980) applied several readability formulas to the 566 items comprising the current MMPI and also considered such factors as item stability, item ambiguity, and social desirability. They concluded that a higher level of reading comprehension may be required than that recommended in the MMPI manual. Blanchard (1981) noted that earlier readability studies on the MMPI used a 50% to 70% comprehension criterion (i.e., a subject with a sixth grade reading ability should be able to comprehend from 50%

to 70% of the material). According to Blanchard, "If an examiner wishes to ensure 90% comprehension of the inventory items, nine successful years of schooling seem necessary" (p. 985). The 90% comprehension criterion is recommended by reading specialists because it most ensures adequate understanding of factual and inferential questions (Johns, 1978).

#### Alternative Procedures for MMPI Administration

The cardsort and booklet formats for the MMPI, which are the most frequently used formats, require the subject to read each of the 566 MMPI items and record responses by sorting items into a true or false pile or marking on an answer sheet. Dahlstrom, Welsh, and Dahlstrom (1972a) recommend testing a subject's reading ability with the Wide Range Achievement Test or similar reading test prior to using these or similar MMPI formats. Subjects whose reading scores fall below a score of sixth grade equivalent should not be required to read the MMPI items. An alternative for MMPI administration which compensates for the subject's reading deficiencies should be used by the examiner who wishes to assess severely reading deficient subjects. One of these is a tape recorded version of the MMPI available commercially from the Psychological Corporation (1966). This version is reported to be well suited to adult subjects with severe reading deficits.

According to Dahlstrom et al. (1972a), the taped version of the MMPI (Psychological Corporation, 1966b) has the following advantages over reading each item of the MMPI to the subject: (a) comparability across settings and agencies; (b) uniformity of pacing and inflection; and (c) elimination of distortions due to reader fatigue, boredom, or voice strain. Additionally, these researchers noted that even the taped version would be inappropriate for persons with less than adequate auditory acuity.

Wolf, Freinek, and Shaffer (1964) investigated the comparability of the taped version and booklet format of the MMPI. Their subjects included 58 female nursing students with good reading skills, 120 male penitentiary inmates scoring at the sixth grade reading level or higher on the Stanford Achievement Test, and 120 male penitentiary inmates scoring below the sixth grade level but still able to complete the standard booklet form of the MMPI. The median age for these subjects was 19 years. A counterbalanced design was used with half of the subjects taking the taped version first and half taking the booklet form first. These researchers found no statistically significant differences between these formats of MMPI administration for the three subject groups on the standard MMPI validity and clinical scales. Wolf et al., however, did report obtaining



statistically significant differences on the F scale and five of the clinical scales when MMPI data from inmate subjects with reading scores above 6.0 were compared with data obtained from inmate subjects with reading scores below 6.1 regardless which form of the MMPI (taped or booklet) was compared.

Wolf et al. (1964) also administered the MMPI to 30 illiterate male inmates using the taped version of the MMPI. Protocols were judged invalid when the following scores on the three traditionally identified "validity scales" (i.e., L, F, and K) were found: (a) raw F scale score minus the raw K scale score was 9 or above; (b) raw L scale score was 10 or above; and (c) raw F scale score was 16 or above. Using these validity criteria, 16 of the 30 subjects produced invalid MMPI profiles. Although the validity rate for the illiterate subjects was slightly less than 50%, the overall results of this study led Wolfe et al. to conclude that the taped version of the MMPI, "yields scores highly comparable to those obtained with the standard booklet form" (p. 378). The researchers also noted that the oral form can be used to advantage with illiterate, semiliterate, or otherwise handicapped individuals.

Panton (1981) evaluated a taped version of the MMPI developed by Powell (1975) which is very similar

to the taped version produced by the Psychological Corporation (1966b). Powell's taped version of the MMPI was administered to 639 adult male inmates admitted to the North Carolina Department of Correction's Central Diagnostic Center. The results of that administration were compared with MMPI data obtained from 1,042 adult male inmates tested with the standard booklet form at the Central Diagnostic Center. Pantan controlled for reading ability by using the Wide Range Achievement Test (Jastak & Jastak, 1976) and used the following validity criteria: raw L scale score of 10 or less, raw F scale score of 16 or less, and raw K scale score of 23 or less. The results of this comparison lead Pantan to conclude that Powell's modification to the Psychological Corporation's taped version of the MMPI may significantly increase MMPI validity rates over the use of the standard booklet form when used with seriously reading deficient adult inmates.

#### Consideration of Race of Subjects

Numerous researchers have reported finding significant differences in MMPI profile characteristics as a function of the subjects' racial membership (Ball, 1960; McDonald & Gynther, 1962; Hokanson & Calden, 1960; Costello, Tiffany, & Gier, 1972). Several researchers have suggested that the race effect is so important that separate Black-White norms should be

developed to address this issue (Hokanson & Calden, 1960). Contradictory findings have also been reported, however. Moore and Handel (1980) investigated race and sex differences on the MMPI using "lower-class" adolescent subjects. These authors reported finding significant differences as a function of sex, but no statistically significant differences on the MMPI clinical scales due to subjects' racial membership. However, black subjects were found to show significantly higher scale scores on two of the validity scales (L & F). Gynther (1972) investigated this frequently reported race effect associated with the MMPI validity scales L and F and noted that it may simply reflect "social cynicism" which has "realistic value in the black culture" (p. 393). It is important to note that the race effect, if it exists, appears to impact on validity scale configurations. The present study examines whether racial differences are significant factors effecting MMPI validity configurations when reading ability is controlled.

#### Statement of the Problem

More than 600 male youthful offenders age 14 through 17, inclusive, are committed to the North Carolina Department of Correction each year to serve misdemeanor or felon sentences ranging from less than six months to life. A battery of tests is administered

routinely to each newly admitted youthful offender as part of the initial screening process. The results of this test battery are used to screen offenders for the emotionally handicapping conditions described by Public Law 94-142, the Education for All Handicapped Children Act of 1975 which mandates the public schools to provide free appropriate public education to all handicapped children (Adamson & Adamson, 1979), for mental health attention, and as part of the inmate classification study which purpose is to determine appropriate levels of security and supervision. In addition to the Wide Range Achievement Test each newly admitted youthful offender is asked to complete the taped version of the MMPI produced by the Psychological Corporation (1966b).

More than 300 male youthful offenders under the age of 18 were admitted to the North Carolina Department of Correction during the first six months of 1984. Although the average Wide Range Achievement Test reading score for these offenders was fifth grade eighth month equivalent, 55% of these offenders had Wide Range Achievement Test reading scores below the sixth grade cut-off recommended for MMPI testing with the standard booklet form recommended by Dahlstrom et al. (1972a). Thirty-eight (12.6%) offenders had Wide Range Achievement Test reading scores below third grade sixth month

equivalent. Because these reading score percentages have remained stable for several years, the taped version of the MMPI produced by the Psychological Corporation (1966) has been used with under age 18 youthful offenders since 1981.

The purpose of the present study was to determine the effect of using a taped version of the MMPI to compensate for the severe reading deficiencies of under age 18 youthful offenders. Previous research has been limited to reading deficient adult offenders. The present study is important because this younger population of reading impaired offenders is currently being tested with the MMPI using this oral procedure and because adolescents in general and youthful offenders in particular are increasingly becoming the focus for MMPI testing and the latter group is significantly at higher risk for severe reading disability (Murray, 1976).

#### Hypotheses

1. The testing procedure used in this study (an oral administration using a taped version of the MMPI) will compensate for the severe reading deficiencies of under age 18 youthful offenders.

2. The oral administration procedure used in the present study will compensate for any race effect on the validity scales.

## METHOD

### Subjects

The Western Correctional Center, located in Burke County, North Carolina, serves as the reception and diagnostic center for all male youthful offenders under the age of 18 who are committed to the state's adult prison system. Youthful offenders with felon and misdemeanor sentences are admitted to the center from every county in the state. Sentences of the offenders range from six months to life imprisonment. Subjects for this study were 240 youthful offenders randomly selected from all youthful offenders admitted to the center in 1981 for whom initial screening test data were available. Offenders' ages ranged from 15 years-1 month to 17 years-11 months. Fifty-six percent of the offenders were classified as white and 44% were identified as non-white.

Although primarily randomly selected for participation in the study, two factors controlled the selection procedure. One of the criteria for selection was racial membership of the subject. This was a selection factor because of earlier reports of a race effect on MMPI validity scales. The second factor was the

subject's Wide Range Achievement Test reading score. Subjects were selected according to the following procedure. Every 20th offender on a master list of all offenders admitted to the correctional center in 1981 for whom test data were available was screened for racial membership and reading score. Six offenders admitted in 1981 were omitted from the master list because MMPI data were not available.

Four reading groups were established using the following Wide Range Achievement Test reading score ranges: Group 1, reading score 6.1 or higher; Group 2, reading scores between 4.5 and 6.1; Group 3, reading scores between 3.0 and 4.6; and Group 4, reading scores below 3.1. Each group included 30 subjects identified by prison classification procedures as white and 30 subjects identified as nonwhite. A master list consisting of 960 youthful offenders was screened until 60 subjects were assigned to each of four groups for a total of 240 subjects.

#### Procedures

The screening test battery was administered to all youthful offenders within three weeks of admission to the reception and diagnostic center. The Revised Beta Examination (Linder & Gurvitz, 1957) and Wide Range Achievement Test (Jastak & Jastak, 1976) were administered during a morning test session and one-half of the

MMPI was administered that afternoon. The other half of the MMPI was administered the morning of the following day. This split-testing procedure for the MMPI was used to reduce the effects of fatigue and boredom. No more than 18 offenders were tested during any one session. The standard administration and scoring procedures as described in the appropriate manuals were followed.

The MMPI was administered according to the manual's instructions (Hathaway & McKinley, 1967) using the Psychological Corporation's taped version played on a Wollensak model 6020 tape recorder without the use of headphones. Each offender was provided a number two pencil and an IBM 805 answer sheet. The testing room was designed for testing and had a minimum of distractions, adequate ventilation and lighting, and comfortable student type desks with sides to obstruct the view of the person sitting adjacent. A proctor was present throughout the testing session to supervise, instruct, answer questions, and ensure that no offender lost his place on the answer sheet. Ten minute breaks were provided every 30 minutes.

Each offender's IBM 805 answer sheet was hand-scored for items omitted and if any were omitted the offender was recalled to the testing room and after counseling requested to complete the omitted items.



After all items had been completed the answer sheets were handscored for the three validity scales (i.e., L, F, and K) and the 10 clinical scales using the criteria for scoring described by Hathaway and McKinley (1967) and Dahlstrom, Welsh, and Dahlstrom (1972a, 1972b). The IBM 805 answer sheet for each offender selected for participation in this study was rescored for the L, F, and K scales.

The validity criteria established for this study were abstracted from previous research and were as follows: (a) L scale raw score  $< 11$  (Panton, 1981); (b) F scale raw score  $< 18$  (Marks, Seeman, & Haller, 1974); and (c)  $F-K < +17$  (Lachar, 1981). (See Appendix A.) This procedure divided each group into valid and invalid MMPI profiles. The resulting data were then subjected to chi-square analysis to determine the significance of any differences occurring in the proportion of valid and invalid MMPI profiles between the criterion group (offenders with reading scores above the 6.0 cut-off for standard MMPI administration) and the three reading level subgroups. The possibility of a race effect was examined by dividing each group by race of subject and analyzing the proportion of valid MMPI profiles using the chi-square statistical technique.

## RESULTS

Table 1 presents comparisons of the number of valid MMPI profiles generated by subjects in the criterion group (Group 1) with the number of valid MMPI profiles obtained from subjects in the reading deficient groups (Groups 2, 3, and 4). The data are presented in percentage form to facilitate conversion to rates per thousand which are used in the discussion section. Eighty-three percent of the subjects with Wide Range Achievement Test (WRAT) reading scores above 6.0 had valid MMPI profiles according to the validity criteria established for this study. This compares with 72% of the subjects with WRAT reading scores between 4.5 and 6.1 (Group 2), 68% of the subjects with WRAT reading scores between 3.0 and 4.6 (Group 3) and 47% of the subjects with WRAT reading scores below 3.1 (Group 4).

Chi-square analysis of the data indicated that the number of valid MMPI profiles produced by the subjects in Group 1 did not differ significantly at the .05 level of significance from the number of valid MMPI profiles produced by the subjects in Group 2 or Group 3. The chi-square value of 17.72 (df = 1) obtained when Group 1

Table 1  
Percentage Comparison of Groups by Validity of MMPI Profiles

MMPI Profile	Group 1 & 2		Group 1 & 3		Group 1 & 4		$\chi^2$
	Group 1 N = 60	Group 2 N = 60	Group 1 N = 60	Group 3 N = 60	Group 1 N = 60	Group 4 N = 60	
Validity	83	72	83	68	83	47	
	<u>17</u>	<u>28</u>	<u>17</u>	<u>32</u>	<u>17</u>	<u>53</u>	
	100	100	100	100	100	100	17.72***
$\Sigma$ Valid Profiles							
$\Sigma$ Invalid Profiles							
							3.68
							2.34

\*\*p < .05

\*\*\*p < .01

data were compared with Group 4 data, however, did reach statistical significance at the .01 level.

The data presented in Table 2 reflect the percentage comparison of valid MMPI profiles within each group based on racial membership of subjects. Eighty-seven percent of white subjects and 80% of nonwhite subjects in Group 1 produced valid MMPI profiles. The chi-square value of .48 (df = 1) for Group 1 data was not significant at the .05 level of significance. Seventy percent of white subjects and 73% of nonwhite subjects in Group 2 obtained valid MMPI profiles. The chi-square value of .082 (df = 1) for this comparison did not reach significance at the .05 level. Similarly, the 70% of white and 67% of nonwhite subjects producing valid MMPI profiles in Group 3 were not significantly different (chi-square value .0013, df = 1) at the .05 level. The difference between the 60% of white subjects and 33% of nonwhite subjects obtaining valid MMPI profiles in Group 4, however, was significant at the .05 level when subjected to chi-square analysis (chi-square value 4.29, df = 1).

Table 2  
Percentage Comparison of Valid MMPI Profiles by Race

MMPI Profile	Group 1		Group 2		Group 3		Group 4		$\chi^2$
	White	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite	
Validity	N = 30	N = 30	N = 30	N = 30	N = 30	N = 30	N = 30	N = 30	N = 30
% Valid	87	80	70	73	70	67	60	33	
% Invalid	<u>13</u>	<u>20</u>	<u>30</u>	<u>27</u>	<u>30</u>	<u>23</u>	<u>40</u>	<u>67</u>	
	100	100	100	100	100	100	100	100	4.29**
		.48	.082		.0013				

\*\*p < .05

## DISCUSSION

The purpose of this study was to determine if an alternative administration procedure for the MMPI might be used successfully with severely reading disabled male youthful offenders under the age of 18. The alternative administration procedure for the MMPI used in this study was a taped version available from the Psychological Corporation (1966). Previous research has shown the taped version to have been used successfully to compensate for the reading deficiencies of adult subjects. MMPI validity criteria used in previous research with older incarcerated and nonincarcerated subjects were applied to data obtained from the administration of the taped version of the MMPI to 240 youthful offenders. The subjects in the present study showed WRAT reading grade equivalent scores ranging from 1.0 to 10.2. Based on the results of similar research with adult reading deficient subjects obtained by Panton (1981) it was hypothesized that the use of the taped version of the MMPI would compensate for the reading deficiencies of the under age 18, male offender.

The results of the present study provide support for the hypothesis that the taped version of the MMPI

compensates for youthful offenders' poor reading skills. Statistically significant differences between reading level groups in MMPI validity rates did not occur until the reading levels dropped below a WRAT reading score of 3.1. The rate of valid MMPI profiles (830/1,000) for the highest scoring reading group (i.e., reading scores above 6.0) was not significantly different at the .05 significance level from either the second reading group (720/1,000) or the third reading group (680/1,000). The criterion group's MMPI validity rate of 830/1,000, however, was significantly higher than the rate of 470/1,000 for the lowest reading group at the .01 significance level using chi-square analysis.

Interestingly, Wolf et al. (1964) found a 470/1,000 rate of MMPI profile validity with illiterate adult offenders which is the same as the rate for the lowest reading group in the present study. Wolfe et al. however, did not consider the possible effect of the racial membership of subjects. The present study found that in the lowest reading group white subjects had a validity rate almost twice that of nonwhite subjects (600/1,000 for white subjects vs. 330/1,000 for nonwhite subjects). The difference in rates reached statistical significance at the .05 level. These data strongly suggest the presence of a race effect, but only within the lowest reading level. This may be due to

subcultural factors among minority group subjects which affect listening comprehension of the MMPI items. For example, Kaufman (1979) suggests that black language and culture may interfere with a child's ability to comprehend standard English (and, thus, the items on the MMPI) in the same way that bilingual Spanish speaking children often have difficulty understanding standard English. This linguistic/cultural interference appears to disappear as the subjects' reading skills improve.

The results of this study further suggest that the examiner who wishes to test severely reading disabled subjects under the age of 18 may expect approximately the same rate of valid MMPI profile production from semiliterate subjects that may be expected from literate subjects with adequate reading skills when the taped version of the MMPI is used with a special administration procedure. Significant decreases in valid MMPI profile rates need not be anticipated until subjects' reading skill levels become severely deficient (e.g., below third grade equivalency). Even when subjects' reading skills may be described as illiterate more than half of white subjects may be expected to produce valid MMPI profiles. It is not until nonwhite illiterate subjects are tested that validity rates drop below the 50% level. As a result it may not be cost-effective to



administer the taped version of the MMPI to illiterate subjects in general and nonwhite illiterate subjects in particular. The decision, whether to test subjects' with severe reading deficiencies by using the taped version of the MMPI, would depend on the examiner's needs and circumstances.

#### Limitations of the Present Study

A major limitation of the present study is its dependence on a reading measure, the Wide Range Achievement Test, limited to word identification. The WRAT was selected as the independent variable in the present study because it is widely used in correctional settings as an educational screening test. The use of a reading skills test which more comprehensively assesses the subject's reading ability may provide a more accurate picture of the relationship between type and degree of reading impairment and the subject's ability to adequately comprehend and complete the MMPI.

The present study evaluated MMPI validity in terms of the L, F, and K validity scales using criteria abstracted from previous research with adult subjects. Adolescent subjects may benefit more from validity criteria based on peer-related criteria. Marks, Seeman, and Haller (1974), for example, provide t score conversions for the L, F, and K scales based on adolescents age 14 through 18.

The data obtained for the present study came from subjects tested shortly after admission to prison. The results of testing youthful offenders with the MMPI at different periods during incarceration may deviate significantly from the result obtained shortly after admission when the young inmate is experiencing the initial "shock of incarceration."

#### Suggestions for Further Research

One of the major limitations on the present study was the use of a reading measure limited to word identification. A reading measure which comprehensively evaluates a subject's reading skills in the areas of vocabulary, reading comprehension, and use of context cues is recommended. A more precise reading measure may also provide the opportunity to explore the issue of learning disability as it relates to the use of the MMPI with adolescent subjects.

The present study assessed MMPI profile validity using L, F, and K scales and validity criteria abstracted from previous research on adult subjects. Clinical scale elevations, high-point code comparisons, and MMPI profile "shape" were not considered in evaluating the effectiveness of this alternative administration procedure for the MMPI. Consequently, the study may be considered a first step in assessing the overall value of the taped administration procedure to

compensate for the reading deficiencies of severely reading impaired adolescents. The next "steps" might address the significance of differences appearing between specific clinical scales of the MMPI when groups with differing reading abilities are compared. Significant differences between scale scores as a function of reading ability might indicate that this compensatory testing procedure is inadequate despite favorable validity rates. Additionally, significant differences in MMPI profile configurations may suggest differing personality characteristics as a function of severity of reading impairment.

Finally, the present study did not address issues of test-retest reliability or the effect of testing subjects with the MMPI at differing times during incarceration. Severe reading impairment may be related to inconsistencies in the manner by which adolescents approach the MMPI and which would be reflected in significant differences between MMPI data obtained on retest. Therefore, evaluation of test-retest reliability of the MMPI taped administration procedure is recommended.

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APPENDIX A

Minnesota Multiphasic Personality Inventory

### Minnesota Multiphasic Personality Inventory

According to Marks, Seeman, and Haller (1974), the Minnesota Multiphasic Personality Inventory (MMPI) is a psychometric instrument characterized as structured and as an inventory-type test. It is composed of self-reference statements and a structured response format. The current MMPI consists of 566 one sentence items or statements such as "I do not always tell the truth," "I am happy most of the time," "Someone has control of my mind" to which the subject completing the inventory is asked to respond in a true or false manner. It differs from projective tests (e.g., the Rorschach and the Thematic Apperception Test) which use ambiguous stimuli and relatively unstructured response formats. The purpose of the MMPI today as it was when developed in the late 1930s by S. Hathaway, a psychologist, and J. C. McKinley, a psychiatrist, is "to provide an objective assessment of some of the major personality characteristics that affect personal and social functioning" (Hathaway & McKinley, 1967, p. 7). The MMPI, therefore, has in common with the projective tests the goals of understanding and predicting human behavior.

The development of the MMPI followed an empirical method by which an initial pool of over 1,000 items or statements drawn from various sources including

psychiatric examination procedures and previously used personality inventories was reduced to the current 566 item inventory. This reduction was accomplished by administering all 1,000 items to groups of "normal" subjects and groups of diagnosed psychiatric patients. Those items which clearly differentiated among the groups were used to construct the MMPI. Items with little or no differentiating value were discarded.

The current MMPI includes four validity scales and 10 clinical scales as well as numerous special scales. Subject's responses to each of the 566 items are counted to yield raw scores on each of the scales. Raw scores are converted to  $\underline{t}$  scores using conversion tables and each scale's  $\underline{t}$  score is plotted graphically on a MMPI profile sheet. Each scale is represented on the profile as a vertical line having a mean  $\underline{t}$  score value of 50 and a standard deviation  $\underline{t}$  score of 10. Thus, a  $\underline{t}$  score on any scale of 70 corresponds to a raw score falling two standard deviations above the mean for that scale. Approximately 15% to 20% of normal subjects may be expected to obtain a  $\underline{t}$  score of 70 or higher on at least 1 of the 10 clinical scales. By contrast, approximately 75% of psychiatric in-patients may be expected to obtain a  $\underline{t}$  score of 70 or higher on one or more of the clinical scales (Gregory & Smeltzer, 1977).

The concept of validity as it applies to the MMPI refers both to the assessment of "major personality characteristics" as proposed by Hathaway and McKinley (1967) and the extent to which an individual's MMPI profile accurately reflects that person's personality characteristics at the time the MMPI was completed. The validity scales address this latter definition of profile validity and are reported to describe factors such as the subject's test taking attitude, response style and psychological set which may affect how the person reacts to the MMPI items. An unusual or deviant response style such as marking all answers true or all false or simply marking items randomly true or false may be detected by evaluation of scores on the validity scales. Elevations on individual validity scales or patterns of scale elevations may indicate that an interpretation of the profile would be inaccurate or misleading.

The first validity scale is the (?) scale which refers to the number of items a subject omitted. A large number of omitted items, usually considered to be from 30 to 50, may indicate serious distortion of the profile, thereby decreasing its validity. Subjects who omit a large number of items may be counseled concerning their reasons for omitting items and encouraged to complete the items omitted.

The L scale is composed of 15 items such as "I do not always tell the truth," "I would rather win than lose a game" adapted from research on deceit by Hartshorne and May (1928). Normal adults may be expected to respond to four or fewer of the 15 items in a deviant direction (false for the two examples above). A score of 7 or higher for an adult and 10 or higher for an adolescent suggests the subject's overall profile may be invalid. Marks et al. (1974) reported that quite often the L scale functions better as an 11th clinical scale than as a validity scale and recommended caution when using the L scale as a validity indicator.

The F scale consists of 64 items to which at least 90% of a sample of normal subjects responded in the same direction, regardless which direction, true or false, was selected. Because the responses had such a high degree of agreement, an abnormal or deviant response set is indicated when as few as 12 items for an adult and 18 items for an adolescent are marked in the deviant direction.

According to Dahlstrom et al. (1972a), the 30 item K scale operates as a correction scale and much less as a validity indicator than the (?), L and F scales. Marks et al. (1974) note:

(R)esponses to K items indicate a tendency to deny problems, worries, and feelings of inferiority and

a Pollyanna-like tendency to look at others (and at oneself) through rose-tinted glasses (e.g., "I think nearly anyone would tell a lie to keep out of trouble" is scored for K if answered false).

(p. 19)

There is no cutting score for K above which one may consider the MMPI profile suspect, however, the K scale may be an important validity indicator when taken into consideration with the F scale.

Gough (1947) developed a special validity scale index using a combination of the F and K scales which he termed the F-K index. This index is the difference between the raw score on F minus the raw score on K. Gough (1950) found that scores from normal subjects ranged from -2 to -19 while scores from psychiatric patients were +9 or higher. Consequently, Gough recommended a cut-off score for the F-K index from +5 to +9, higher scores indicating a response style likely to invalidate the clinical profile.

Branca and Podolnick (1961) asked subjects to respond to the MMPI items as they thought a person experiencing a high degree of anxiety would respond. Results showed that a cutting score of +5 for the F-K index accurately identified all but one of the MMPI profiles subjects generated who were asked to "fake" an anxiety state. Grow, McVaugh, and Eno (1980) in a study using

college students reported that F-K index scores ranging from +7 to +15 or higher may be helpful in identifying "faking" on the MMPI. Lachar (1981) suggested that an F-K index score above +11 should alert the clinician to the probability of an invalid profile and a score above +16 makes the profile invalid.

APPENDIX B

Wide Range Achievement Test



### Wide Range Achievement Test

The Wide Range Achievement Test (WRAT) was developed and initially standardized in 1936 by Jastak and Jastak (1984) and since then has undergone five revisions. The most recent revision was completed in 1984. The original purpose for the development of the WRAT, according to its authors, was to provide an achievement measure which "clearly differentiated between mastery of codes and mastery of thought" (Preface to the 1984 manual). The WRAT is purported to assess what the authors termed learning (coding) abilities. In addition to assessment of basic educational skills or learning abilities, the authors have developed a controversial personality theory in conjunction with their research on WRAT. It is sometimes difficult to separate people's attitudes toward the WRAT from their attitudes toward the Jastaks' theory of personality. In any case, Jastak and Jastak (1976) recommend that their test be used as an adjunct test along with other tests when used in the clinical setting.

The WRAT is composed of three subtests which involve reading, arithmetic reasoning, and spelling. The reading subtest is administered individually by asking the subject to read aloud items presented on a list. The items range from "go" and "cat" (the first two items on the list) to "internecine" and "synecdoche" (the last two

items on the list). Correct pronunciation of the word is scored (a pronunciation guide is provided to aid in scoring) and the raw score is converted to a grade equivalent score, standard score, or percentile according to tables provided in the manual.

The arithmetic subtest may be group administered by providing the subject(s) with the test booklet on which are printed a variety of arithmetic problems which the subject is to complete within a set time limit (10 minutes). The problems range from simple addition 43,

$$\begin{array}{r} 43 \\ +6 \\ \hline \end{array}$$

subtraction  $\begin{array}{r} 726 \\ -349 \\ \hline \end{array}$ , and multiplication  $\begin{array}{r} \$4.95 \\ \times 3 \\ \hline \end{array}$  to complex

"Factor:  $r^2 + 25 - 10r$ " and "Find square root: 67091."

Correct answers are counted to provide a raw score which may be converted according to tables into grade equivalent scores, standard scores or percentiles. The arithmetic subtest provides a special procedure to test subjects with limited arithmetic skills. This special procedure is individually administered and asks the subject to count aloud, read specific numbers, and add concrete items such as pennies or marbles.

The spelling subtest is administered by having the examiner read aloud a list of words while subjects write the words on a page of the test booklet. It may be individually administered or group administered. Words which are correctly spelled are scored and the total raw

score may be converted to grade equivalent scores, standard scores, or percentiles.

Reviews of the WRAT have been generally negative and have criticized its standardization methodology as well as its validity. Courtney (1960) conceded that the WRAT may have adequate face validity as a "course screening measure" (p. 21) for spelling, word pronunciation, and arithmetic skills, but states that use of the WRAT "would not appear justified while we still have available tests at desired levels with adequate standardization" (p. 21). Sims (1960) suggested that the reliability of the test had not been adequately established. He also raised serious questions as to the instrument's ability to validly measure either ability or school achievement. Nonetheless, the WRAT enjoys widespread use primarily as an initial screening test. The North Carolina Department of Public Instruction, for example, while not endorsing the test allows it to be used as a part of the initial screening procedure required by Public Law 94-142. The North Carolina Department of Correction has since at least the early 1950s used the WRAT routinely as part of its diagnostic test battery as a measure of the inmate's basic educational skill levels.

Merwin (1972) questioned whether the WRAT should be identified as an achievement test, but suggested that it may be a useful instrument in the clinical setting for

psychologists working with specialized cases. Thorndike (1972), however, would limit its use to obtaining a quick estimate of a person's general level of ability and educational background. In general, common use of the WRAT does appear limited to using it as a screening instrument followed by more specialized and appropriate educational achievement instruments on an as needed basis.

## VITA

William "Bill" Hartley received the Bachelor of Science degree in psychology and sociology in 1972 and the Master of Science degree in psychology in 1973 from Central Missouri State University, Warrensburg, Missouri. He completed his clinical psychology internship with the Missouri state prison system and during his undergraduate years worked as a correctional officer at the Iowa State Penitentiary in Fort Madison, Iowa. Employed as a staff psychologist with the North Carolina Department of Correction at the Western Correctional Center in 1974, he was promoted to his current position as psychological program manager at the center in 1976. His major areas of professional interest include juvenile delinquency, criminology, and forensic psychology.

Bill began taking graduate courses in the school psychology program at Appalachian State University in 1979 to upgrade his professional skills in psychology. He was accepted to candidacy for the Master of Arts and Certificate of Advanced Study in School Psychology degrees at Appalachian State University in 1981.

Bill's address is Route 8, Box 788B, Morganton, North Carolina 28655.