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Development and cross-validation of a specail scale of the MMPI-168 to predict psychiatric recommendations of incompetency to stand trial

Rexford Forrest Burnette

To the Graduate Council:

I am submitting herewith a dissertation written by Rexford Forrest Burnette entitled "Development and cross-validation of a specail scale of the MMPI-168 to predict psychiatric recommendations of incompetency to stand trial." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Robert G. Wahler, Major Professor

We have read this dissertation and recommend its acceptance:

Gary Klukken, Wesley G. Morgan, Kenneth R. Newton

Accepted for the Council:

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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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The Graduate School

DEVELOPMENT AND CROSS-VALIDATION OF A SPECIAL SCALE OF THE MMPI-168 TO PREDICT PSYCHIATRIC RECOMMENDATIONS OF INCOMPETENCY TO STAND TRIAL

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Rexford Forrest Burnette

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ABSTRACT

Although the MMPI is commonly used in the assessment of individuals undergoing evaluations for competency to stand trial, there have been few studies in the literature that have examined the relationship of this instrument to pretrial competency. Moreover, these studies have focused upon differences among the basic scales and have produced inconsistent results. The present study investigates the usefulness of the MMPI (and MMPI-168) in differentiating competent and incompetent defendants through both a profile and item analyses of these inventories.

A sample of 522 pretrial evaluations performed at the Middle Tennessee Mental Health Institute in Nashville, Tennessee was randomly divided into scale-construction and cross-validation subsamples. A discriminant function analysis of the basic MMPI scales from the scale-construction subsample found only one scale (7) which accounted for all significant variance. Although it significantly differentiated between these two groups in this subsample, it classified Ss significantly poorer than base rate prediction. Moreover, this scale failed to even reach significance between the competent and incompetent groups in either the split-half cross-validation subsample or a second cross-validation subsample of 104 pretrial defendants from Lakeshore Mental Health Institute in Knoxville, Tennessee.

An item analysis was performed on the first 168 items of each MMPI of the scale-construction subsample using a 2 X 2 chi-square

design; 35 items were derived which significantly differentiated competent and incompetent offenders. A discriminant function analysis was performed on these items to eliminate redundancy and to obtain the best scale. Five items accounted for all significant variance and comprised the final scale. Rescoring the scale-construction subsample with this scale showed that it significantly discriminated between the two groups; comparable results were obtained with both cross-validation subsamples. However, correct classification of Ss using this scale was not significantly better than simple base rate prediction. Excluding Ss whose I.Q.s were below 70 and whose MMPIs were of questionable validity did not significantly enhance the scale's classification rate.

It was concluded that the MMPI (and MMPI-168) are not particularly useful instruments in predicting psychiatric recommendations of pretrial competency.

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LIST OF SYMBOLS AND ABBREVIATIONS

Class "X" felony	Certain violent felonies (T.C.A.) for which parole is not offered (e.g., aggravated rape and aggravated kidnapping).
Capital offense	According to T.C.A. nomenclature, the charge of Murder, First Degree.
CV-I	Cross-validation subsample number One (MTMHI, N=236).
CV-II	Cross-validation subsample number Two (LMHI, N=104).
df	Degrees of freedom (see Guilford and Fruchter, 1978, pages 127-128).
DSM-III	Diagnostic and Statistical Manual of Mental Disorders, Third Edition (A.P.A., 1980).
F or F Scale	One of the three MMPI validity scales.
I.Q.	Intelligence Quotient or the score obtained on a standardized test of intelligence, such as the WAIS-R (Wechsler, 1981).
K or K Scale	One of the three MMPI validity scales.
L or L Scale	One of the three MMPI validity scales.
LMHI	Lakeshore Mental Health Institute (Knoxville, Tennessee).
Misdemeanor (MISD)	A criminal offense (T.C.A.) carrying a sentence of less than one year (e.g., public drunkenness and malicious mischief).
MMPI	Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1948).
MMPI-168	Most widely used short form of the MMPI which uses the first 168 items (Overall and Gomez-Mont, 1974).
MTMHI	Middle Tennessee Mental Health Institute (Nashville, Tennessee).

N	Number of Ss within a sample or subsample.
NCT Scale	Not Competent for Trial Scale of the MMPI-168.
NGRI	Not Guilty by Reason of Insanity; also called insanity plea or insanity defense.
No-MMPI	That group of Ss not taking either the MMPI or MMPI-168 (for MTMHI, N=42; for LMHI, N=228).
Non-violent felony	A group of criminal offenses (T.C.A.) which typically do not involve physical violence toward others (e.g., burglary and larceny).
p	Probability or confidence level (see Guilford and Fruchter, 1978).
PIN/POUT	Probability level to be set in SPSS Subprogram Discriminant (Klecka, 1975).
Psychotic	A group of severe psychological or psychiatric disorders (e.g., the schizophrenias, paranoid states, and bipolar illnesses--see DSM-III, 1980).
r	Correlation coefficient (typically Pearson r).
S or Ss	Subject or Subjects,
SC	Scale-construction subsample (MTMHI, N=244).
SD	Standard deviation, an estimate of the variability in the population from which a sample came (see Guilford and Fruchter, 1978, pages 65-73).
SPSS	Statistical Package for the Social Sciences (Nie et al., 1975).
T.C.A.	Tennessee Code Annotated.
t or t-test	Fisher's test of significance between group means. "Ratio of a deviation from the mean in a distribution of sample statistics to the standard error of that distribution" (Guilford and Fruchter, 1978, pages 157-159).
Violent felony	A group of criminal offenses (T.C.A.) which involve physical violence toward others (e.g., felonious assault and sexual battery).

WAIS or WAIS-R	Wechsler Adult Intelligence Scale (Wechsler, 1955) and Wechsler Adult Intelligence Scale-Revised (Wechsler, 1981).
$\underline{x}^2$	Chi-square, a statistical comparison of frequencies in alternative categories (see Guilford and Fruchter, 1978, page 195).

INTRODUCTION

Although the notion of competency to stand trial has existed for several centuries and remains today a vital cornerstone in the interface between law and psychiatry/psychology, there has been a paucity of research examining the processes by which this decision is made. Common in virtually all jurisdictions within the United States of America, mental health professionals are sought as consultants whenever the question of a defendant's pretrial competency arises. Even though the specific processes these professionals employ in reaching their recommendations vary radically, the use of psychological tests is a common practice. However, the precise role such tests play in these recommendations remains quite ambiguous.

In particular, the Minnesota Multiphasic Personality Inventory (MMPI), one of the most widely used personality assessment instruments in this country, is routinely given to defendants undergoing pretrial evaluations. However, there exists few guidelines for interpreting the results of this test in a manner that will enhance its ability to predict psychiatric recommendations of competency or incompetency.

Of the three published studies that have used the MMPI in an effort to distinguish between competent and incompetent defendants, all have examined the basic scales and have produced equivocal and contradictory results. Of the more than 450 special scales that have been developed for the MMPI, none has a direct relationship to the issue of pretrial competency.

In response to this vacuum, the present research project has attempted to: 1. Assess what combination of basic MMPI scales best discriminates between competent and incompetent defendants, and 2. Develop a special scale of the MMPI (more specifically, of the MMPI-168 short form) that will not only differentiate the competent and incompetent groups but will correctly classify individuals at a level significantly better than the base rates of the population. The evaluation of the role of the MMPI in assessing pretrial competency as well as the development and double cross-validation of this special scale are the foci of this research endeavor.

CHAPTER I

STATEMENT OF THE PROBLEM

1. PURPOSE OF THE STUDY

The primary purpose of this study is to investigate the usefulness of the Minnesota Multiphasic Personality Inventory (MMPI) in the assessment of pretrial competency. More specifically, it will explore how well the MMPI can predict the psychiatric recommendations of a forensic evaluation team regarding whether or not a pretrial defendant is competent or incompetent to proceed to trial.

In order to achieve this general purpose, this study will first examine the efficacy of the basic scales of the MMPI in differentiating competent and incompetent individuals. Since several previous studies that have used the MMPI to differentially predict pretrial competency have used this approach without consensus (Cooke, 1969; Daniel et al., in press; Maxson and Neuringer, 1970), the value of these basic scales in this regard is questioned.

The second specific purpose of this study is to develop a special scale of the MMPI based on the first 168 items (the most widely used and accepted short form of the test), using the scale development methodology proposed by Butcher and Tellegen (1978), Clopton (1978), Darlington and Bishop (1966), and Thorndike (1967), which will significantly ($p < .05$) differentiate competent and incompetent pretrial defendants.

The third, and final, specific purpose of this study is to cross-validate this special Not Competent for Trial (NCT) Scale with two distinctly different pretrial populations.

In evaluating the efficacy of the NCT Scale, both with the original (SC) subsample and the two cross-validation subsamples (CV-I and CV-II), it must be able to:

1. Differentiate between competent and incompetent defendants at the $p < .05$ level using t-tests of significance between the group means;

2. Classify competent and incompetent defendants significantly better ($p < .05$) than any one, or any combination, of the basic MMPI scales;

3. Correctly classify Ss at a rate significantly ($p < .05$) better than base rate prediction (i.e., better than the known probability of group membership).

2. NEED FOR THE STUDY

Although the MMPI is widely used in the psychological evaluation of individuals undergoing pretrial assessments for competency, its specific utility in differentiating between offenders later judged by psychiatric teams to be competent or incompetent has not been empirically demonstrated. In general, there has been a paucity of research comparing the MMPI results of competent and incompetent defendants; of the three significant investigations examining the issue (Cooke, 1969; Daniel et al., in press; Maxson and Neuringer,

1970), all have focused upon an analysis of the basic scales in comparing the two groups and have failed to reach any consensus regarding the value of the MMPI in assessing pretrial competency. Moreover, these studies have failed to approach the analysis of MMPI data in a manner consistent with other comparative studies using that instrument (e.g., Lachar, Lewis, and Kupke, 1979; Lloyd et al., 1983).

In view of the widespread use of the MMPI in this country (Lubin, Larsen, and Matarazzo, 1984), it is not surprising that there has been a rapid proliferation of special scales for the MMPI (Dahlstrom, Welsh, and Dahlstrom, 1975, reported on more than 450 additional scales). Several authors (e.g., Clopton, 1978), however, have questioned the value of developing additional scales. Butcher and Tellegen (1978) have advocated five criteria to be satisfied before a researcher is tempted to "add to the plethora" of special scales. These criteria are:

1. The basic scales or one of the already available special scales of the MMPI do not adequately cover the domain of the construct to be measured;

2. The proposed scale must be conceptually interesting;

3. The special scale must be developed and cross-validated on reasonable large, well-defined samples;

4. The special scale must be a superior alternative to existing MMPI scales and must be a disposition not measured by existing scales;

5. The prediction success and failure of the special scale in specific settings must be reported.

There is an additional criterion, taken from Meehl and Rosen (1955), involving "base rates." Base rates are virtually never reported in the claims of efficiency of psychometric instruments. Meehl and Rosen (1955) have described the problem thusly:

> Since diagnostic and prognostic statements can often be made with a high degree of accuracy purely on the basis of actuarial or experience tables (referred to hereinafter as base rates), a psychometric device, to be efficient, must make possible a greater number of correct decisions than could be made in terms of the base rates alone.

Based upon the criteria proposed by Butcher and Tellegen (1978), there appears to be more than adequate justification for the development of a special scale that can predict pretrial competency. The specific construct of pretrial competency is neither covered by any of the basic MMPI scales nor by any of the already available special scales (based upon a review of special scales in such source books as Graham, 1977, and Greene, 1980, as well as an exhaustive review of psychometric research in pretrial competency). The proposed scale has potential value to a large number of clinicians already using the MMPI in pretrial evaluations. The present study employs a large (N=244) sample for the construction of the special scale as well as two cross-validations samples (N=236 and N=104) from different facilities. The efficacy of existing MMPI scales in differentiating competent and incompetent defendants has been

unproved and is assessed concurrently with the special scale. Finally, classification date (i.e., "hit" and "miss" tables) are examined and compared with the base rates for the population.

3. LIMITATIONS AND DELIMITATIONS OF THE STUDY

The scope of this study has been delimited by the researcher in several significant ways. First, it has been restricted geographically to Tennessee and to those pretrial referrals made by the courts within the catchment areas of Middle Tennessee Mental Health Institute (MTMHI) and Lakeshore Mental Health Institute (LMHI). Therefore, care will need to be exercised in extrapolating the results to other geographical areas and legal jurisdictions. Second, the study has been delimited to inpatient competency evaluations and may not be applicable to those defendants undergoing such evaluations in jail or on an outpatient basis. Finally, the pretrial evaluations have been delimited to only two agencies (MTMHI and LMHI); therefore, since the precise procedures whereby such evaluations are conducted vary throughout the country, no claim can be made that the results of this study will be descriptive of defendants undergoing pretrial evaluations in other inpatient forensic settings.

This study has been limited by certain conditions that were beyond the researcher's control. In particular, the local mental health centers (in Tennessee) perform the pretrial evaluations of all defendants referred by the courts for such assessments; however, in approximately 30% of the cases, the mental health centers are

unable to adequately evaluate these individuals on an outpatient basis and subsequently refer these more difficult cases to such inpatient facilities as MTMHI and LMHI for more extensive evaluations. Therefore, the present sample taken from these two facilities tends to be biased toward the more perplexing cases.

4. DEFINITION OF TERMS

Competency to Stand Trial

Competency to stand trial, also sometimes referred to as "triability" (Slovenko, 1973), is a complex decision made by the courts, usually based upon mental health recommendations, regarding an individual's ability to understand the legal charges pending against him/her and to effectively assist counsel in the preparation of a defense against these charges. For a detailed discussion of the criteria used in the determination of competency to stand trial, refer to Bennett (1968) and Ausness (1978).

Competency to stand trial is distinctly different from other types of competency (e.g., competency to handle one's own financial affairs). Competency to stand trial is neither a personality trait nor a complex of personality traits, although such characteristics may correlate with (and even contribute to) the legal determination of pretrial competency. However, "competency to stand trial" is commonly used in the literature to describe a cluster of behaviors or criteria that are associated with, or lead to, the legal

determination of it. Hence, when the phrase is used hereafter, it will refer either to the legal decision or to the psychiatric recommendation of these criteria.

Defendant

A defendant is an individual who has been charged with, but not yet convicted of, a criminal offense and whose charges are still pending.

Incompetency to Stand Trial

Incompetency to stand trial is essentially the obverse of competency to stand trial. An individual who is incompetent to stand trial would, to a significant degree, be unable to assist their counsel effectively in the preparation of a defense and/or not be able to understand the charges and proceedings against him/her. It is not directly synonymous with mental illness in that many severely disturbed individuals meet the criteria for pretrial competency (Robey, 1965; Schulman, 1973); however, there is a high positive correlation between severe mental illness and incompetency to stand trial (Baskin and Klein, 1981; Bluestone et al., 1981; Daniel et al., in press).

Not Guilty by Reason of Insanity

Not Guilty by Reason of Insanity (or NGRI) is a legal decision made by the courts regarding an individual's mental condition at the time of, or approximately around the time encompassing, the

commission of an alleged criminal offense, based upon psychiatric and/or psychological testimony, and stemming from one of several criteria depending upon the state or jurisdiction. Although frequently confused with the issue of competency to stand trial (Fitsgerald et al., 1979), they are not directly related.

Pretrial Competency Evaluation

This refers to an assessment of whether a defendant is competent or incompetent to stand trial, usually made by a psychiatrist, psychologist, and/or another mental health professional (often together in a "forensic team"), performed either on an outpatient or inpatient basis. On the basis of this evaluation, a recommendation is made to the referral court regarding that defendant's competency to stand trial. This recommendation is rarely countermanded by the courts, unlike recommendations regarding a defendant's mental condition at the time of the offense (i.e., NGRI).

5. OVERVIEW OF REMAINING CHAPTERS

This chapter has discussed the purpose, need, and limitations/delimitations of the study; additionally, it has defined the essential terminology to be used throughout. Chapter II will review the significant literature surrounding the broad area of pretrial competency as well as those studies specifically relating to the present study. Chapter III will describe the methods and procedures employed in this study, including an analysis of the samples used,

the instrumentation, the data collection, the statistical treatment of the data, and a statement of the null-hypotheses. Chapter IV will describe the results obtained in the study. Chapter V will contain a discussion of the results, the conclusions and implications of the study, the status of the null-hypotheses, and suggestions for further research.

CHAPTER II

LITERATURE REVIEW

1. HISTORICAL CONSIDERATIONS

Extent of the Problem of Incompetency to Stand Trial

Since the landmark Supreme Court decision of Dusky v. United States (1960), the notion that a defendant must have the capacity to participate rationally and effectively in the legal process in order to have a fair trial has become an established component of the American justice system (Roesch and Golding, 1978). Basically, the competency laws are designed to protect the rights of defendants to not only be physically present at a trial, but mentally present as well (Koson and Robey, 1973; Robey, 1965; Roesch, 1979). This concept developed initially in common law, then in statutory law, as an extension of the prohibition against trial in absentia (Peszke, 1980). Procedures for raising the issue of whether a defendant in a criminal case is competent to stand trial now exists in every state (Sobel, 1978).

Individuals who have been found to be incompetent to proceed to trial comprise the largest group of psychiatric patients committed to mental institutions through the criminal justice system in the United States (Lipsitt, Lelos, and McGarry; Pendleton, 1980). Scheidemandel and Kanno (1969) studied a large number of offenders

in over 50 institutions nationwide and found that patients undergoing competency evaluations, or who were already adjudicated incompetent to stand trial, constituted the largest subgroup of offenders in contact with the mental health system (about 52%). On the basis of that study, it was speculated that around 15,000 persons are being held at any given time in this country on competency-related issues. By contrast, this study found only 4% of the patients were committed as Not Guilty by Reason of Insanity (NGRI), or about one-twelth as many as the incompetent group. Kerr and Roth (1984), in a more recent study which surveyed 126 facilities for "mentally disordered offenders," found a similar distribution.

In terms of absolute numbers, Goldstein and Stone (1977) found that competency examinations were requested in about 1% of all criminal cases. However, not all defendants ordered to undergo competency evaluations are found to be incompetent to stand trial. In fact, the actual percentage of referrals found to be incompetent to proceed have ranged from as low as 3% to as high as 42% (Arboleda-Floren, Gupta, and Alcock, 1975; Cooke, 1969; Ennis, 1972; Fitsgerald, Peszke, and Goodwin, 1978; Geller and Lister, 1978; Kunjukrishnam, 1979; Laczko, James, and Alltop, 1970; Mensies et al., 1980; Pendleton, 1980; Petrila et al., 1981; Pfeiffer, Eisenstein, and Dabbs, 1967; Roesch and Golding, 1977). The differences found are probably a reflection of the different criteria for referral among different jurisdictions as well as the varied procedures used to determine triability.

Competency to stand trial is only one of at least 28 situations where mental health and law interface (Weinstein, 1980); however, in terms of the number of individuals affected by it, it is probably the most crucial. If found incompetent to stand trial, a defendant can become enmeshed in an indeterminable limbo that some researchers have contended can violate due process to a speedy trial (Heller et al., 1981). Even though never convicted of a criminal offense nor civilly committed, many incompetent defendants have served what amounts to life sentences in various mental hospitals (Burt and Morris, 1972). McGarry (1965) found that more incompetent defendants had left Bridgewater Hospital in Massachusetts "by dying than all other avenues combined." Gambino (1978) described the case of an individual who spent 34 years in a hospital after being found incompetent to stand trial for stealing five dollars' worth of candy. Mahon (1968) reported the incident of another individual spending 64 years in a New York maximum security institution after being found incompetent to proceed on a burglary charge. Miller, Dawson, Dix, and Parnas (1971) found the average time 600 incompetent offenders spent in the hospital following commitment was over five years. Kerr and Roth (1984), in their survey of facilities treating mentally disturbed offenders, found that (in a sample of 13,636 adult offenders) 12.7% had been adjudicated incompetent to stand trial while another 6.9% were undergoing competency evaluations.

History of (and Major Court Decisions on) Competency to Stand Trial

The historical development of the laws on competency to stand trial is long. Since the 17th century, common law has held that an individual cannot be required to plead to a criminal charge or to stand trial if that person is so mentally disordered as to be unable to make a rational defense (Bennett, 1968; Lipsitt, Lelos, and McGarry, 1971). This test was known also as being "present in mind as well as body" (Marshall and Resnik, 1968). Only in the past several decades has the legal criteria for competency to stand trial been made more explicit in this country (Schreiber, 1978). The United States Supreme Court ruling in Dusky v. United States (1960) became the landmark case that established the contemporary basis for competency to stand trial. Virtually every court opinion today regarding competency reflects this two paragraph opinion (Slovenko, 1973). This ruling established the test of whether or not a defendant "has sufficient ability to consult with his lawyer with a reasonable degree of rational understanding--and whether he has a rational as well as factual understanding of the proceedings against him."

In 1972, the United States Supreme Court put an end to the indeterminate periods of commitment that faced defendants who were found to be incompetent to stand trial. This was the landmark Jackson v. Indiana decision, which held that a criminal defendant

who is committed because of his/her incompetency to proceed to trial cannot be held longer than is needed to determine whether there is a "substantial probability that he will attain the capacity in the foreseeable future."

In Pate v. Robinson (1966), the Supreme Court ruled that the issue of competency cannot be waived by a court and that the trial judge must raise the issue whenever, during the proceedings, there is a "bona fide doubt" as to the defendant's competency (Slovenko, 1973). This was, in some ways, a clarification of the Bishop v. United States (1956) ruling that held a defendant was constitutionally entitled to a determination of the issue of competency to stand trial. In Baxstrom v. Herold (1966), the Court ruled that a convicted criminal cannot be shifted into indeterminate mental hospitalization following a penal sentence without the benefit of the same standards and procedural protections that apply to civil commitments (Burt and Morris, 1972).

There were two other significant Supreme Court rulings that have had a direct bearing upon the issue of incompetency to stand trial. In Drope v. Missouri (1975), the Court felt that (in some cases at least) it might be permissible to defer a decision regarding a defendant's competency until after the criminal proceedings. This would have the advantage of assessing competency to stand trial directly as well as permitting disposition of cases that might be dismissed. In State v. Westbrook (1966), the Supreme Court ruled that a defendant may not be competent to conduct his/her own defense

even if that same defendant has been found competent to stand trial. Despite the Court's various rulings on the subject of pretrial competency, the standards remain vague and controversial. For a more comprehensive discussion of the development of law regarding pretrial competency, refer to Burt and Morris (1972), Roesch and Golding (1979), Silten and Tullis (1977), and especially Slovenko (1977).

Criteria for Competency to Stand Trial

Robey (1965) was one of the first to provide detailed criteria of the specific tasks required of a defendant to stand trial. These involved the comprehension of various courtroom proceedings, capacity to rationally advise counsel in the preparation and implementation of a defense, and susceptibility to decompensation under the stress of the trial process. The Model Penal Code (in Slovenko, 1977) defines an incompetent individual as one "who, as a result of mental disease or defect, lacks (the) capacity to understand the proceedings against him or to assist in his own defense." Roesch et al. (1981) stressed that the lack of this capacity to understand the proceedings or to cooperate effectively with counsel must be involuntary on the part of the accused.

Unlike the various tests for the insanity defense, the criteria that are associated with competency to stand trial are virtually identical from jurisdiction to jurisdiction (Litwack, 1980).

According to Litwack, "all that is required for (a finding of) competency" is for the defendant to be capable of:

> 1) Understanding the nature of the charges and the proceedings against him;
> 2) Rationally considering and evaluating the options available to him;
> 3) Cooperating with his attorney in his own defense; and 4) Maintaining these functions--and self-control--during a trial.

Lindsay (1977) proposed that the "three general areas of inquiry" an evaluator must ask when assessing pretrial competency are:

> 1) Does the accused understand the nature and object of the proceedings? (i.e., does he understand that this is a criminal trial; does he understand what an oath is; does he know what the offense is, etc.?)
> 2) Does the accused understand what his relationship is to the proceedings? (i.e., does he understand that he and not somebody else is on trial; that he has the right to rebut the charges; that he may be incarcerated if he is found guilty, etc.?)
> 3) Is the accused able to assist in his defense? (i.e., can he communicate with his counsel; is he capable of giving evidence himself, if necessary; can he make strategic decisions with respect to the conduct of his defense, etc.?)

Bennett (1968) stressed the importance of the defense counsel being able to establish rapport with the defendant, of the defendant being able to assist counsel in evaluating the testimony of witnesses, and of the defendant being able to meet the stresses of a long trial without his/her rationality breaking down. Bennett elaborated upon four specific "qualities of mind" a defendant should possess in order to be regarded as competent to stand trial;

these are: "1) Contact with reality, 2) minimum intelligence, 3) rationality, and 4) memory."

Ausness (1978) developed a list of sixteen minimum functions a defendant must possess in order to be considered competent to stand trial. These included: 1) An appreciation of what an arrest is; 2) The ability to remember and to report on treatment by the arresting officers; 3) The ability to exercise the privilege against self-incrimination; 4) The ability to exercise the right to counsel; 5) The capacity to relate what happened at the time of the crime; 6) An understanding of the legal defenses available; 7) The ability to testify intelligently on the stand; 8) The ability to decide how to plead; 9) An appreciation of the consequences of entering a plea of guilty; 10) The ability to persuade the court of the capacity to perform appropriately in the trial process; 11) An appreciation of the drama unfolding in the courtroom; 12) The ability to decide whether to waive rights to a jury trial; 13) The ability to approve, participate in, and adhere to a defense strategy; 14) The ability to recognize circumstances that may warrant receiving a lighter sentence; 15) An appreciation of the rights to appeal; and 16) The ability to dismiss a lawyer when representation is inadequate.

Marshall and Resnick (1968) found that most criteria correlated with competency to stand trial do not take into account degrees of competency, probably because the law admits to no variations, only black and white. Robey (1965) suggested that the severity of the

alleged crime can relate directly to the issue of competency; he observed that a charge of first degree murder involves the need for considerably greater ability to assist counsel than does standing trial for drunkenness. McGarry (1969) noted that because there can be such a wide variance in the quality of an attorney-client relationship, a defendant might well be able to effectively work with one attorney and not with another. Hess and Thomas (1963) questioned whether anyone other than a lawyer can really be capable of understanding the complex legal system sufficiently to be judged entirely competent to stand trial.

Finally, Schulman (1973) contended that mental illness per se is not equivalent to incompetency to stand trial. To find that an individual is mentally disturbed does not answer the question of whether or not that person is competent to stand trial. Likewise, the absence of a mental illness does not automatically equate with a person being competent. This issue is discussed in greater depth later in this chapter.

Overview of Competency Statutes in the United States

As a result of the 1972 Jackson decision, most states have reviewed their competency statutes; as of 1979, all but four had done so (Roesch and Golding, 1979). However, these authors found in a comprehensive review of the status of competency laws in all the states that many have not enacted legislation consistent with

the Jackson decision regarding limiting confinement of incompetent defendants. They discovered that 19 states and the District of Columbia still allowed for the automatic and indefinite commitment of incompetent defendants (including Tennessee, which only requires re-evaluations at either three or six month intervals depending on the offense--Forensic Training Manual, Revised, 1983). Of the remaining 31 states, eight have set a six month limit while most of the others have set limits under 18 months. Several states (e.g., Alabama, Louisiana, and Wisconsin) have tied the length of commitment to the length of the sentence which would have been given had the defendant been convicted. As of 1981, a total of 23 states had statutorily defined maximum periods of confinement for defendants found incompetent to stand trial (Kerr and Roth, 1984).

Roesch and Golding (1979) also found that most states disallowed trials for incompetent defendants, consistent with the Dusky decision. However, four states (Hawaii, Massachusetts, South Carolina, and West Virginia) allowed for the possibility of a non-jury court hearing to try the merits of a case for defendants found to be incompetent, consistent with the Drope decision; if the court finds lack of substantial evidence to support a conviction, then the defendant is ordered released from custody immediately.

In 27 states and the District of Columbia, there are no guidelines for dismissal of criminal charges following an adjudication of incompetency (Roesch and Golding, 1979). In other words, these states allow charges to remain pending indefinitely. The end result

is often that these charges later become the grounds for civil commitment, since (with incompetent defendants) a finding of incompetency usually automatically implies guilt. In summary, then, despite the relatively uniform criteria for competency to stand trial among the various states (at least in a theoretical sense), the legal disposition of incompetent defendants varies widely from one jurisdiction to another.

Legal versus Psychiatric Issues in Competency Determinations

The question of incompetency to stand trial, as well as the procedures used for determining competency, is a legal rather than a psychiatric matter (Hess and Thomas, 1963). The psychiatrist and psychologist merely serve as advisors to the court and do not actually make the final decision regarding the competency of a defendant (Robey, 1965). Nevertheless, the court usually accepts without question the judgment of mental health professionals regarding the competency of a defendant to stand trial (McGarry, 1965; Roesch and Golding, 1978). Despite this, Litwack (1980) contended that both testifying psychiatrists as well as judges "are often ignorant of the criteria for competency." Ausness (1978) suggested that it is safest to assume that neither the District Attorney, the defense attorney, nor any of the witnesses, professional or not, "have the vaguest idea" about what behaviors or attributes of a defendant contribute to their pretrial competency. Weihofen (1956) found that

clear concurrence of opinion occurs only in those cases where a defendant is so uncommunicative or grossly disturbed as to create a public spectacle and embarass the decorum of the court.

Although competency to stand trial is primarily a legal rather than a psychiatric concept, a study by Schreiber (1978) found that mental health professionals usually understood the legal criteria for marking decisions about competency to stand trial better than lawyers and judges. Schreiber found that most lawyers (in every state) confused the issue of pretrial competency with insanity at the time of the offense (i.e., NGRI), assuming that they were identical. Fitzgerald, Peszke, and Goodwin (1978) found that, for the "average psychiatrist," the issues of competency and insanity at the time of the offense are often confused. Van and Morganroth (1964) found that, in a study of seven psychiatrists who regularly performed competency examinations in a New York psychiatric hospital, five had no awareness of the specific criteria associated with pretrial competency; four directly equated the presence of a mental illness with incompetency. Bennett (1968) observed that the concept of pretrial competency is not related to the kinds of information and data psychiatrists are trained to gather. Slovenko (1973) concurred, stating that the psychiatrist often "has no special knowledge of what is required to understand criminal charges or to assist counsel," recommending that the matter be left to the defendant's own attorney to decide.

Most mental health professionals, when asked by a court to

address the issue of competency to stand trial, first evaluate the presence or absence of mental illness in a defendant and then generalize their findings to inferences about competency (McGarry, 1965; Roesch, 1979). This is primarily the result of the failure of the courts to provide specific guidelines for making competency recommendations in addition to the (often vague) wording of legal statutes.

Most states (29 plus the District of Columbia) limit the testimony of pretrial competency to physicians or psychiatrists (Sobel, 1978). However, at the time of that review, 12 states permitted the testimony of clinical psychologists, although only five permitted a clinical psychologist's testimony independent of a physician's or psychiatrist's supervision. Nevertheless, the role of psychologists in the courtroom is expanding. In 1971, several states (e.g., Arkansas, Nebraska, and New Jersey) disallowed any psychological testimony by psychologists (Pacht et al., 1973); prior to the Supreme Court decision of Jenkins v. United States (1962), most judges would allow only psychiatrists and medical practitioners to testify on questions of mental disease or illness. By 1977 (Perlin, 1977), courts widely accepted the testimony of forensic psychologists. One recent study (Petrilla and Poythress, 1983) actually found that the quality and thoroughness of psychologists' pretrial evaluations to be superior to those of psychiatrists. In fact, Ennis and Litwack (1974) have questioned whether psychiatrists are any better than lay persons in making such decisions as pretrial competency. For a thorough analysis of psychologists' role as expert witnesses, see Gass (1979).

Reasons for and Origins of Competency Referrals

The question of whether a defendant is fit to stand trial may be raised by the defense attorney, the District Attorney, the judge, and (in some jurisdictions) any interested party (Bennett, 1968; Cooke, Johnston, and Pogany, 1973). Fitzgerald, Peszke, and Goodwin (1978) and Slovenko (1977) have observed that requests for competency evaluations frequently arise from legal maneuvering or strategy on the part of the defense or prosecuting attorney. Schulman (1973) also found that the purposes for seeking psychiatric examinations for competency often have nothing to do with the mental health (or lack thereof) of the defendant; rather, referrals are often made as "part of the gamesmanship employed . . . in criminal cases." Eizenstat (1968), in reviewing the abuses perpetrated in the competency arena, found that some states (e.g., Massachusetts) often used a request for competency evaluations as a "short circuit" to bypass more stringent and involved civil commitment procedures. Hess and Thomas (1963) found that (in Michigan, at least) the basis for a request for a competency assessment often had little to do with a defendant's mental condition; they suggested that the issue was often raised in order to dispose of cases where there was little recourse under the law.

Roesch and Golding (1978), in a study conducted in North Carolina, found that many attorneys requested competency evaluations as

a way of obtaining mental health input and recommendations (e.g., recommendations for treatment or alternatives to prison) which could later be used in plea-bargaining or sentencing. McGarry (1969) suggested that pretrial examinations may also be a delaying tactic on the part of the defense attorney "giving complaintants a chance to change their minds and withdraw charges or simply lose interest, or perhaps . . . until another judge is sitting."

The origins of competency referrals vary widely from jurisdiction to jurisdiction, depending upon such factors as local legal precedent, attitudes of individual judges (and attorneys) regarding such evaluations, and state laws. Petrila et al. (1981), in a study conducted in Missouri, found that pretrial evaluations were most frequently requested by defense attorneys; interestingly, the identities of the defense attorneys could not even be determined in nearly half of the cases. Smith (1976), however, found that (at least for misdemeanor cases) "virtually all" referrals were instigated by either the prosecuting attorney or the judge, not the defense attorney. Slovenko (1977) also found that prosecuting attorneys raised the issue of competency more often than the defense. Cooke (1969), on the other hand, in a study in Pennsylvania, found that most of the requests for competency evaluations were initiated by the judge rather than the defense or the prosecution.

Sabot (1971) suggested that the issue of a defendant's competency to stand trial is a complex dispositional question. Factors that may hinge upon whether or not a defendant will be referred for a

competency examination include: 1) Intrapsychic (e.g., anxiety or depression); 2) Personality disorders that create distress for legal personnel; 3) Type of charge (e.g., bizarre, pitiable, notorious, or complicated); 4) Legal and psychiatric history; 5) Interactions between participants in the legal process (i.e., judge and defendant, defense attorney and defendant, prosecuting attorney and defendant); 6) Legal maneuvering; 7) History of trauma or socioeconomic deprivation (or other conditions that call for a more "humane" disposition than conviction); and 8) Degree of dissonance between the values and expectations of the legal personnel and the defendant's life style and values.

Slovenko (1973) summed up the process of referral by stating that "the court does not want to know whether or not the accused is capable of standing trial; it wants to know whether the accused is likely to be dangerous or unduly bothersome in the community." Further, Slovenko stated that the crucial question is not the competency of the accused but rather the competency of his/her attorney. Moreover, since a criminal trial is a relative "rarity" (as many as 96% of cases are resolved by a private plea-bargaining process between the prosecutor and defense lawyer beforehand--Ennis, 1972), a distinction should be made between competency to stand trial and competency to plead. Clearly, the whole notion of why defendants are referred for pretrial evaluations is riddled with controversy and remains a complex dilemma for both the legal and psychiatric professions.

Violation of Legal Rights Controversy in Competency Commitments

The infringements upon a defendant's legal rights as a consequence of being adjudicated incompetent to stand trial have already been discussed peripherally to other issues. Roesch and Golding (1978) have argued that the procedures used to determine competency to stand trial may, rather than safeguarding legal rights, ironically have resulted in the increased infringement of the rights of defendants. One study (in Salmon, 1975) found that the average time spent by psychiatrists in competency examinations was only 9.2 minutes, probably far too short a period for most psychiatrists to accurately assess the often highly complex issue of incompetency to stand trial.

Roesch and Golding (1978) found that almost half of the judges they approached in North Carolina believed that incompetent defendants should be automatically committed, regardless of any assessment of their dangerousness. Once committed, courts usually lose all interest in the defendant (Hess and Thomas, 1963) and judges are often reluctant later to find a defendant competent once they have been classified as unfit to proceed (Bennett, 1968). Once adjudicated incompetent, treatment is often minimal and usually occurs in institutions under conditions of strict custody which may violate the principle of "least restrictive alternative" (Convington v. Harris, 1969; Golten, 1972; Kaufman, 1972; Lake v. Cameron, 1966;

United States v. Klein, 1963). Moreover, defendants found to be incompetent and committed to psychiatric facilities are often held longer (frequently for life prior to the 1972 Jackson v. Indiana decision) than had they been sentenced to prison on the very charges they were accused, but never convicted, of committing (Hess and Thomas, 1963; Janis, 1974; Kaufman, 1972; McGarry, 1971).

Other significant disadvantages for the defendant follow the adjudication of incompetency to stand trial. Commitment to a psychiatric institution, often a forensic facility (which Guttmacher, 1958, found to be generally poorer facilities than those for civilly committed patients), follows in virtually every care (Bennett, 1968). Once committed, the defendant remains either until competency to stand trial is restored or until it is determined that competency is never likely to be achieved (for a discussion of the laws of specific states regarding lengths of, and criteria for, confinement of incompetent defendants, see Roesch and Golding, 1979). Schreiber (1978) questioned whether prolonged confinement of such individuals can cause, rather than a restoration of competency, a regression and decreased likelihood of ever regaining competency.

The commitment criteria for incompetent defendants is typically far less stringent than the criteria for civil commitment; the former does not require the proof of dangerousness to self or others that is required for civil commitment (Roesch and Golding, 1978). Unlike criminal defendants who do not undergo competency evaluations, defendants ordered by the court to submit to such examinations are

often refused bail during the period of assessment (Golten, 1972; Kaufman, 1972; Marcey v. Harris, 1968; Stone, 1975).

Once competency has been restored and a defendant is returned by the psychiatric facility to the court, in many cases the charges had already been dropped (Bennett, 1968; Huey, 1978). McGarry (1969) found that, in some cases, the charges had been dismissed immediately after the commitment and neither the defendant nor the hospital were ever informed of this action. Roesch and Golding (1977) found that the charges were dismissed in a majority of the patients committed for being unfit to proceed to trial. Williams and Miller (1981) found that over half of the defendants in their study who were returned to the court as having regained competency to stand trial were subsequently returned to the hospital for continued hospitalization, often for indefinite periods.

Slovenko (1973) conducted extensive interviews with patients who had been committed to forensic institutions for being incompetent to stand trial; he concluded that half were, in fact, competent to proceed. A quarter, in maintained on psychiatric medications, could also meet the criteria for triability. Only 25% would probably never be able to meet the criteria for competency, despite treatment.

The notion of "synthetic" or "chemical" competency (i.e., competency that is maintained only by the use of prescription, most commonly psychotropic, medications) has not been reviewed extensively in the literature on pretrial competency. In many jurisdictions in

this country, an accused is usually required to appear in court without any artificial aids to insure competency; however, the rulings have been inconsistent and have frequently been challenged in the court system. In those jurisdictions that do permit "chemical" competency, pleas by defendants to be tried without medications (so as not to appear "drugged" or "glassy-eyed") have rarely been successful (Slovenko, 1977). In one particular case (State v. Jojola, 1976) it was ruled that Thorazine (a Smith-Kline-French brand of chlorpromazine, an antipsychotic medication) was permissible because it allowed the defendant's mind to function as though it were not disturbed. In Michigan (Michigan Comprehensive Laws Annotated, 1976) medications may be used with a defendant if the treating physician or psychiatrist provides a statement that the medications will not "adversely affect" that individual's capacity to understand the proceedings or to assist counsel with their defense. George (1976) noted that medications may be barred whenever its use would prevent the jury from getting a realistic picture of a defendant's "irrationality or lack of control under pressure" in the establishment of an insanity defense (or NGRI). In Illinois, psychotropic medications are legally permitted if they help to restore or maintain pretrial competency; however, the choice of proceeding with or without such medications remains the option of the defendant (in Slovenko, 1977). In Tennessee, the issue of "chemical" competency exists in case law but not in judicial law, stemming primarily from the State of Tennessee v. Stacy (1977) case

in which medications for the restoration of competency was acceptable to the court of Criminal Appeals (reversing a lower court ruling). Overall, there appears to be considerable discrepancy among the various states with regard to the notion of "chemical" competency, a situation that is likely to exist until the Supreme Court rules on the issue.

Proposals for Reform of Competency Statutes

Because of the apparent violations of human rights discussed earlier, many critics have proposed changes in the system of assessing and institutionalizing incompetent offenders. Some (e.g., Slovenko, 1973) have even proposed that the entire notion of competency to stand trial, as well as the establishment of special units for the evaluation and treatment of incompetent offenders, be abolished. Others have challenged the presumption that mental health professionals can assess triability better than anyone else. However, most proposals proffered by researchers in this area have called for a strictly defined limitation on the amount of time a defendant can be held to remedy incompetency. Additionally, most writers in the field have proposed a definite disposition of the pending charges in cases of long-standing or permanent incompetency, either by trial or by dropping the charges (Burt and Morris, 1972; Roesch and Golding, 1977; Stone, 1975).

Ennis (1972) observed that since between 90 and 95% of all criminal defendants never actually reach the trial stage, the notion of competency to stand trial is probably meaningless. He recommended that, instead of competency to stand trial (which would be an unlikely circumstance anyway), the laws should be changed to reflect an ability to understand the plea-bargaining process and the consequences of a guilty verdict. Ennis further recommended that, since only a small percentage of referred defendants are actually found to be incompetent, evaluations can and should be performed at the jail rather than in a hospital setting (which often takes a month or more). Roesch and Golding (1979) found that even after 43 days (the average length of an inpatient pretrial evaluation), the final decision was overwhelmingly the same as the one made by the psychiatrist after the initial interview.

The role of the psychologist and psychiatrist in evaluating pretrial competency has been controversial. Some attorneys (e.g., Ennis, 1969) have recommended that such evaluations not be performed by mental health personnel:

> If an attorney thinks his client is sufficiently competent to go to trial, that opinion should constitute *prima facie* evidence of competence, to be overcome only by clear and convincing evidence (including psychiatric testimony) to the contrary.

Other investigators have stressed the value of mental health input into competency evaluations; Cooke and Jackson (1971) argued that

such assessments are too complex to simply be left to be discretion of defendants' attorneys.

The Supreme Court decision of Jackson v. Indiana (1972) ruled that the indefinite commitment of incompetent defendants to mental institutions was unconstitutional. However, the Court did not prescribe what length of commitment would be appropriate (Burt and Morris, 1972). Jackson was confined for three and a half years, but the Court was unclear regarding whether this period of time was unreasonable in the particular instance of Jackson or whether it applied to all cases (Roesch and Golding, 1979). Most proposals dealing with time limits on treatment and/or disposition of pending charges have recommended a maximum of six months with the possibility of a six month extension if there is a substantial likelihood for recovery of competency during that time. For those defendants whose competency to stand trial could not be restored within a reasonable period some procedure for dismissal of criminal charges has been widely recommended. Salmon (1975) suggested that, if the defendant is not committable under civil commitment procedures (i.e., does not present a significant risk of danger to self or others), then some form of "psychiatric parole" or mandatory outpatient treatment might be considered. For an excellent review of these and other proposals, refer to Roesch and Golding (1979).

While the Supreme Court has ruled it unconstitutional to require an incompetent defendant to stand trial (Dusky v. United States, 1960), there has been increasing sentiment to significantly

revise or reinterpret this ruling. Bacon (1969) recommended that special pretrial hearings be implemented in order to evaluate defendants' competency firsthand using a "prejudice-in-fact" test. Burt and Morris (1972), while agreeing that the trial of incompetent defendants may indeed be unfair, nevertheless felt that it would be more unfair to withhold the right to a speedy trial. These authors have recommended that certain safeguards be added that would minimize the possible effects imposed by a defendant's incompetence in a trial situation, including "expanding pretrial discovery, a higher burden of proof . . . special instructions to the jury, and a post-conviction remedy" (which would allow for the conviction to be set aside if subsequent evidence showed that the defendant's incompetency led to a reasonable doubt about a guilty verdict). Roesch (1979) also felt that if, following a trial, a defendant were found to be both guilty and incompetent, the verdict could be dismissed. Some jurisdictions have begun to institute reforms allowing a defendant to plead NGRI even if that individual is incompetent to stand trial (Weinstein, 1980). Both Litwack (1980) and McGarry (1969) have argued that justice and mental health are best served by giving defendants the benefit of the doubt regarding competency and completing the criminal proceedings instead of permitting them to lie in a "psycho-legal limbo" for indefinite periods of time.

For a discussion of many of these as well as other salient recommendations for changes in the assessment and treatment of incompetent offenders, refer to the National Institute of Mental Health

Center for Studies of Crime and Delinquency (1973), Peszke (1980), Roesch and Golding (1979), Salmon (1975), Schwartz (1971), and Slovenko (1973).

Malingering as a Factor in Competency Evaluations

Malingering, or the attempt to feign a mental illness, is apparently not a significant problem among defendants undergoing competency evaluations. Litwack (1980) noted that malingering is relatively rare with this population because it is not in the best interest of defendants to be adjudicated incompetent. Unlike the defendant who feigns insanity at the time of the crime (i.e., NGRI), who can hope to gain permanent dismissal from criminal charges, the incompetent defendant (especially in the current legal climate of extended institutionalization without the dismissal of criminal responsibility) has little or nothing to gain. When an attempt at malingering is made by a defendant undergoing a competency evaluation, it is often in the form of a feigned amnesia ("I don't remember") which in and of itself does not render an individual incompetent (Koson, 1973; Weinstein, 1980).

Reliability of Judgments of Pretrial Incompetency

Several studies have evaluated the reliability of the judgments made by independent examiners regarding incompetency to stand trial.

Poythress and Stock (1980) found 100% agreement between pairs of forensic psychologists for 44 pretrial defendants on this issue, concluding that well-trained forensic examiners can perform competency evaluations "with a very high degree of reliability." Roesch (1978) performed a similar study and found a 97% agreement (29 out of 30 assessments) on competency. Goldstein and Stone (1977) found a 97.5% agreement for 1404 evaluations performed sequentially by two forensic psychiatrists (however, almost 25% of the cases in the original sample of 1734 were excluded as needing additional evaluation). Raifman (1979) found an 82.9% agreement among independent pairs of psychiatrists in the assessment of pretrial competency (but did not report base rates for competency and incompetency in the jurisdiction of the study). Overall, these results are significantly better than the relatively poor reliability of psychiatric judgments for such issues as dangerousness and diagnosis (Spitzer and Fleiss, 1974). For an excellent review of the research relevant to this area, refer to Ennis and Litwack (1974) or Poythress and Stock (1980).

2. SURVEY OF RECENT LITERATURE

Non-Psychometric Differences Between Competent and Incompetent Offenders

There have been a number of investigations which have examined the demographic characteristics of defendants referred for pretrial psychiatric evaluations; however, comparably few of these have

specifically examined the differences between those adjudicated competent to stand trial and those not. The following characteristics have been most commonly examined in the relevant research: Age, sex, race, seriousness of alleged crime, marital status, psychiatric history, educational level, and diagnosis.

Age

There has been close agreement among the various studies regarding the age of defendants undergoing pretrial evaluations. For example, Cooke (1969) found a mean age of 29.3 years (with a median age of 24.5 years); Daniel and Harris (1981) found a mean age of 31.1 years (with a range of 14-54 years); Daniel et al. (in press) found a mean age of 31.6 years (with a range of 17-61 years); Heller et al. (1981) found a mean age of 30.1 years (with a range of 14-74 years); and Petrila et al. (1981) found a mean age of 28.7 years, a mode age of 22 years, and a range of 16-83 years. In general, the mean ages reported by the various studies surveyed ranged from 28.0 years to 32.4 years; standard deviations, when reported, ranged from 12.42 to 13.21 years (although measures of variability were often not reported). Four studies have compared the relative ages of competent versus incompetent defendants. Three of these studies (Baskin and Klein, 1981; Daniel et al., in press; Roesch et al., 1981) found no significant difference between the ages of competent and incompetent offenders; the remaining study (Sikorski and Whitman, 1977), in assessing 564 female defendants in Michigan, did find a significant difference.

Sex

There has been wide variability in the studies examining the relative proportions of males and females referred for competency evaluations. Some have attempted to compare their findings with the arrest rates (e.g., Pogany, 1969). Few have attempted to compare the relative differences with regard to sex to the final decision of competency to stand trial. In general, the percentage of females referred for pretrial evaluations of competency has ranged from 4% to almost 12% (Bluestone and Melella, 1979; Heller et al., 1981; Kerr and Roth, 1984; Petrila et al. (1981); Roesch, 1979). Pogany (1969), finding 8% female in 326 referrals for pretrial examinations, discovered that this rate was much lower than the six-to-one male-to-female ratio shown by the F.B.I. crime rates for the nation. Sikorski and Benedek (1977), comparing the characteristics of males and females referred for competency evaluations, found that significantly more females were unemployed, non-White, over age 40, and had more previous psychiatric hospitalizations than males; they did not find any significant differences among males and females with regard to competency status. Roesch (1979) also found no differences between males and females on the competency issue.

Race

Most studies did not find any significant racial differences among defendants who were referred for pretrial competency evaluations. Cooke, Pogany, and Johnston (1974) found no significant

differences in demographic characteristics of 164 Whites and 141 Blacks referred for such evaluations. Kerr and Roth (1984), in their survey of 126 forensic facilities, found that 51.6% were White, a higher percentage than the general prison population of 44.4% White. Roesch (1979) found that the 41% Black ratio of defendants referred for competency evaluations in North Carolina corresponded with the arrest rates in that state. In addition, Petrila et al. (1981) found that the 33.3% non-White proportion of their Missouri sample of 480 defendants corresponded almost exactly with the racial composition of the arrest population. Bruce (1978) and Daniel et al. (in press) found that Blacks were no more likely to be found incompetent than Whites; however, Sikorski and Whitman (1977) concluded that race was significantly related to recommendations of incompetency to stand trial (in their exclusively female sample).

Seriousness and Type of Alleged Crime

Overall, there has been little consensus regarding the type of crime typifying defendants referred for competency evaluations. Defendants charged with crimes ranging all the way from property offenses and misdemeanors to first degree murder are being referred for pretrial assessments. The differences reported probably reflect more the specific referral policies of the various jurisdictions rather than any inherent predisposition of incompetent offenders to commit certain types of crimes. Balcanoff and McGarry (1969) and Drummond (in Cooke, Pogany, and Johnston, 1974) found that most

referrals were charged with burglary, larceny, and theft. Cooke (1969) found the largest number of referrals were charged with various forms of stealing. Petrila et al. (1981) found that assault was the most common crime of referrals. Cooke, Pogany, and Johnston (1974) found that most referrals sent for competency examinations were charged with homicide; they corrected for the arrest rate in that state (Michigan) and found that homicide was four times more frequent than the second most common offense, arson. Mehl (1981) found that homicide, arson, and sex crimes were most common relative to the general arrest rate for each crime (in California). Kerr and Roth (1984) found, in their survey of 126 forensic institutions (N=12,253 adults), that 18.2% were charged with homicide, 11.3% with rape, and 11.9% with other sexual offenses; a total of 68.7% were charged with crimes against persons.

Only two studies have examined the relative differences between competent and incompetent offenders with regard to the type of pending criminal charge (Daniel et al., in press; Roesch et al., 1981). Neither found a significant difference between the two groups on this variable.

Only one study (Daniel et al., in press) has looked at the relative differences between competent and incompetent groups with regard to prior criminal record. These researchers found a significant ($p < .01$) negative correlation between past convictions and incompetency to stand trial. Williams and Miller (1981) reported that 75% of incompetent defendants had prior criminal charges but did not

report on competent defendants who had undergone evaluation. Rollin (1965) and Laczko, James, and Alltop (1970) reported that between 36% and 40% of all referrals for pretrial evaluations for competency had prior criminal convictions; these researchers did not differentially compare competent and incompetent individuals.

Marital Status

Three studies have examined the relationship of marital status to pretrial competency. Roesch et al. (1981) found that incompetent defendants were significantly more likely to be living alone and to be unmarried than competent ones. Baskin and Klein (1981) and Daniel et al. (in press) found no relationship between marital status and pretrial competency.

Psychiatric History

Most studies examining the relationship of previous inpatient hospitalizations in psychiatric facilities to pretrial referrals have not differentially viewed competency and incompetency. The percentage of referred pretrial defendants having a history of previous inpatient psychiatric treatment has ranged from about 14% to 68% (Bluestone and Melella, 1979; Daniel and Harris, 1981; Laczko, James, and Alltop, 1970; Petrila et al., 1981; Williams and Miller, 1981). These differences appear to be either a function of the referral philosophy in different jurisdictions or the specific location of the facility performing the evaluation (i.e., areas of higher or lower density of patients with psychiatric histories). Two studies

have examined the relationship of prior psychiatric inpatient treatment to competency (Daniel et al., in press; Roesch, 1979); these found that incompetent defendants were significantly more likely to have previous psychiatric histories than competent defendants.

Educational Level

Only one study in the available literature has compared the educational levels of competent and incompetent criminal defendants. Daniel et al. (in press) found that incompetent defendants had significantly ($p < .05$) lower levels of educational achievement than did the competent defendants. For pretrial referrals in general, the number of defendants completing high school ranged from 14% to 37% (Bluestone and Melella, 1979; Laczko et al, 1970; McGarry, 1965; Petrila et al., 1981; Williams and Miller, 1981).

Diagnosis

Although most studies have found a positive correlation between a psychotic diagnosis and pretrial incompetency (Cooke, 1969; Daniel et al., in press; Ennis, 1972; Hess and Thomas, 1963; McGarry, 1965; Roesch and Golding, 1979; Sikorski and Whitman, 1977), the relationship is far from perfect (Heller et al., 1981). While a significant percentage of pretrial patients do receive diagnoses of various mental illnesses, ranging from 16.8% to as high as 47%, only a small percentage of these individuals are subsequently found to be incompetent to stand trial (Baskin and Klein, 1981; Bluestone, Melella,

and Baskin, 1981; Cooke, Johnston, and Pogany, 1973; Kerr and Roth, 1984; Laczko, James, and Alltop, 1970; Petrila et al., 1981).

Clearly, incompetence and psychiatric illness do not meet identical criteria. Despite this, both psychiatrists and members of the legal profession tend to directly equate mental illness with incompetency, probably because the law provides only vague criteria for the latter (Robey, 1965). Although psychiatric opinion has yet to be challenged in court regarding this issue (McGarry, 1969), there are legal precedents that psychotic persons (i.e., diagnosed as having a major disorganization of personality that includes the various schizophrenias, bipolar illnesses, and certain paranoid disorders as delineated in DSM-III, 1980) can be competent to stand trial (Ferguer v. United States, 1962; Higgins v. McGrath, 1951; Lyles v. United States, 1957; People v. Heral, 1976; Swisher v. United States, 1965; United States v. Adams, 1969; United States v. Horowitz, 1973). In fact, Marshall and Resnick (1968) reported that certain paranoid individuals (i.e., exhibiting symptoms of heightened suspiciousness with some encapsulated delusional thinking but who otherwise showed little of the gross disorganization of thought characteristic of schizophrenia) can be hyper-competent. Since a diagnosis of psychosis can encompass a wide variety of disorders with levels of severity ranging from "in remission" to "acute exacerbation" (DSM-III, 1980), such a label does little to satisfy the question of an individual's pretrial competency. The various criteria established for competency to stand trial are not mutually

exclusive of the symptoms that can accompany a psychotic maladjustment; however, as the severity of a psychosis worsens, the manifestation of such symptoms increasingly can interfere with competency.

Based on the research then, incompetent defendants tend to receive psychotic diagnoses more often than competent defendants (e.g., Siomopoulos, 1978); however, no available evidence supports a direct link between psychiatric symptomotology and incompetency (Roesch, 1979). Many psychotic defendants are found to be competent to stand trial while a significant number of non-psychotic defendants fail to meet all the criteria for competency (Pfeiffer, Eisenstein, and Dabbs, 1967). Roesch et al. (1981) found that 31% of competent defendants had some form of psychosis. Additionally, the correlation between psychosis and pretrial incompetency is often spuriously high due to the automatic propensity on the part of many psychiatrists to make decisions about incompetency purely on the basis of a diagnosis rather than on the quite different criteria for triability. It has been suggested (Roesch, 1979) that many examining psychiatrists diagnose incompetent defendants as psychotic after they have decided upon the competency issue in order to achieve some sort of internal consistency, thus contaminating the correlative relationship. Finally, as noted earlier, the reliability of psychiatric diagnosis is sufficiently poor (Spitzer and Fleiss, 1974) to cast grave suspicion on its value in predicting pretrial incompetency.

Psychometric Differences Between Competent and Incompetent Offenders

The role of psychological testing in assisting with the determination of competency to stand trial has come under increasing scutiny over the past several decades. While the vast majority of defendants referred for such evaluations are subjected to a variety of psychological tests (Exner, 1980) designed to measure aspects of a defendant's personality, cognitive (i.e., intellectual) capacities, and neuropsychological functioning, their direct value in addressing the specific issues associated with pretrial competency remains unclear. Cooke and Jackson (1971) felt that the interpretation of test data may be critically important in the evaluation of competency while providing the secondary benefit of assisting the court in making appropriate dispositions with regard to treatment or conditions of parole.

Not all researchers in this area have agreed with the value of psychological tests in determining pretrial competency. Roesch and Golding (1978) questioned whether an evaluation which focused primarily upon psychological testing provided an appropriate basis for reaching decisions about competency. Roesch (1979) and Roesch et al. (1981) have found that "the additional information made available from . . . psychological tests contributed little to the final decision" of competency or incompetency. Litwack (1980) went further, stating that "traditional psychological tests have no role in the

determination of competency to stand trial" with the possible exception of assessing malingering. In particular, Litwack viewed the use of intelligence testing as "irrelevant" to the question of whether or not a defendant understands his/her legal situation sufficiently to assist in their defense.

Competency Screening Test

In an attempt to more directly assess competency to stand trial, researchers have begun to develop checklists and inventories which address specifically those skills and knowledge that relate to the trial procedure. One of the first of these was developed by Robey (1965). Steadman (1971) developed an instrument designed to be used in court hearings to determine the ability of a defendant to proceed with the trial, called the Competency Hearing Schedule. Lipsitt, Lelos, and McGarry (1971) developed a 22 question sentence-completion format examination called the Competency Screening Test, which includes items relevant to the legal criteria for competency. These researchers found that high scores on this test correlated highly with independent decisions, based upon traditional criteria, of competency to stand trial. McGarry (1973) later expanded the test to include more questions and altered it so as to leave more discretion to the evaluator, calling it the Competency Assessment Instrument. Schreiber (1978) investigated the use of the Competency Assessment Instrument in four states and found that most respondents viewed it as useful or even indispensable in the assessment of

pretrial competency. Shatin (1979) developed a brief, five item version of the Competency Screening Test which was highly correlated with the full test (r=.92) and with verbal intelligence.

There have been some substantive objections to the use of these instruments in evaluating competency. Brakel (1974) argued that the test measured more a defendant's acceptance of prevailing legal ideologies than the actual practices of the criminal justice system (e.g., plea-bargaining). Daniel et al. (in press) found a Pearson r correlation of only .40 between the results of the Competency Assessment Instrument and the final recommendation of pretrial competency, much lower than many other more easily accessible variables examined in that study.

Intelligence Testing and Pretrial Competency

The effect of intelligence upon competency to stand trial has generally been recognized, particularly for lower I.Q. groups. However, this relationship is far from perfect. Robey (1965) noted that intellectual deficiency, in and of itself, rarely serves to render a person incompetent to stand trial. Courts have generally refused to set lower I.Q. limits on competency and many individuals have been found competent to stand trial with I.Q.s of 60 and less (Exner, 1980; Hess and Thomas, 1963). At the extreme end, however, with defendants whose I.Q.s are in the severely and profoundly retarded ranges, the correlation between I.Q. and incompetency is probably very high, although such individuals are rarely referred

for pretrial evaluations and are almost invariably already in long-term institutional settings (Bennett, 1968).

Even if a defendant is diagnosed as mentally retarded, a fair trial is possible unless that individual is also, specifically, incompetent according to the legal standard (Heller et al., 1981). Person (1972) suggested that an I.Q. of 70 and below, while not to be regarded as proof of incompetency, should be seen as a signal to at least raise the issue.

Cooke (1969), in a study of 215 defendants referred for competency evaluations, found that, as a whole, the group exhibited intellectual levels (using the WAIS) in the average range. Additionally, he did not find a significant difference between the I.Q.s of competent and incompetent defendants. Bluestone, Melella, and Baskin (1981), on the other hand, found that the average intellectual level of pretrial competency referrals was lower than that of the general population. Heller et al. (1981) found that, in a sample of 410 pretrial referrals, defendants were significantly more likely to be seen as incompetent if their I.Q. scores were low (i.e., below 79); using a combined criteria of an I.Q. less than 79 and a psychotic diagnosis, these researchers found that 100% of the defendants meeting these criteria were incompetent to stand trial. However, they also found that about 4% of those declared to be incompetent were neither diagnosed psychotic nor had I.Q.s below 79. Mehl (1981), in a study of 34 pretrial competency referrals, found that, of those already diagnosed as mentally retarded, there was not

a significant difference in I.Q. scores among those found competent or incompetent. Daniel et al. (in press) failed to find I.Q. as a significant factor discriminating competent and incompetent defendants. Exner (1980) warned that the issue of competency cannot be settled by an I.Q. score alone, although few have proposed using intelligence test scores in isolation to make such decisions.

The MMPI and Pretrial Competency

After an extensive review of the extant literature, only three studies were found which used the MMPI to differentiate between competent and incompetent defendants. Cooke (1969) administered the MMPI to 215 pretrial defendants (43.2% of whom were incompetent to stand trial) undergoing competency evaluations in Pennsylvania. He found that, although the mean profiles for both the competent and incompetent groups had high point MMPI codes of 4-8, the incompetent group was significantly ($p < .05$) higher than the competent group on scales F, 2, 3, 6, 7, and 8. The incompetent group produced a mean profile with peaks on scales 2, 4, and 8 while the competent group produced essentially a 4-spike profile (Lachar, 1974). Cooke then attempted to combine the MMPI with such variables as diagnosis in order to derive a predictive equation for pretrial incompetency. He concluded, however, that his study "failed to produce a prediction formula significantly better than base rates . . . (and that) there are no consistent criteria for competency."

Maxson and Neuringer (1970) administered the MMPI to 594 males undergoing pretrial competency evaluations, 538 (90.6%) of whom

were judged to be competent to stand trial. These researchers found that scales F and 6 were significantly ($p < .01$) higher in the incompetent group. They concluded that "the MMPI can successfully differentiate between legally incompetent and competent individuals." There were several defects in this study, however, which the researchers did not acknowledge. First, they excluded 268 individuals from their original sample of 862 Ss who were not, for unexplained reasons, administered the MMPI. No attempt was made to examine the difference between the group taking the MMPI and the group not taking the MMPI. Cooke, Pogany, and Johnston (1974) warned that a significant main effect for MMPI administration in terms of competency is that it is more often administered to competent patients than incompetent ones. The second major difficulty with the Maxson and Neuringer (1970) study involved their failure to examine their results with reference to base rates (see Meehl and Rosen, 1955). Since 90.6% of their sample was competent to stand trial, this is the rate of prediction that could be achieved if it were assumed that all Ss in the study were competent. In reviewing their various cutting scores for the two scales they found to significantly differentiate competent and incompetent defendants, it was found that these scales were actually poorer than the base rate in predicting group membership.

Daniel et al. (in press) administered the MMPI to 120 pretrial defendants in Missouri (as part of 71 widely diverse variables examined in an elaborate discriminant function analysis of pretrial competency and NGRI); they found that none of the standard MMPI

scales significantly ($p < .05$) correlated with psychiatric recommendations of pretrial competency (i.e., no Pearson correlation exceeded 0.14). Refer to Table I (page 53) for a summary of the Cooke (1969), Maxson and Neuringer (1970), and Daniel et al. (in press) studies.

MMPI Scale Development Methodology

Although there have been more special MMPI scales developed than there are items on the entire inventory (Butcher and Tellegen, 1978), most are psychometrically unsound, largely redundant with the basic scales, and have been developed on small samples usually without cross-validation. The specific criteria advanced by these authors for the development of special MMPI scales has been discussed in Chapter I. Clopton (1978) and Darlington and Bishop (1966) have provided step-by-step procedures for deriving and cross-validating special MMPI scales. In general, these procedures involve:

1. Performing an item analysis, using a 2 X 2 contingency table for each item and a chi-square test of significance, to find which ones significantly discriminate between the two groups in the study;

2. Subjecting the significant items from that analysis to an interitem correlation[1] (using multiple regression, discriminant

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[1]Daniel et al. (in press), Hedlund, Cho, and Wood (1977), and Klingler et al. (1977) have all used discriminant analysis in their MMPI research. Burisch (1984) stressed the vital importance of subjecting special scales to a discriminant procedure because of the "high interscale correlations within an inventory . . . (which) introduce uneconomical redundancy."

TABLE I

SUMMARY OF MMPI RESEARCH COMPARING COMPETENT AND INCOMPETENT (TO STAND TRIAL) GROUPS

Researcher(s)	Date of Study	N	Gender Composition	Mean Age (Years)	Race (% White)	Base Rates %C[c]	Base Rates %NC[d]	Significant MMPI Scales[e]	Significance Level
Cooke	1969	215	all males	29.3	85.6	56.8	43.2	F,2,3,6,7,8	$p < .05$[f]
Maxson and Neuringer	1970	594	all males	N.R.[b]	N.R.[b]	90.6	9.4	F,6	$p < .01$[f]
Daniel, Beck, Herath, Schmitz, and Menninger[a]	In Press	120	N.R.[b]	31.6	82.0	75.8	24.2	None	$p < .05$[g]

[a]Advance copy obtained from Dr. Beck in October 1983.

[b]Not reported in article.

[c]Percent competent to stand trial.

[d]Percent incompetent to stand trial.

[e]NC group significantly higher on all MMPI scales where a difference is reported.

[f]Statistic used was t-test between means.

[g]Statistic used was Pearson r correlation coefficient between the psychiatric recommendation of pretrial competency and the magnitude of specific MMPI basic scales.

analysis, or similar procedure for eliminating shared variance among the items), preferably employing a stepwise procedure, to arrive at the most economical scale;

3. Scoring the original sample using the new scale and conducting t-tests between the mean scores of the two groups;

4. Construction classification tables which give the "hit" and "miss" rates for the special scale in predicting the criterion using the most propitious cutting score;

5. As recommended by Meehl and Rosen (1955), statistically comparing these classification results with the base rates for the population;

6. Cross-validating the special scale with another sample (other than the one used to develop the scale) with regard to both t-tests between the group means (using the scale) and classification results.

For a more thorough discussion of the procedures of item analysis and selection of test items, refer to Magnusson (1966), Nunnally (1978), and Thorndike (1967).

CHAPTER III

METHODS AND PROCEDURES

1. DESCRIPTION OF SUBJECTS

Middle Tennessee Mental Health Institute Sample

All patients who were evaluated for pretrial competency at the MTMHI in Nashville, Tennessee between the period of September 1979 and March 1984 (a period of time for which complete data was available) comprise this sample, for a total of 522 Ss. Of this sample, 77.78% (N=406) were determined by the forensic team at that facility to be competent to stand trial; 22.22% (N=116) were incompetent. The mean age for the entire sample was 30.92 years (SD= 11.83 years), with a range from 17 to 69 years. The mean I.Q. was 83.94 (SD=16.14). The sample consisted of 95.79% (N=500) males and 4.21% (N=22) females. There were 63.03% (N=329) Whites and 36.97% (N=193) non-Whites; the vast majority of the non-White group was Black. For this sample, 43.87% (N=229) received a psychotic diagnosis (using DSM-III, 1980, criteria). The mean grade level (i.e., highest grade completed in school) was 9.86 years (SD=3.42 years), with 35.63% completing high school. The mean number of previous inpatient psychiatric hospitalizations for this sample was 2.08 (SD=2.30); 62.84% had at least one previous psychiatric hospitalization. Overall, 35.82% (N=187) were found by the evaluation team

to be Not Guilty by Reason of Insanity (NGRI). Using a three-tier classification for marital status, 53.26% were never married, 18.20% were presently married, and 28.16% were divorced, separated, or widowed; 0.38% (N=2) had no marital status listed. Using a five-tier classification for pending criminal charge (derived from the Tennessee Code Annotated, T.C.A.), 5.56% were charged with misdemeanors, 14.37% with non-violent felonies, 33.14% with violent felonies, 25.48% with Class "X" felonies (a T.C.A. classification for specific kinds of violent felonies), and 20.59% with "Capital Offenses" (murder). Of the 522 Ss in this sample, 91.95% (N=480) had taken a form of the MMPI; of this group, 61.04% took the full form of the test (either 400 or 566 questions) while 38.96% took the MMPI-168 short form version. A chi-square analysis of test form given (full form versus MMPI-168) and competency status (competent versus incompetent) was not significant at the $p < .05$ level ($x^2 = 0.37$, df=1).

The MTMHI sample was randomly divided into two equal halves of 261 Ss each. One half was used as the Scale-Construction (SC) subsample, from which there were 244 Ss with MMPIs. The other half was reserved as a cross-validation subsample (CV-I), from which there were 236 Ss with MMPI results. The 42 Ss for whom there existed no MMPI results were removed from the SC and CV-I subsamples and assessed separately. Refer to Table II (pages 57-58) for a summary of the MTMHI sample.

TABLE II

SUBJECT COMPOSITION: MTMHI SAMPLE[a]

Variable	Subsample			Total (N=522)
	SC[b]	CV-I[c]	No-MMPI[d]	
Age (mean/years)	31.05	30.71	32.20	30.92
Sex (% males)	95.90	95.34	97.62	95.79
Race (% White)	65.16	63.98	45.24	63.03
Diagnosis (% psychotic)	50.82	37.71	38.09	43.87
I.Q. (mean)	86.66	83.73	58.29	83.94
Educational Level[e]	9.98	9.95	8.23	9.86
Not Competent (%)	20.49	19.50	47.62	22.22
NGRI (%)[f]	35.66	33.05	52.38	35.82
Marital Status				
Never Married (%)	54.51	52.12	52.38	53.26
Married (%)	18.03	19.49	11.91	18.20
Other (%)[g]	26.64	28.39	35.71	28.16
Unknown (%)	0.82	0.00	0.00	0.38
MMPI form[h]	36.07	41.95	N.A.	38.96

TABLE II (continued)

Variable	Subsample			Total (N=522)
	SC[b]	CV-I[c]	No MMPI[d]	
Charge[i]	78.69	80.51	73.81	79.12
Psychiatric Hospitalizations[j]	2.99	1.22	1.47	2.08

[a]Middle Tennessee Mental Health Institute, all pretrial admissions from 9/79-3/84.

[b]Scale-Construction Subsample (N=244).

[c]Cross-Validation I Subsample (N=236).

[d]No MMPI Subsample (N=42): No scoreable MMPI available.

[e]Highest grade in school completed (in years).

[f]Not Guilty by Reason of Insanity: Based upon psychiatric recommendation.

[g]Separated, divorced, or widowed.

[h]Percentage of those taking MMPI-168 short form.

[i]Percentage of those charged with serious crime (T.C.A. classification of Violent Felony, Class "X" Felony, and Capital Offense).

[j]Mean number of prior inpatient psychiatric hospitalizations.

Scale-Construction (SC) Subsample

After randomly dividing the entire MTMHI sample into equal halves of 261 Ss each, one half was used as the subsample with which the special scale was developed. Of the 261 Ss in this half, 93.49% (N=244) had MMPI results and hence constituted the basis for this subsample. The 17 Ss who had not taken the MMPI were grouped into the No-MMPI subsample.

Competent/Incompetent. Of the 244 Ss in the SC subsample, 79.51% (N=194) were judged by the forensic team to be competent to stand trial and 20.49% (N=50) were incompetent to stand trial.

Age. The mean age for this subsample was 31.05 years (SD=11.88 years); the incompetent group was significantly ($p < .05$) older than the competent group ($t=2.30$, df=242).

I.Q. The mean I.Q. for the SC subsample was 86.66 (SD=16.93). There was no significant difference ($p < .05$) between the competent and incompetent groups on this variable ($t=1.17$, df=242).

Sex. The SC subsample was composed of 95.90% (N=234) males. Significantly more females were found to be incompetent ($x^2=5.57$, df=1, $p < .02$).

Race. With regard to race, 65.16% (N=159) of the SC subsample were White while the remainder, 34.84% (N=85), were non-White (almost

exclusively Black). There was no significant ($p < .05$) difference with regard to race between the competent and incompetent groups ($x^2 = 1.30$, df=1).

Diagnosis. A psychotic disorder was diagnosed in 50.82% (N=124) of this subsample. Significantly more incompetent Ss were diagnosed as psychotic than competent Ss ($x^2 = 51.36$, df=1, $p < .0001$), consistent with other studies in this area.

Grade level. The mean grade level for this subsample was 9.98 years (SD=3.40). There was not a significant ($p < .05$) difference between the competent and incompetent groups with regard to grade level ($t = 0.05$, df=242).

Previous hospitalizations. The mean number of previous inpatient psychiatric hospitalizations for the SC subsample was 2.99 (SD=2.81). The incompetent group had significantly fewer prior hospitalizations than the competent group ($t = 5.31$, df=242, $p < .001$).

NGRI. With regard to recommendations of Not Guilty by Reason of Insanity, 35.66% of this subsample was declared to be NGRI. As expected, the incompetent group was significantly more likely to be found NGRI than the competent group ($x^2 = 93.31$, df=1, $p < .0001$).

Marital status. In the SC subsample, 54.51% had never been married, 18.03% were presently married, and 26.64% were either divorced, separated, or widowed; marital status was not given in

0.82% of the subsample. There was not a significant ($p<.05$) difference between the competent and incompetent groups with regard to marital status ($x^2=2.51$, df=2).

Charge. With regard to the pending criminal charge of Ss in the SC subsample, 4.92% were charged with misdemeanors, 14.75% with non-violent felonies, 31.97% with violent felonies (excluding Class "X" and Capital Offenses), 26.23% with Class "X" felonies, and 20.49% with Capital Offenses (murder). There was not a significant difference between the competent and incompetent groups with regard to criminal charge ($x^2=9.55$, df=5, $p=.089$).

MMPI-168. In this subsample, 36.07% of the Ss took the MMPI-168 short form and the remainder took the full form of that test. There was not a significant ($p<.05$) difference with regard to MMPI form taken and competency status. Refer to Table II (pages 57-58) for a summary of the SC subsample.

Cross-Validation I (CV-I) Subsample

From the random half of the MTMHI sample reserved for cross-validation, 90.40% (N=236) had taken the MMPI, which became the basis for this subsample. The remaining 9.60% (N=25) who had not taken the MMPI were grouped with the No-MMPI subsample extracted from the SC subsample.

Competent/Incompetent. From the CV-I subsample, 80.50% (N=190) were competent to stand trial while 19.50% (N=46) were found by the

evaluation team to be incompetent. There was not a significant difference between the SC and CV-I subsamples with regard to the competent/incompetent ratio.

Age. The mean age for this subsample was 30.71 years (SD=11.55 years). There was not a significant difference ($p < .05$) either between this subsample and the SC subsample or between the competent and incompetent groups with regard to age.

I.Q. The mean I.Q. for the CV-I subsample was 83.73 (SD=16.36). There was no significant difference ($p < .05$) between the competent and incompetent groups or between the CV-I and SC subsamples on this variable.

Sex. The CV-I subsample was composed of 95.34% (N=225) males. Unlike the SC subsample, there was not a significant difference ($p < .05$) between the competent and incompetent groups with regard to gender. Likewise, there was not a significant difference between the SC and CV-I subsamples with regard to male/female ratio.

Race. With regard to race, 63.98% (N=151) of the CV-I subsample were White while the remainder, 36.02% (N=85), were non-White (almost exclusively Black). There was no significant difference ($p < .05$) between the CV-I and SC subsamples with regard to race.

Diagnosis. A psychotic disorder was diagnosed in 37.71% (N=89) of this subsample. Like the SC subsample, significantly more incompetent defendants were diagnosed as psychotic than competent ones

($\underline{x}^2$=44.40, df=1, $\underline{p}$<.0001). There was not a significant difference ($\underline{p}$<.05) between the SC and CV-I subsamples on this variable.

Grade level. The mean grade level for this subsample was 9.95 years (SD=3.40 years). There was no significant difference ($\underline{p}$<.05) found either between the competent and incompetent groups or between the SC and CV-I subsamples with regard to grade level.

Previous hospitalizations. The mean number of previous inpatient psychiatric hospitalizations for the CV-I subsample was 1.22 (SD= 1.56). In contrast to the SC subsample on this variable, the incompetent group of the CV-I subsample had significantly more previous hospitalizations than the competent group ($\underline{t}$=2.74, df=234, $\underline{p}$<.01). The CV-I subsample had significantly fewer previous psychiatric hospitalizations than the SC subsample ($\underline{t}$=9.22, df=529, $\underline{p}$<.0001).

NGRI. With regard to recommendations of Not Guilty by Reason of Insanity, 33.05% of this subsample was declared to be NGRI. As with the SC subsample, incompetent defendants were significantly more likely to be found NGRI than competent ones ($\underline{x}^2$=86.22, df=1, $\underline{p}$<.0001).

Marital status. In the CV-I subsample, 52.12% had never been married, 19.49% were presently married, and 28.39% were either divorced, separated, or widowed. There was no significant difference ($\underline{p}$<.05) found between the competent and incompetent groups or between the SC and CV-I subsamples with regard to marital status.

Charge. With regard to pending criminal charges of Ss in the CV-I subsample, 5.93% were charged with misdemeanors, 13.14% with non-violent felonies, 33.48% with violent felonies (excluding Class "X" felonies and Capital Offenses), 25.42% with Class "X" felonies, and 21.61% with Capital Offenses (murder). There was no significant difference ($p < .05$) between competent and incompetent offenders or between the SC and CV-I subsamples on this variable.

MMPI-168. In this subsample, 41.95% of the Ss took the MMPI-168 short form and the remainder took the full form of that test. There was no significant difference ($p < .05$) with regard to the MMPI form taken and whether or not an individual was competent.

See Table II (pages 57-58) for a summary of significant variables in the CV-I subsample. See Table III (page 65) for a summary of the statistical comparisons of the competent and incompetent groups on these variables (for all subsamples). See Table IV (page 66) for a summary of the statistical comparisons of the CV-I subsample with the SC subsample.

No-MMPI (MTMHI) Subsample

From the total MTMHI sample of 522 Ss, 8.05% (N=42) did not take the MMPI; data was not consistently available regarding the reasons for exclusion of the MMPI, although the two most commonly given reasons (when noted) were refusal by the defendant to participate in testing and mental retardation. Whenever possible, the MMPI was administered, even if it had to be verbally presented by an examiner.

TABLE III

STATISTICAL COMPARISON OF COMPETENT AND INCOMPETENT GROUPS FOR THE SUB-SAMPLES SC, CV-I, AND CV-II[a]

Variable	Competent vs. Incompetent Groups for Sample[b]		
	SC (N=244)	CV-I (N=236)	CV-II (N=104)
Age	Yes[c]	No	No
Sex	Yes[d]	No	No
Race	No	No	No
Diagnosis	Yes[e]	Yes[f]	No
I.Q.	No	No	No
Educational Level	No	No	No
MMPI-168 v. Full Form	No	No	No
NGRI	Yes[g]	Yes[h]	Yes[i]
Marital Status	No	No	No
Charge	No	No	No
Psych. Hospitalizations	Yes[j]	Yes[k]	No

[a] SC=Scale-Construction, CV-I & CV-II=Cross-Validations I and II.

[b] Fisher's t-test or chi-square used, as appropriate ($p<.05$).

[c] $t=2.30$, df=242, $p<.05$ (NC Group significantly older).

[d] $x^2=5.57$, df=1, $p<.02$ (More females in NC Group).

[e] $x^2=51.36$, df=1, $p<.0001$ (NC Group more often psychotic).

[f] $x^2=44.40$, df=1, $p<.0001$ (NC Group more often psychotic).

[g] $x^2=93.31$, df=1, $p<.0001$ (NC Group more often found NGRI).

[h] $x^2=86.22$, df=1, $p<.0001$ (NC Group more often found NGRI).

[i] $x^2=16.09$, df=1, $p<.0001$ (NC Group more often found NGRI).

[j] $t=5.31$, df=242, $p<.001$ (NC Group had fewer hospitalizations).

[k] $t=2.74$, df=234, $p<.01$ (NC Group had more past hospitalizations).

TABLE IV

STATISTICAL COMPARISON OF SC SUBSAMPLE WITH CV-I AND CV-II SUBSAMPLES

Variable	Statistical Comparison[a]	
	SC & CV-I Subsamples[b]	SC & CV-II Subsamples[c]
Age	No	No
Sex	No	Yes[d]
Race	No	Yes[e]
Diagnosis	No	Yes[f]
I.Q.	No	Yes[g]
Educational Level[h]	No	No
Not Competent	No	Yes[i]
NGRI[j]	No	Yes[k]
Marital Status	No	No
Charge	No	Yes[l]
Psych. Hospitalizations	Yes[m]	No

[a] Fisher's t-test or chi-square, as appropriate ($p<.05$).

[b] SC=Scale-Construction (N=244), CV-I=Cross-Validation (N=236).

[c] CV-II=Cross-Validation subsample II (LMHI, N=104).

[d] $x^2=15.96$, df=1, $p<.001$ (significantly more females in CV-II).

[e] $x^2=7.02$, df=1, $p<.01$ (significantly fewer non-Whites in CV-II).

[f] $x^2=9.37$, df=1, $p<.01$ (significantly fewer psychotics in CV-II).

[g] $t=2.46$, df=346, $p<.02$ (significantly lower I.Q. in CV-II).

[h] Highest grade in school completed.

[i] $x^2=6.05$, df=1, $p<.02$ (significantly fewer NCs in CV-II).

[j] Not Guilty by Reason of Insanity (psychiatric recommendation).

[k] $x^2=4.51$, df=1, $p<.05$ (significantly fewer NGRIs in CV-II).

[l] $x^2=101.12$, df=1, $p<.00001$ (CV-II had less serious charges).

[m] $t=9.22$, df=478, $p<.0001$ (CV-I had fewer hospitalizations).

Competent/Incompetent. Of the 42 Ss in this subsample, 53.38% (N=22) were competent to stand trial while the remainer (46.62%) were incompetent; significantly more Ss who did not take the MMPI were found to be incompetent to stand trial than those who did (x^2=17.05, df=1, $p<.001$).

Age. The mean age for this subsample was 32.20 years (SD=14.46 years). There was not a significant difference ($p<.05$) between this subsample and those taking the MMPI (t=0.67, df=520).

I.Q. The mean I.Q. for the No-MMPI subsample was 58.29 (SD= 19.76). This was significantly lower than the mean I.Q. of those Ss who took the MMPI (t=7.76, df=502, $p<.0001$).

Sex. Regarding sex, 97.62% (N=41) of the No-MMPI subsample were male. This proportion was not significantly different ($p<.05$) from that of the group who took the MMPI.

Race. The No-MMPI subsample contained 45.24% (N=19) White Ss, which was significantly fewer than the group taking the MMPI (x^2= 6.20, df=1, $p<.02$).

Diagnosis. With 38.09% (N=16) of the No-MMPI subsample receiving a psychotic diagnosis, there was not a significant difference between this subsample and those taking the MMPI (x^2=0.62, df=1).

Grade level. The No-MMPI subsample had a mean grade level of

8.23 years (SD=3.55 years), which was significantly lower than the grade level of those Ss taking the MMPI (t=2.86, df=512, $p<.01$).

Previous hospitalizations. The mean number of prior inpatient psychiatric hospitalizations for the No-MMPI subsample was 1.47 (SD=1.34), which was significantly fewer than the group taking the MMPI (t=3.99, df=520, $p<.001$).

NGRI. From the No-MMPI subsample, 52.38% (N=22) were found to be NGRI. Consistent with the other subsamples, significantly more incompetent Ss were declared to be NGRI than competent ones (x^2= 24.64, df=1, $p<.0001$).

Marital status. Regarding marital status, 11.91% (N=5) of the No-MMPI subsample were married, which was not significantly different ($p<.05$) from the MMPI group.

Charge. The No-MMPI subsample was not significantly different ($p<.05$) from the MMPI group with regard to pending criminal charge.

See Table II (pages 57-58) for a summary of these variables for the No-MMPI subsample. See Table V (pages 69-70) for a summary of the statistical comparisons between the No-MMPI subsample and those taking the MMPI (for both the MTMHI sample and the LMHI sample). The MMPI group within the MTMHI sample, incidentally, is simply a summation of the SC and CV-I subsamples.

TABLE V

STATISTICAL COMPARISON OF THOSE TAKING MMPI AND NOT TAKING MMPI IN MTMHI AND LMHI SAMPLES

	MTMHI			LMHI		
Variable	MMPI[a]	No-MMPI[b]	Sig. Diff.[c]	MMPI[d]	No-MMPI[e]	Sig. Diff.[c]
Age (mean/years)	30.88	32.20	No	32.06	33.66	No
Sex (% males)	97.62	96.63	No	83.65	86.84	No
Race (% White)	64.58	45.24	Yes[k]	78.85	73.68	No
Diagnosis (% psychotic)	44.38	38.09	No	43.27	36.40	No
I.Q. (mean)	85.22	58.29	Yes[l]	76.55	77.33	No
Educational Level[f]	9.97	8.23	Yes[m]	10.56	8.78	Yes[n]
Not Competent (%)	20.00	47.62	Yes[o]	9.62	21.05	Yes[p]
NGRI[g] (%)	34.38	52.38	Yes[q]	23.91	30.59	No
Marital Status[h]	9.21	12.20	No	11.54	10.53	No
Charge[i]	80.42	73.81	No	37.50	37.72	No
Psych. Hospitalizations[j]	2.12	1.47	Yes[r]	2.46	3.67	Yes[s]

[a] SC + CV-I Subsamples (N=480).

[b] N=42.

[c] Statistics used: Fisher's t-test or chi-square, as appropriate ($p < .05$).

[d] CV-II Subsample (N=104).

[e] N=228.

TABLE V (continued)

[f] Highest grade in school completed (in years).

[g] Not Guilty by Reason of Insanity: Based upon psychiatric recommendation.

[h] Percentage married.

[i] Percentage charged with Violent Felony, Class "X" Felony, or Capital Offense (T.C.A.).

[j] Mean number of prior inpatient psychiatric hospitalizations.

[k] $\underline{x}^2=6.20$, df=1, $\underline{p}<.02$

[l] $\underline{t}=7.76$, df=502, $\underline{p}<.0001$ (2-tailed)

[m] $\underline{t}=2.86$, df=512, $\underline{p}<.01$ (2-tailed)

[n] $\underline{t}=4.39$, df=318, $\underline{p}<.001$ (2-tailed)

[o] $\underline{x}^2=13.68$, df=1, $\underline{p}<.001$

[p] $\underline{x}^2=6.48$, df=1, $\underline{p}<.02$

[q] $\underline{x}^2=5.45$, df=1, $\underline{p}<.02$

[r] $\underline{t}=3.99$, df=514, $\underline{p}<.001$ (2-tailed)

[s] $\underline{t}=2.77$, df=327, $\underline{p}<.01$ (2-tailed)

Lakeshore Mental Health Institute Sample

All patients who were evaluated for pretrial competency at the LMHI in Knoxville, Tennessee between the period of January 1978 and March 1984 (a period of time for which complete data was available) comprise this sample, for a total of 332 Ss. Of this sample, 82.50% (N=274) were determined by the forensic team at that facility to be competent to stand trial; 17.50% (N=48) were incompetent. From the total LMHI sample, 31.33% (N=104) were administered the MMPI (either full form or MMPI-168 short form); this MMPI group is hereafter called the CV-II subsample. Of the remaining 228 Ss, MMPIs were either not administered or were the Mini-Mult (Kincannon, 1968) short form (which, for purposes of this study, were not usable). Reasons why MMPIs were not given were not reliably reported. Because of the good possibility of a biased selection factor operating with regard to those taking and not taking the MMPI in the LMHI sample, this sample should be regarded as flawed. However, for purposes of a second cross-validation, it may provide some indication of how well the NCT Scale works in a different mental health facility other than the one used to derive and initially cross-validate this scale. Additionally, the LMHI sample may typify other inpatient facilities where pretrial evaluations are performed, even with regard to the inconsistent employment of certain personality tests (like the MMPI). In this respect, it may represent a "real life" application.

Cross-Validation II (CV-II) and No-MMPI (LMHI) Subsamples

Competent/Incompetent. The percentage of competent Ss in the CV-II subsample was 90.38% (N=94). Significantly more incompetent Ss were in the No-MMPI (LMHI) subsample than in the CV-II subsample (x^2=6.48, df=1, $p<.02$), consistent with findings from the MTMHI sample.

Age. The mean age for the LMHI sample was 33.16 years (SD= 11.05 years). There was no significant difference ($p<.05$) with regard to age between those taking and not taking the MMPI (t=1.39, df=330), between those found competent and incompetent to stand trial (t=0.64, df=330), and between the LMHI sample and the SC subsample (t=0.34, df=573).

I.Q. The mean I.Q. for the LMHI sample was 77.08 (SD=15.59). There was no significant difference ($p<.05$) with regard to I.Q. between those taking and not taking the MMPI (t=0.40, df=296) or between those found competent and incompetent (t=0.71, df=296). However, the LMHI sample had a significantly lower mean I.Q. than the SC subsample (t=2.46, df=443, $p<.02$).

Sex. The percentage of males in the LMHI sample was 85.58% (N=285). There were significantly fewer males in this sample than were contained in the SC subsample (x^2=15.96, df=1, $p<.001$). There was no significant difference ($p<.05$) with regard to gender between those taking (CV-II) and those not taking (No-MMPI) the

MMPI or between those found competent and incompetent ($\underline{x}^2$=0.60, df=1, and $\underline{x}^2$=0.33, df=1, respectively).

Race. The percentage of White Ss in the LMHI sample was 75.30% (N=250). This percentage was significantly higher than the number of Whites contained in the SC subsample ($\underline{x}^2$=7.02, df=1, $\underline{p}<.01$). There was no significant difference ($\underline{p}<.05$) with regard to race between those taking and not taking the MMPI ($\underline{x}^2$=1.02, df=1) or between those found competent and incompetent ($\underline{x}^2$=0.52, df=1).

Diagnosis. The percentage of LMHI sample Ss given a psychotic diagnosis was 38.55 (N=128), which was significantly fewer than was found in the SC subsample ($\underline{x}^2$=9.37, df=1, $\underline{p}<.01$). There was no significant difference ($\underline{p}<.05$) with regard to diagnosis between the CV-II subsample and the No-MMPI (LMHI) subsample ($\underline{x}^2$=1.42, df=1) or between those found competent and incompetent to stand trial ($\underline{x}^2$=3.22, df=1).

Grade level. The mean grade level for the LMHI sample was 9.35 years (SD=3.37 years). While there was a significant difference between those taking and those not taking the MMPI on this variable, with the No-MMPI group lower ($\underline{t}$=4.39, df=318, $\underline{p}<.001$), there was no significant difference ($\underline{p}<.05$) between those found competent and incompetent ($\underline{t}$=0.45, df=318) or between the LMHI sample and the SC subsample ($\underline{t}$=0.14, df=562).

Previous hospitalizations. For the LMHI sample, the mean number

of previous inpatient psychiatric hospitalizations was 3.30 (SD= 2.93). There was a significant difference between those taking the MMPI and those not taking the MMPI on this variable, with the former having fewer hospitalizations (t=2.77, df=327, $p<.01$). However, there was no significant difference ($p<.05$) between those found competent and incompetent to stand trial (t=0.23, df=327) or between the LMHI sample and the SC subsample (t=1.69, df=571).

NGRI. As in the SC and CV-I subsamples, incompetent defendants were significantly more likely to be found NGRI than competent ones (x^2=16.09, df=1, $p<.0001$). In the LMHI sample, 23.80% (N=79) were found to be NGRI.

Marital status. With regard to marital status in the LMHI sample, 53.31% were never married, 10.84% were presently married, and 35.85% were either divorced, separated, or widowed. There was no significant difference ($p<.05$) with regard to marital status (married versus not married), between those taking and not taking the MMPI (x^2=1.22, df=1) or between those found competent and incompetent to stand trial (x^2=0.98, df=1). However, the LMHI sample contained significantly fewer married Ss than did the SC subsample (x^2=6.28, df=1, $p<.02$).

Charge. With regard to pending criminal charge within the LMHI sample, 21.99% were charged with misdemeanors, 40.36% with non-violent felonies, 27.11% with violent felonies (excluding Class "X" felonies and Capital Offenses), 3.92% with Class "X" felonies, and

and 6.62% with Capital Offenses (murder). While there was not a significant difference ($p < .05$) between those taking the MMPI and those not taking the MMPI or between those found competent and incompetent to stand trial using this variable, the LMHI sample as a whole contained significantly fewer violent offenders than did the SC subsample ($x^2 = 101.12$, df=1, $p < .0001$).

See Table VI (pages 76-77) for a summary of data on the LMHI sample; this table also contains a differential comparison of the CV-II and No-MMPI (LMHI) subsamples within the LMHI sample. Finally, Table VI provides the mean values on all of the reported variables in a summation of the MTMHI and LMHI samples (N=854). See Table III (page 65) for a summary of the statistical differences between the competent and incompetent groups for the variables described above. See Table IV (page 66) for a summary of the statistical differences between the CV-II subsample and the SC subsample for the same variables. See Table V (pages 69-70) for a summary of the statistical differences between those Ss taking the MMPI and not taking the MMPI in both the LMHI and MTMHI samples.

2. INSTRUMENTATION

Minnesota Multiphasic Personality Inventory

The Minnesota Multiphasic Personality Inventory (MMPI) is the most widely used (Lubin, Larsen, and Matarazzo, 1984) and researched (Greene, 1980) objective personality inventory presently available in this country. Dahlstrom, Welsh, and Dahlstrom (1975) have cited

TABLE VI

SUBJECT COMPOSITION: LMHI SAMPLE[a] PLUS SUMMATION OF MTMHI AND LMHI SAMPLES[b]

Variable	Subsample		Total LMHI Sample[e]	Total LMHI + MTMHI Samples[f]
	CV-II[c]	No-MMPI[d]		
Age (mean/years)	32.06	33.66	33.16	31.79
Sex (% males)	83.65	86.84	85.58	91.82
Race (% White)	78.85	73.68	75.30	67.80
Diagnosis (% psychotic)	43.27	36.40	38.55	41.80
I.Q. (mean)	76.55	77.33	77.08	81.27
Educational Level[g]	10.56	8.78	9.35	9.66
Not Competent (%)	9.62	21.05	17.47	20.37
NGRI[h] (%)	23.91	30.59	28.24	33.42
Marital Status				
Never Married (%)	50.00	54.82	53.31	53.28
Married (%)	11.54	10.53	10.84	15.34
Other (%)[i]	38.46	34.65	35.85	31.15
Unknown (%)	0.00	0.00	0.00	0.23
MMPI form[j]	24.04	N.A.	24.04	36.30

TABLE VI (continued)

Variable	Subsample		Total LMHI Sample[e]	Total LMHI + MTMHI Samples[f]
	CV-II[c]	No-MMPI[d]		
Charge[k]	37.50	37.72	37.65	63.37
Psychiatric Hospitalizations[l]	2.46	3.67	3.30	2.55

[a]Lakeshore Mental Health Institute, all pretrial admissions from 1/78-3/84 (N=332).

[b]Demographic data on all MTMHI and LMHI Subjects used in study (N=854).

[c]Cross-Validation II Subsample (N=104).

[d]No-MMPI (LMHI) Subsample (N=228).

[e]CV-II and No MMPI (LMHI) Subsamples combined (N=332).

[f]Total N=854.

[g]Highest grade in school completed (in years).

[h]Not Guilty by Reason of Insanity: Based upon psychiatric recommendation.

[i]Separated, divorced, or widowed.

[j]Percentage of those taking MMPI-168 short form.

[k]Percentage of those charged with a serious crime (T.C.A. classification of Violent Felonies, Class "X" Felonies, and Capital Offenses).

[l]Mean number of prior inpatient psychiatric hospitalizations.

approximately 6000 references on clinical and research applications of the MMPI. Butcher and Tellegen (1978) suggested several reasons for the immense popularity of the MMPI:

> Its administration is relatively effortless; its scoring is objective; generally straightforward objective interpretation procedures are available; and its quality as a criterion measure is comparatively well-founded.

The MMPI consists of a series of 566 self-reference statements to which examinees mark, on separate answer sheets, true or false, depending on whether or not that statement applies to them.

The MMPI was initially developed by Hathaway and McKinley in 1940 but did not appear in its final form until 1948. For a thorough analysis of the development of the various basic scales of the MMPI, refer to Graham (1977) and Greene (1980).

The MMPI is classified as an objective technique because of the relatively unambiguous stimuli and the structured response format. The scoring, which may be performed manually (by using templates) or by computer (by using one of the many commercial computer scoring and interpretation services available or by using currently available software programs for many popular personal computers). The results are reported in the form of line-graphs wherein Ss' raw scores for each of ten basic clinical scales and three validity scales are plotted (and simultaneously converted to standard, or "T" scores). Interpretation of the graph or profile is a complex affair requiring advanced training and expertise. Several

interpretive manuals are available to assist the clinician in profile interpretation (e.g., Graham, 1977; Greene, 1980; Lachar, 1974) but are not a substitute for specific training in using the instrument.

There are numerous additional, or "special," scales which have been developed for the MMPI (see Chapter I). Butcher and Tellegen (1978) have been critical of many of these special scales for being conceptually redundant with existing scales, for having been developed on inadequate samples without replication, and for failing to report on how well they predict behavior using "hit" and "miss" tables. Several of the more widely used special scales developed for the MMPI include the Welsh (1956) Anxiety (A) and Repression (R) scales, the Gough, McClosky, and Meehl (1951) Dominance (Do) scale, the Navran (1954) Dependency (Dy) scale, the Barron (1953) Ego-Strength (Es) scale, the Hanvik (1951) Low-Back Pain (Lb) scale, the MacAndrew (1965) Alcoholism (MAC) scale, and the Megargee and Mendelsohn (1962) Overcontrolled-Hostility (O-H) scale. Refer to Greene (1980) for a good discussion and critique of these and other special MMPI scales.

The methodology involved in the construction and replication of special MMPI scales has been summarized in Chapter II.

The MMPI-168 Short Form

Butcher and Tellegen (1978) reported that about 12% of the research involving the MMPI in recent years has been concerned with the development of shorter versions of the test. Of the five or six

short forms that have emerged in the past decade, the "most promising" (Graham, 1977) one has been the MMPI-168 (Overall and Gomez-Mont, 1974). This short form uses the first 168 items of the standard full form; the specific number of items used was chosen somewhat for convenience as item 168 appears on the bottom of page 7 of the Form-R test booklet, providing a convenient stopping point for the examinee taking the test.

There are several distinct advantages to using the MMPI-168 short form:

1. It permits the examiner to use the standard Form-R test booklet and answer sheet;

2. The standard scoring stencils for the Form-R may be used for manual scoring;

3. Computerized scoring and interpretation of the MMPI-168 are becoming increasingly available;

4. It is approximately 30% of the length of the 566 full form and 42% of the length of the standard abbreviated form (i.e., the basic scales may be scored with only the first 400 items);

5. Unlike some other short forms of the MMPI (e.g., the Mini-Mult--Kincannon, 1968), the MMPI-168 uses all of the basic clinical and validity scales of the full form of the test;

6. Conversion of raw scores from the MMPI-168 to full form raw score equivalents is easily accomplished by using published conversion tables (Overall, Higgins, and DeSchweinitz, 1976);

7. There has been a considerable amount of research which, in general, has shown that the MMPI-168 correlates highly with the full form (Hedlund and Powell, 1975; Newmark, Newmark, and Cook, 1975; Overall, Higgins, and DeSchweinitz, 1976).

There have been some substantive criticisms of the MMPI-168 short form. For one thing, it does not permit the use of most of the special scales which have been developed for the full form. Correlations between the MMPI-168 and the full form in several replication studies have ranged from as low as .77 to as high as .96 for the individual scales (Graham, 1977; Hedlund and Powell, 1975; Hoffman and Butcher, 1975; Overall and Gomez-Mont, 1974; Newmark, Newmark, and Cook, 1975). Agreement between the MMPI-168 and the full form for single and two-code profile types for psychiatric patients has ranged from as low as 40% (Hoffman and Butcher, 1975), to 75% (Graham, 1977), to 92% (Hedlund and Powell, 1975).

In the present study, the MMPI-168 short form was administered 36.30% of the time (see Table VI, pages 76-77) for the 584 Ss who took the MMPI. Because of this large percentage of Ss taking this short form, the special scale developed for the prediction of pretrial competency (NCT Scale) was restricted to the first 168 items of all MMPIs. As discussed in Chapter I, the rationale for this was to develop a special scale that would be applicable to a much wider range of pretrial defendants (many of whom cannot or will not participate in taking the full form of the test). Whenever the scores from the basic scales are examined, the raw scores from the

full form are used when available; in cases where the MMPI-168 is used, the full form raw score equivalent (from Overall, Higgins, and DeSchweinitz's, 1978, conversion table) is used.

3. DATA COLLECTION

All data collected for this study was archival; no S was actually involved (as a direct participant) at any time. Permission to access the data was obtained in writing from the Director of Psychology at MTMHI and from the Research Committee at LMHI. No specific identifying information was copied that would permit any S to later be identified. Each S was assigned a sequential number (001-854) at the time the data was collected and no names appeared on any portion of the coded data. All reasonable means have been taken to ensure the security of the data and the anonymity of the Ss.

From the hospital files of each S, the following information was copied for this research:

1. S number (assigned sequentially, 001-854);

2. The decision of the forensic team regarding that S's pretrial competency (coded as 1=competent and 2=incompetent);

3. The decision of the forensic team regarding their recommendation of whether an Insanity Plea (NGRI) could be supported (coded as 1=yes and 2=no);

4. S's age (in years at most recent birthday);

5. S's marital status (coded as 0=unknown, 1=never married, 2=married, and 3=divorced, separated, or widowed);

6. S's racial origin (coded as 1=White and 2=non-White);

7. S's sex (coded as 1=male and 2=female);

8. S's highest grade completed in school (coded numerically);

9. S's I.Q. as determined by most recent I.Q. test administered (coded numerically);

10. Number of previous inpatient psychiatric hospitalizations for that S (coded numerically);

11. Most serious legal charge pending for that S (coded as 1=misdemeanor, 2=non-violent felony, 3=violent felony but excluding Class "X" felonies and Capital Offenses, 4=Class "X" felony, and 5=Capital Offense, as defined by Tennessee Code Annotated);

12. S's final diagnosis as determined by the forensic team (coded as 1=psychotic and 2=not psychotic, using DSM-III, 1980, criteria).

For those Ss for whom MMPI data was available, the raw score (with K added, when appropriate) for the three validity scales and the 10 basic clinical scales was copied. Additionally, because an item analysis was proposed, a photocopy was made of the response side of the Form-R answer sheet; except for the assigned S Number (001-854), no other identifying information was photocopied.

4. TREATMENT OF THE DATA

Analysis of the MMPI Basic Scales

From the SC subsample, the raw score means for each of the 13 basic scales of the MMPI were computed and the means of the competent

and incompetent groups were statistically compared using t-tests of significance (confidence level set at $p < .05$). The raw scores were then entered into the University of Tennessee computer using stepwise SPSS discriminant function analysis so that the "best" set of discriminating variables (i.e., combination of MMPI scales) could be selected (Klecka, 1975). The confidence level of the PIN and POUT was set at $p < .05$.

From this discriminant function analysis, three scales (L, 7, and 8) were found to significantly discriminate the competent and incompetent groups. However, when the shared variance was eliminated (via a partial correlation procedure), only one scale (7) accounted for all the significant variance (with the incompetent group significantly lower on this scale). Scale 7 was then reapplied to the SC subsample (as recommended by Clopton, 1978, and Klecka, 1975) and classification tables ("hit" and "miss") were constructed. These classification rates were then statistically compared, using a chi-square analysis, to the classification rates achieved with the NCT Scale and with base rate classification.

Item Analysis of the MMPI-168

The item analysis of the first 168 items of each MMPI was conducted using the scale development methodology discussed in Chapter II, using the procedures recommended by Butcher and Tellegen (1978), Clopton (1978), and Thorndike (1967).

For each of the first 168 items of the MMPIs, a 2 X 2

contingency table was constructed wherein competency status (competent or incompetent to stand trial) could be statistically compared with direction of response (true or false) for that item. Then, a chi-square ($\underline{x}^2$) test was performed to determine whether or not that particular item differentiated the competent and incompetent groups (using a confidence level of $\underline{p} < .10$).

The 35 items derived from this item analysis were then entered into the University of Tennessee computer using stepwise SPSS discriminant function analysis in order to select the "best" set (i.e., with redundancy eliminated) of discriminating variables, in this case MMPI items (Klecka, 1975).[1] This process was repeated twice using two inclusion criteria (the first, including only Ss whose I.Q.s were 70 or above; the second, including only Ss whose MMPIs had an F-K ratio of 16 or less, a T-score on the F scale of less than 100, and fewer than 30 unanswered items). In all cases, the confidence levels of PIN and POUT were set at $\underline{p} < .05$.

The five best discriminating variables (i.e., MMPI items) selected by the discriminant analysis were reapplied to the SC subsample both using the discriminant coefficients (which are analogous to BETA weights in multiple regression or factor analysis--Klecka, 1975) and weighting each item equally. Classification tables (giving "hit" and

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[1] "The mathematical objective of discriminant analysis is to . . . combine the discriminating variables in some fashion so that the groups are forced to be as statistically distinct as possible" (Klecka, 1975, page 435). According to Cooley and Lohnes (1962), discriminant analysis is one of the most parsimonious and statistically conservative methods of examining differences between two groups on a large number of variables.

"miss" rates for correct classification of Ss into competent and incompetent groups using the scale) were derived; the weighted and unweighted classification schemes were statistically compared using a chi-square analysis ($p < .05$).

The better of these two scales (unweighted) was then cross-validated (i.e., replicated) using the CV-I and CV-II subsamples. The means of the competent and incompetent groups for each subsample on the special scale (NCT Scale) were compared using t-tests (with confidence levels set at $p < .05$). Then, classification tables for each cross-validation subsample were derived wherein "hit" and "miss" rates were given for correctly classifying Ss as competent or incompetent to stand trial.

Finally, the classification rates for all subsamples (SC, CV-I, and CV-II) were compared to the population base rates (i.e., known percentage of group membership of the competent and incompetent groups) using a chi-square analysis ($p < .05$) in order to determine if the NCT Scale classified Ss at a rate significantly better than base rates.

5. STATEMENT OF NULL-HYPOTHESES

Following are the null-hypotheses which have been selected for testing in this study:

1. There is no significant difference ($p < .05$), using t-tests, between the means of the competent and incompetent groups (from all three subsamples) on any of the 13 basic MMPI scales;

2. There is no significant difference ($p < .05$), using t-tests, between the means of the competent and incompetent groups (from all three subsamples) on the five item NCT Scale;

3. The classification rate (of Ss into competent and incompetent groups) using the best combination of basic MMPI scales (from discriminant analysis) is not significantly ($p < .05$) poorer than the NCT Scale in classifying Ss and is not significantly ($p < .05$) better than the base rates for the population in all three subsamples;

4. The classification rate (of Ss into known competent and incompetent groups) using the NCT Scale is not significantly ($p < .05$) better than the base rates for the population in all three subsamples.

CHAPTER IV

RESULTS

1. MMPI PROFILE ANALYSIS

The raw scores of each of the three validity and 10 basic clinical scales of the MMPIs were entered into the University of Tennessee computer in a stepwise SPSS discriminant function analysis in order to determine which scale, or combination of scales, provided the "best" set of discriminating variables differentiating the competent and incompetent defendants.

Only three of these scales (L, 7, and 8) significantly differentiated the competent and incompetent groups ($p < .05$). These results are summarized in Table VII (page 89). After scale 7 was removed from the analysis, the other two scales were no longer significant at the $p = .05$ level. Hence, when shared variance was removed from this initial set of three scales, only scale 7 remained (the incompetent group was significantly lower than the competent group on this scale). For a discussion of the rationale and procedures involved in SPSS discriminant function analysis, see Chapters I and III as well as Klecka (1975).

Applied back to the SC subsample, scale 7 produced a Fisher's t-test between the means of the competent and incompetent groups that was significant at the $p < .01$ level (two-tailed), with $t = 2.94$ (df=242). However, when applied to both cross-validation subsamples (CV-I and

TABLE VII

MMPI[a] STANDARD SCALES WHICH SIGNIFICANTLY DIFFERENTIATE COMPETENT AND INCOMPETENT GROUPS IN THE SC[b] SUBSAMPLE

MMPI Scale[c]	F[d]	Significance Level[e]	Significance Level After Scale 7 Removed[f]
L (Lie)	4.104	.0439[g]	.1057
7 (Pt)	9.995	.0018[h]	.0018
8 (Sc)	5.315	.0220[i]	.6298

[a]Scores from Full Form used when available. For MMPI-168 protocols, scores first converted to Full Scale raw score equivalents.

[b]Scale-Construction subsample (N=244).

[c]Raw scores used in analysis (with K-correction added).

[d]For a discussion of the use of the F-test in stepwise multiple-regression analysis, see Guilford & Fruchter (1978), pp. 369-403.

[e]Confidence level set at $p < .05$

[f]In the discriminant function analysis, Scale 7 (Pt) was selected as the only MMPI standard scale differentiating C and NC groups when the shared variance among the scales was eliminated.

[g]NC Group scored significantly higher on the L (Lie) scale.

[h]NC Group scored significantly lower on the 7 (Pt) scale.

[i]NC Group scored significantly lower on the 8 (Sc) scale.

CV-II), the t-tests between the means of the competent and incompetent groups on scale 7 were not significant ($p < .05$). See Table VIII (page 91) for a summary of these results.

Using scale 7 results to classify Ss into competent and incompetent groups, a "hit" rate (percentage of correct classifications) of 60.66% was achieved. Using a chi-square analysis to compare the number of Ss correctly classified by scale 7 and those correctly classified by the base rate (i.e., number of Ss in the most numerous group), it was found that scale 7 was significantly poorer than the base rate in classifying competent and incompetent defendants in the SC subsample ($x^2 = 20.68$, df=1, $p < .0001$). Because of the lack of significance in the t-test analyses using scale 7 with both cross-validation subsamples, classification analyses were regarded as superfluous. See Table VIII (page 91) for a summary of the classification results.

2. NCT SCALE DEVELOPMENT

From the item analyses of the first 168 items of all of the MMPIs in the SC subsample, 35 items were found to differentiate the competent and incompetent groups ($p < .10$). For a list of these 35 items along with the chi-square results, refer to Table IX (page 92).

These 35 significant items were then entered into the University of Tennessee computer using stepwise SPSS discriminant function analysis whereby the "best" set of discriminating variables (i.e., MMPI items) was selected. After shared variance among the items was

TABLE VIII

CROSS-VALIDATION OF MMPI SCALE 7 (Pt)[a] WITH CV-I AND CV-II SUBSAMPLES IN DIFFERENTIATING COMPETENT (C) AND INCOMPETENT (NC) GROUPS

Subsample	*t*-test Between C and NC Groups[b]	Significant at $p < .05$ Level (2-tailed)?	Percent of *Ss* Correctly Classified Using Scale 7 (Pt)	Chi-square Comparison With Base Rate[c]
SC (N=244)	2.936	Yes[d]	60.66[e]	$x^2 = 20.68$[f]
CV-I (N=236)	0.535	No	-----[g]	---------[g]
CV-II (N=104)	1.920	No	-----[g]	---------[g]

[a]Scale 7 was the only basic MMPI scale derived from a discriminant function analysis of all 13 MMPI scales; see Table VII.

[b]Fisher's *t*-test of significance between sample means.

[c]Base rate is the classification rate obtained if it were assumed that all *Ss* were members of the more numerous group, in this case the competent group; the base rate for the SC subsample is 79.51%.

[d]Significance level was $p < .01$ (2-tailed); the NC group was significantly lower on Scale 7 than the C group.

[e]This is the classification rate obtained from the discriminant function analysis; the C group's Fisher's Linear Discriminant Function is 0.4813 and the NC group's is 0.4235 (constants are -9.4214 and -7.4521, respectively).

[f]df=1; conclusion is that Scale 7 is significantly poorer than base rate in classifying *Ss* into competent and incompetent groups.

[g]Classification not performed due to lack of significance in *t*-tests for these subsamples and the poor performance of Scale 7 compared with base rate in the SC subsample.

TABLE IX

MMPI-168 ITEMS FROM ITEM-ANALYSIS OF SC SUBSAMPLE WHICH DIFFERENTIATE COMPETENT AND INCOMPETENT GROUPS AT THE $p < .10$ LEVEL

MMPI Item Number	Chi-square (df=1)	Significance Level[a]	Scored Direction For Incompetent[b]
106	13.70	.001	F
94	12.35	.001	F
156	11.79	.001	F
76	8.91	.01	F
67	8.35	.01	F
142	8.11	.01	F
139	7.92	.01	F
39	7.69	.01	F
40	7.01	.01	F
100	6.85	.01	F
105	6.77	.01	F
62	6.18	.02	F
9	5.52	.02	F
21	5.49	.02	F
119	5.47	.02	F
127	5.47	.02	F
56	5.36	.05	F
96	5.14	.05	T
129	4.81	.05	F
15	4.23	.05	F
31	4.20	.05	F
97	4.14	.05	F
65	3.91	.05	T
145	3.86	.05	F
88	3.85	.05	T
161	3.83	.10	F
159	3.39	.10	F
64	3.35	.10	F
116	3.33	.10	T
61	3.23	.10	F
124	3.13	.10	F
118	2.99	.10	F
158	2.98	.10	F
46	2.96	.10	T
20	2.76	.10	T

[a] $p <$ figure given.

[b] F=False, T=True.

eliminated, only five items were selected (NCT Scale) which, as a group, provided the most efficient set of items differentiating the competent and incompetent groups. The SPSS discriminant function results are summarized in Table X (page 94-95). The item overlap of the NCT Scale with the basic MMPI scales is summarized in Table XI (page 96).

Using the standardized discriminant coefficients assigned in the computer analysis to each item, the NCT Scale was able to correctly classify 73.77% of the competent and incompetent defendants. Two inclusion criteria manipulations were performed in order to see if they improved the "hit" rate of that weighted scale. In the first inclusion criterion, only Ss whose I.Q. levels were 70 or above were included in the analysis (N=212); the discriminant analysis generated four items for this group which accounted for all the significant variance, resulting in a correct classification rate of 75.47%. This was not significantly ($p < .05$) better than the classification rate obtained without this inclusion criterion ($x^2 = 0.28$, df=1). In the second inclusion criterion, only Ss whose MMPIs had an F-K ratio of 16 or below, an F scale T-score of below 100, and fewer than 30 unanswered items were included in the analysis (N=167); the discriminant analysis generated nine items for this group which accounted for all the significant variance, resulting in a correct classification rate of 74.24%. This was not significantly ($p < .05$) better than the classification rate obtained without these criteria ($x^2 = 0.01$, df=1).

TABLE X

MMPI-168 ITEMS[a] DERIVED FROM DISCRIMINANT FUNCTION ANALYSIS[b] (SCALE-CONSTRUCTION SUBSAMPLE)

MMPI-168 Item[c]	Standardized Canonical Discriminant Function Coefficients[d]	Significance of F[e]	Wilks' Lambda[f]	Pooled Within-Groups Correlation with Canonical Discriminant Function
9	0.41519	0.0174	0.8752892	0.37349
39	0.55770	0.0020	0.8897627	0.50297
94	0.53748	0.0021	0.8895067	0.59954
116	-0.40032	0.0190	0.8747119	0.27906
119	0.39973	0.0253	0.8728823	0.32639
TOTAL[g]	0.17002[h]	<0.00001	0.8546899	0.38120

[a]These five items derived from 35 item pool from Table IX.

[b]SPSS Subprogram Discriminant: Groups=GRP(1,2)/ Variables=(all items from Table IX)/ Analysis=(all items from Table IX)/ Method=WILKS/PIN=.05/POUT=.05/ Priors=.50

[c]The five items selected from discriminant function analysis as accounting for all significant variance.

[d]". . .A measure of association between the single discriminant function and the set of (g-1) dummy variables which define the g group membership. It tells us how closely the function and the 'group variable' are related, which is just another measure of the function's ability to discriminate among the groups. . . .any single score represents the number of standard deviations that case is away from the mean for all cases on the given discriminant function. . . .the interpretation is analogous to the interpretation of beta weights in multiple regression." (Klecka, 1975)

TABLE X (continued)

[e]For a discussion of the F-test in stepwise multiple-regression analysis, see Guilford & Fruchter (1978), pp. 369-403.

[f]Wilks' Lambda--". . .an inverse measure of the discriminating power in the original variables which has not yet been removed by the discriminant functions--the larger lambda is, the less information remaining. Lambda can be transformed into chi-square. . .for an easy test of statistical significance." (Klecka, 1975)

[g]The combination of MMPI-168 items 9, 39, 94, 116, 119 hereafter referred to as NCT Scale.

[h]This is the Eigenvalue of the NCT Scale, which is ". . .a measure of the relative importance of the function. . . .It is a measure of the total variance existing in the discriminating variables." (Klecka, 1975)

TABLE XI

NCT[a] ITEM OVERLAP WITH STANDARD MMPI SCALES

MMPI Scale	Number of Items Overlapping With NCT
L (Lie)	0
F	0
K	1
1 (Hs)	1
2 (D)	2
3 (Hy)	1
4 (Pd)	1
5 (Mf)	1
6 (Pa)	0
7 (Pt)	1
8 (Sc)	1
9 (Ma)	1
0 (Si)	1

[a]NCT=Not Competent for Trial Scale. Item composition:

9. "I am about as able to work as I ever was." (NC=F)

39. "At times I feel like smashing things." (NC=F)

94. "I do many things which I regret afterwards (I regret things more or more often than others seem to)." (NC=F)

116. "I enjoy a race or game better when I bet on it." (NC=T)

119. "My speech is the same as always (not faster or slower, or slurring; no hoarseness)." (NC=F)

Because of the failure of these two inclusion criteria to significantly enhance the predictiveness of the scale and because such criteria would limit the applicability of the scale to fewer Ss, further efforts to refine the scale were focused upon the one developed with no inclusion criteria. Refer to Table XII (page 98) for a summary of the results of employing these two inclusion criteria.

Next, the classification results using the weighted NCT Scale (i.e., using the standardized discriminant function coefficients, which are analogous to BETA weights in conventional multiple regression analysis--Maxwell, 1977; Nie et al., 1975) were compared to the classification rates using an unweighted NCT Scale (where each item was assigned the weight of one), employing the best cutting score (i.e., NCT Scale=4). This comparison was conducted for several reasons:

1. Clopton (1978) stressed the importance of deriving a single cutting score for special scales;

2. Traditionally, special MMPI scales employed unweighted scores in order to simplify scoring;

3. Unweighted scores on a scale permit a far more straightforward interpretation of the meaning of a particular individual's performance on that scale than would the fractional results of weighted scores.

Using a chi-square analysis to compare the number of Ss correctly classified and incorrectly classified (according to competency status) with both weighted and unweighted versions of the NCT Scale,

TABLE XII

EFFECT OF TWO INCLUSION CRITERIA ON EFFICACY OF NCT SCALE[a]
WITH SCALE-CONSTRUCTION SUBSAMPLE

Inclusion Criteria	N[b]	Percent Correctly Classified Using NCT Scale[c]	Chi-square Comparison: Inclusion Criteria *vs.* No Inclusion Criteria[d]	Significant at $p<.05$?
I.Q. $\geq$ 70[e]	212	75.47%[f]	$x^2 = 0.28$ (df=1)	No
Valid MMPI[g]	167	74.25%[h]	$x^2 = 0.01$ (df=1)	No
None[i]	244	73.77%	----------	--

[a]Not Competent for Trial Scale: Composed of items 9, 39, 94, 116, 119.

[b]Number of *Ss* remaining from SC N=244 who met specified criterion.

[c]Computer-generated from SPSS discriminant function analysis using weighted coefficients.

[d]2 X 2 table: Inclusion criterion/No criterion *vs.* correct/incorrect classification.

[e]Included MMPIs of *Ss* who I.Q. was equal to, or greater than, 70.

[f]Items generated from discriminant function analysis: 9, 94, 116, 145.

[g]Included only MMPIs which met all these criteria: 1) F-K Index $\leq$ 16, 2) F < T100, and 3) ? < 30.

[h]Items generated from discriminant function analysis: 9, 94, 96, 97, 119, 127, 156, 161.

[i]All *Ss* MMPIs included from SC Subsample; all-TRUE and all-FALSE protocols were grouped with the No-MMPI Subsample (N=42).

it was found that the unweighted version classified Ss correctly significantly more often than the weighted version (x^2=4.23, df=1, $p<.05$). Refer to Table XIII (page 100) for a summary of the results of this analysis.

The correct classification (i.e., "hit" and "miss") rates for each possible cutting score on the unweighted NCT Scale were computed for the SC subsample and both cross-validation subsamples (CV-I and CV-II). For the SC subsample, the cutting score of NCT Scale=4 appeared to provide the highest number of correct classifications of Ss into known competent and incompetent groups (81.56%); for the competent group, this meant that 93.30% received an NCT Scale score of four or below while 36.00% of the incompetent group received a score of four or above. The classification results for the various cutting scores for each of the three subsamples are summarized in Table XIV (page 101).

For each of the three subsamples included in the analysis (i.e., SC, CV-I, and CV-II), t-tests between the mean NCT Scale scores for the competent and incompetent groups were conducted. For the SC subsample, the NCT Scale significantly differentiated the competent (mean NCT Scale score=1.95, SD=1.04) and incompetent (mean NCT Scale score=2.98, SD=1.03) groups at the $p<.001$ level (t=6.25, df=242). For the CV-I subsample, the NCT Scale significantly differentiated the competent (mean NCT Scale score=2.00, SD=1.01) and incompetent (mean NCT Scale score=2.44, SD=1.01) groups at the $p<.01$ level (t=2.63, df=234). For the CV-II subsample, the NCT Scale significantly

TABLE XIII

COMPARISON OF WEIGHTED[a] AND UNWEIGHTED[b] CLASSIFICATION RESULTS OF COMPETENT AND INCOMPETENT Ss IN SC[c] SUBSAMPLE USING THE NCT SCALE

Classification Type	Number of Ss Correctly Classified[d]	Percentage of Ss Correctly Classified	Chi-square Comparison of Classification Types[e]	Significant?[f]
Weighted[a]	180	73.77%	$\underline{x}^2 = 4.23$ (df=1)	Yes[g]
Unweighted[b]	199	81.56%		

[a]Classification results based on discriminant function analysis using standardized discriminant function coefficients (see Table X).

[b]Classification results using the 80 percent (NCT=4) cutoff with each item assigned the weight of one.

[c]Scale-Construction Subsample (N=244).

[d]Combined "hit" rate for both Competent and Incompetent groups.

[e]2 X 2 Table: Weighted/Unweighted vs. "hit"/"miss" rates.

[f]Confidence level set at $\underline{p}<.05$.

[g]Unweighted classification system is significantly better ($\underline{p}<.05$) than weighted classification system in correctly classifying Ss into Competent and Incompetent groups using the NCT Scale.

TABLE XIV

CORRECT CLASSIFICATION OF Ss INTO KNOWN COMPETENCY STATUS USING THE (UNWEIGHTED)[a] NCT SCALE[b]

NCT Cut-Off Score[c]	Subsample									Total (N=584)[g]
	SC (N=244)			CV-I (N=236)			CV-II (N=104)			
	C[d]	NC[e]	C+NC[f]	C[d]	NC[e]	C+NC[f]	C[d]	NC[e]	C+NC[f]	
5	193 99.49%	2 4.00%	195 79.92%	187 98.42%	1 2.17%	188 79.66%	92 97.87%	0 0.0%	92 88.46%	475 81.34%
4	181 93.30%	18 36.00%	199 81.56%	176 92.63%	6 13.04%	182 77.12%	87 92.55%	3 30.00%	90 86.54%	471 80.65%
3	135 69.59%	33 66.00%	168 68.85%	131 68.95%	22 47.83%	153 64.83%	65 69.15%	9 90.00%	74 71.15%	395 67.64%
2	69 35.57%	46 92.00%	115 47.13%	62 32.63%	36 78.26%	98 41.53%	26 27.66%	9 90.00%	35 33.65%	248 42.47%
1	12 6.19%	50 100.00%	62 25.41%	15 7.90%	46 100.00%	61 25.05%	9 9.58%	10 100.00%	19 18.27%	142 24.32%

[a]Each item assigned the weight of one, ignoring discriminant function coefficients.

[b]Not Competent for Trial Scale (MMPI items: 9, 39, 94, 116, 119).

[c]This score assumes that those scoring this many items in the indicated direction on the five-item NCT Scale will be classified as Incompetent (NC) to stand trial.

[d]C=Competent (in SC, C=194; in CV-I, C=190; in CV-II, C=94).

[e]NC=Not Competent (in SC, NC=50; in CV-I, NC=46; in CV-II, NC=10).

[f]Combined correct classification of Competent and Incompetent Ss for each subsample.

[g]Combined correct classification of Competent and Incompetent Ss for all 3 subsamples.

differentiated the competent (mean NCT Scale score=2.03, SD=1.08) and incompetent (mean NCT Scale score=3.00, SD=0.78) groups at the $p < .01$ level ($t=2.75$, df=102). These results are summarized in Table XV (page 103).

Finally, the classification (i.e., "hit" and "miss") rates obtained using the NCT Scale for each subsample were statistically compared (using a chi-square analysis) to the base rates for each respective subsample. The results of this analysis revealed that for all three subsamples, the NCT Scale did not correctly classify Ss into known competent and incompetent groups significantly ($p < .05$) better than the base rates. Refer to Table XV (page 103) for a summary of these comparisons.

TABLE XV

COMPARISON OF THE NCT SCALE[a] WITH BASE RATE IN CORRECTLY CLASSIFYING COMPETENT AND INCOMPETENT Ss

Subsample	t-test[b]	DF[c]	Sig. Level[d]	% Correct Class.: NCT[e]	% Correct Class.: B.R.[f]	NCT Scale vs. Base Rate Chi-square	NCT Scale vs. Base Rate Significant?[g]
SC	6.25[i]	242	$p<.001$	81.56%	79.51%	$x^2 = 0.33$	No
CV-I	2.63[j]	234	$p<.01$	77.12%	80.51%	$x^2 = 0.81$	No
CV-II	2.75[k]	102	$p<.01$	86.54%	90.39%[h]	$x^2 = 0.75$	No

[a]Not Competent for Trial Scale: MMPI items 9, 39, 94, 116, 119.

[b]Fisher's t-test between means of Competent and Incompetent Groups using the NCT Scale.

[c]Degrees of Freedom (N-2).

[d]Two-tailed.

[e]Correct classification of Ss using NCT Scale at 80 percent (NCT=4) cutoff.

[f]Base Rate (i.e., correct classification if it is assumed that all Ss are Competent).

[g]Confidence level set at $p<.05$ (df=1).

[h]This is the Base Rate for MMPI subsample of LMHI sample (N=104); the Base Rate for the entire LMHI sample (N=332) is 82.53%. Comparing this Base Rate with the correct classification of Ss using the NCT Scale in the CV-II Subsample also failed to reach significance ($p<.05$) in a chi-square comparison.

[i]Mean scores on NCT Scale: Competent=1.95 (S.D.=1.04), Incompetent=2.98 (S.D.=1.03).

[j]Mean scores on NCT Scale: Competent=2.00 (S.D.=1.01), Incompetent=2.44 (S.D.=1.01).

[k]Mean scores on NCT Scale: Competent=2.03 (S.D.=1.08), Incompetent=3.00 (S.D.=0.78).

CHAPTER V

DISCUSSION OF RESULTS, CONCLUSIONS, AND IMPLICATIONS

Results from the analysis of the MMPI basic scales suggest that they are poor predictors of a defendant's pretrial competency status (as determined by psychiatric recommendations). Even though three of the basic MMPI scales (L, 7, and 8) were significantly ($p < .05$) better than chance in differentiating competent and incompetent offenders, the discriminant function-derived "best" set of basic MMPI scales failed to classify Ss even as well as base rate prediction. Because of the failure of previous studies to develop a constellation of basic MMPI scales that could classify Ss with regard to competency status better than base rates (Cooke, 1969; Maxson and Neuringer, 1970) or to find any of the basic MMPI scales to be significantly correlated with competency or incompetency (Daniel et al., in press), these results were anticipated. Additionally, they provide the rationale for developing a special MMPI scale that would predict competency and incompetency more accurately.

The special scale which was developed as part of this investigation proved to be significantly better than any one, or any combination, of the basic MMPI scales. With the SC subsample and both cross-validation subsamples (CV-I and CV-II), the NCT Scale could differentiate competent and incompetent defendants (using t-tests of significance between the group means) at better than the

$p < .01$ level. However, although the NCT Scale could correctly classify Ss with regard to competency status significantly better than any basic MMPI scale(s), it was not significantly ($p < .05$) better (or worse) than the base rates of any of the three subsamples. This means that, if one were to simply classify all pretrial defendants as competent to stand trial (the more numerous class), the overall "hit" rate (or percentage correct classification) would be about the same as could be achieved using the NCT Scale. For a thorough discussion of base rate prediction, see Meehl and Rosen (1955).

1. STATUS OF NULL-HYPOTHESES

With reference to the null-hypotheses presented in Chapter III, the following conclusions can be drawn:

1. Null-hypothesis number one can be only partially rejected. Using t-tests of significance between the means of the competent and incompetent groups on all basic MMPI scales, three scales were significant at the $p < .05$ level. However, only one of these (scale 7) accounted for all significant variance in a discriminant analysis;

2. Null-hypothesis number two can be rejected. Using the NCT Scale, there was a significant difference ($p < .01$) between the means of the competent and incompetent groups (using t-tests) for all three subsamples;

3. Null-hypothesis number three cannot be rejected. Using the "best" combination of basic MMPI scales derived from a discriminant analysis, the rate of correct classification of Ss with regard to

competency status was significantly ($p < .05$) poorer than the base rate prediction and the NCT Scale.

2. CONCLUSIONS AND IMPLICATIONS

Based upon the analysis of the basic MMPI scales, this instrument does not appear to be very effective in predicting psychiatric recommendations of competency and incompetency to stand trial.

The special NCT Scale, derived through an item analysis of the first 168 items of the MMPIs in the Scale-Construction subsample and condensed through a discriminant function procedure, initially appeared to be more efficacious than any of the basic MMPI scales. The NCT Scale could differentiate competent and incompetent Ss, using t-tests, at better than the $p < .01$ level for all three subsamples. Additionally, the NCT Scale could correctly classify between 77.12% and 86.54% of Ss into their respective competent or incompetent group (using the NCT Scale=4 cutting score from Table XIV, page 101), which was significantly ($p < .01$) better than any combination of basic MMPI scales. However, these classification rates were no better than base rate prediction. Even attempts to enhance the NCT Scale's predictiveness by excluding low I.Q. Ss and questionably valid MMPIs (see Table XII, page 98) had no significant effect in improving the scale.

The most significant implication of these results appears to be that the MMPI (particularly the MMPI-168) is not a particularly useful instrument for predicting psychiatric recommendations of pretrial competency and incompetency.

3. SUGGESTIONS FOR FURTHER RESEARCH

Since the MMPI is rarely, if ever, used in isolation to predict psychiatric recommendations of defendants' pretrial competency, future research might attempt to develop a predictive formula using test results from a variety of sources (including other commonly administered psychological tests such as the Rorschach, the Draw-A-Person Test, the Bender Visual Motor Gestalt Test, as well as the results of different subtests from the WAIS-R). To a limited extent, Cooke (1969) attempted this; however, using a wider data base and the more sophisticated data analysis techniques that have evolved with the rapid expansion of computer technology over the past decade, results might prove to be more promising. Daniel et al. (in press) employed a wide variety of unrelated variables (although few psychological test results) in an elaborate discriminant function study; however, they had only 120 Ss and 71 variables and provided no cross-validation data. Moreover, this study used variables (such as diagnosis) which are often decided at the same time as psychiatric recommendations of competency which, for practical purposes, would be unavailable beforehand as a predictor variable. Additionally, the Daniel et al. (in press) study used a number of subjective variables (e.g., "history of brief periods of uncharacteristic irrational behavior" and "bizarre behavior manifested at the time of the offense that impaired understanding or volitional control") which may hinder replication of their research.

With specific regard to the MMPI, future research might want to examine items from the entire test rather than from just the MMPI-168. It is possible that a more predictive scale for pretrial competency could be developed from the full form than was possible with the MMPI-168 short form. Additionally, more attention could be given to those individuals refusing, or for other reasons not taking, the MMPI. Since this study found that individuals not taking the MMPI were significantly more likely to be found incompetent to stand trial than those who took it, an investigation into other specific characteristics of such "drop-outs" might prove to be fruitful.

Since the present study focused exclusively on defendants undergoing pretrial evaluations on an inpatient basis, an attempt might be made to either develop a special scale for pretrial competency (or attempt to replicate the NCT Scale) with defendants undergoing outpatient evaluations.

As an alternative to administering such instruments as the MMPI (which this study has shown to be of questionable value in predicting psychiatric recommendations of pretrial competency), I.Q. tests (which correlate with incompetency only at lower extremes), or varieties of the Competency Screening Test (which recent studies--e.g., Daniel et al., in press--have found to correlate only moderately with competency), staged "mock" trials (or "mock" strategy sessions with "defense attorneys") could be conducted wherein a defendant whose competency was in doubt could be directly assessed, via a kind of "work sample," regarding his/her capacity to conform to the

criteria of pretrial competency in situations which mimic an actual courtroom proceeding. Such procedures might be standardized in such a manner that they will not only permit accurate prediction (and classification) of a defendant's competency status, but could allow an incompetent defendant practice in regaining competency. Several writers (e.g., Bacon, 1969) in the field have already recommended special pretrial hearings as assess a defendant's competency firsthand.

In a similar vein, allowing individuals who are undergoing pretrial evaluations for competency to observe videotapes of "successful" defendants behaving in pretrial and trial situations, based on Bandura's (1977) modeling research, might be a novel way of assessing competency or of restoring the competency of those already adjudicated incompetent.

Finally, regarding the broad area of competency to stand trial, there appears to be a significant need for more empirical investigations into both the selection process whereby defendants are chosen to undergo pretrial competency examinations and the decision-making processes employed by forensic teams in arriving at their recommendations of competency and incompetency.

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