1985

Detecting Malingering With the Mmpi and the Pst.

Christine M. Turin

Louisiana State University and Agricultural & Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_disstheses

Recommended Citation

https://digitalcommons.lsu.edu/gradschool_disstheses/4166

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Historical Dissertations and Theses by an authorized administrator of LSU Digital Commons. For more information, please contact gradetd@lsu.edu.
INFORMATION TO USERS

This reproduction was made from a copy of a manuscript sent to us for publication and microfilming. While the most advanced technology has been used to photograph and reproduce this manuscript, the quality of the reproduction is heavily dependent upon the quality of the material submitted. Pages in any manuscript may have indistinct print. In all cases the best available copy has been filmed.

The following explanation of techniques is provided to help clarify notations which may appear on this reproduction.

1. Manuscripts may not always be complete. When it is not possible to obtain missing pages, a note appears to indicate this.

2. When copyrighted materials are removed from the manuscript, a note appears to indicate this.

3. Oversize materials (maps, drawings, and charts) are photographed by sectioning the original, beginning at the upper left hand corner and continuing from left to right in equal sections with small overlaps. Each oversize page is also filmed as one exposure and is available, for an additional charge, as a standard 35mm slide or in black and white paper format.*

4. Most photographs reproduce acceptably on positive microfilm or microfiche but lack clarity on xerographic copies made from the microfilm. For an additional charge, all photographs are available in black and white standard 35mm slide format.*

*For more information about black and white slides or enlarged paper reproductions, please contact the Dissertations Customer Services Department.
Turin, Christine M.

DETECTING MALINGERING WITH THE MMPI AND THE PST

The Louisiana State University and Agricultural and Mechanical Col. Ph.D. 1985

University Microfilms
International 300 N. Zeeb Road, Ann Arbor, MI 48106
PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark √.

1. Glossy photographs or pages
2. Colored illustrations, paper or print
3. Photographs with dark background
4. Illustrations are poor copy
5. Pages with black marks, not original copy
6. Print shows through as there is text on both sides of page
7. Indistinct, broken or small print on several pages
8. Print exceeds margin requirements
9. Tightly bound copy with print lost in spine
10. Computer printout pages with indistinct print
11. Page(s) lacking when material received, and not available from school or author.
12. Page(s) seem to be missing in numbering only as text follows.
13. Two pages numbered. Text follows.
14. Curling and wrinkled pages
15. Dissertation contains pages with print at a slant, filmed as received
16. Other

University Microfilms International
DETECTING MALINGERING WITH THE MMPI
AND THE PST

A Dissertation

Submitted to the Graduate Faculty
of the Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

in

The Department of Psychology

by

Christine M. Turin
B.S., Saginaw Valley State College, 1977
M.S., University of Southwestern Louisiana, 1979
December 1985
Acknowledgements

In the course of this project, from inception to completion, special help was offered and gratefully accepted from many sources. Particular appreciation goes to the following people whose contributions were integral to the project: Dr. Gary Pettigrew, Louisiana Department of Corrections, who assisted in the development of the research question, provided data and offered technical advice throughout the project; Dr. June Tuma, Louisiana State University, who supervised the study, providing technical and editorial assistance, as well as encouragement and support; Dr. Joseph Rossi, University of Rhode Island, who skillfully navigated the statistical portion of this work; and Drs. Thomas Fain and Curtis Vincent, who facilitated collection of the forensic data and who improved my understanding of the practical aspects of clinical research. Special thanks go to my children, who sacrificed with few complaints and whose faith kept me going.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>vii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>A review of the literature</td>
<td>6</td>
</tr>
<tr>
<td>Validity scales and indices: MMPI</td>
<td>13</td>
</tr>
<tr>
<td>The Rorschach</td>
<td>26</td>
</tr>
<tr>
<td>Statement of Purpose</td>
<td>51</td>
</tr>
<tr>
<td>Method</td>
<td>54</td>
</tr>
<tr>
<td>Subjects</td>
<td>54</td>
</tr>
<tr>
<td>Instruments</td>
<td>55</td>
</tr>
<tr>
<td>Raters</td>
<td>60</td>
</tr>
<tr>
<td>Procedure</td>
<td>60</td>
</tr>
<tr>
<td>Statistical Analysis</td>
<td>61</td>
</tr>
<tr>
<td>Results</td>
<td>64</td>
</tr>
<tr>
<td>Hypotheses related specifically to the MMPI</td>
<td>67</td>
</tr>
<tr>
<td>Hypotheses related specifically to the PST</td>
<td>81</td>
</tr>
<tr>
<td>Hypotheses related to the combined use of the MMPI and the PST</td>
<td>82</td>
</tr>
<tr>
<td>Additional Analyses</td>
<td>98</td>
</tr>
<tr>
<td>Discussion</td>
<td>99</td>
</tr>
<tr>
<td>MMPI validation with malingerers</td>
<td>100</td>
</tr>
<tr>
<td>Validation of the PST</td>
<td>101</td>
</tr>
<tr>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Discriminant function analysis of the measures and variance accounted for by the variables</td>
<td>103</td>
</tr>
<tr>
<td>A comparison of prison simulators with forensic malingerers</td>
<td>106</td>
</tr>
<tr>
<td>References</td>
<td>117</td>
</tr>
<tr>
<td>Appendices:</td>
<td></td>
</tr>
<tr>
<td>A. DSM III Criteria</td>
<td>127</td>
</tr>
<tr>
<td>B. Informed Consent Form</td>
<td>130</td>
</tr>
<tr>
<td>C. Demographic Information Sheet</td>
<td>132</td>
</tr>
<tr>
<td>D. PST Booklet and Response Sheet</td>
<td>134</td>
</tr>
<tr>
<td>E. Simulation Instructions</td>
<td>147</td>
</tr>
</tbody>
</table>
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographic Characteristics of Subjects by Group</td>
<td>65</td>
</tr>
<tr>
<td>2. The Demographic Variables Race, Criminal History and Psychiatric History by Group</td>
<td>66</td>
</tr>
<tr>
<td>3. Descriptive Statistics for the MMPI F Scale by Group</td>
<td>68</td>
</tr>
<tr>
<td>4. Descriptive Statistics for the MMPI F-K Index by Group</td>
<td>69</td>
</tr>
<tr>
<td>5. Descriptive Statistics for the PST Type 1 Response by Group</td>
<td>70</td>
</tr>
<tr>
<td>6. Descriptive Statistics for the PST X+% by Group</td>
<td>71</td>
</tr>
<tr>
<td>7. Hit Rates by Group Using the MMPI F Scale</td>
<td>73</td>
</tr>
<tr>
<td>8. Hit Rates by Group Using the MMPI F-K Index</td>
<td>75</td>
</tr>
<tr>
<td>9. Source Table for Analysis of Variance Over Four Groups on the F Scale</td>
<td>78</td>
</tr>
<tr>
<td>10. Source Table for Analysis of Variance Over Four Groups Using the F-K Index</td>
<td>80</td>
</tr>
<tr>
<td>11. Standardized Discriminant Function Coefficients for Four Groups and Four Measures</td>
<td>84</td>
</tr>
<tr>
<td>12. Discriminant Function Analysis Classification Table for Four Groups and Four Measures</td>
<td>85</td>
</tr>
<tr>
<td>13. Standardized Discriminant Function Coefficients for Four Groups on the MMPI F Scale and F-K Index</td>
<td>86</td>
</tr>
</tbody>
</table>
Table

14. Discriminant Function Analysis Classification Table for Four Groups on the MMPI F Scale and F-K Index .............................................. 87

15. Standardized Discriminant Function Coefficients for Malingerers and Schizophrenics Using Four Measures ................................................. 89

16. Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using Four Measures ................................................. 90

17. Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using the MMPI F Scale .............................................. 91

18. Standardized Discriminant Function Coefficients for Malingerers and Schizophrenics Using Four Measures with Age, IQ and Race ....................... 93

19. Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using Four Measures with Age, IQ and Race ....................... 94

20. Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using the F-K Index Only .............................................. 96

21. Summary of Correct Classification Rates of Malingerers and Schizophrenics by Measure and Statistic ................................................................. 97
Abstract

The purpose of this study was to refine methods of detecting malingering of psychosis by forensic patients. The most effective measures of malingering to date were the Minnesota Multiphasic Personality Inventory (MMPI) F and F-K Indices. The literature, based on simulation research, was deficient in confirmatory work with true forensic malingerers. Further, the Projective Simulation Test (PST) had shown promise with simulators, but had not been used with malingerers. In this study, 50 prisoners volunteered from Hunt Correctional Institute, St. Gabriel, Louisiana, and were randomly assigned within reading groups to serve in Standard Instruction and Simulator groups, and 50 volunteers from Feliciana Forensic Facility, Jackson, Louisiana, were designated the Malingerer and Schizophrenic groups. Simulators were given instructions to respond as an insane person would, while the other three groups were given standard instructions. The MMPI is the best overall method of detecting malingering. The Malingerer group earned scores elevated beyond the published cuts of the F Scale and the F-K Index on the MMPI. Optimal cut scores of F 22 and F-K 10 were determined for this sample. Concurrent validity was not established for the PST with the MMPI. A combination of weighted measures discriminated Malingerers from Schizophrenics better than any single scale did, and the most powerful independent variables
in the linear equation were MMPI F-K Index, IQ and PST X+%, in that order. A comparison of the performance of Malingerers on the various scales with that of the analog group showed Malingerers and Simulators are similar but not identical groups.
Malingering, as defined by DeJong (1967), is a "willful, deliberate, and fraudulent imitation or exaggeration of illness, usually intended to deceive others, and under most circumstances, conceived for the purpose of gaining a consciously desired end" (p. 270).

The Diagnostic and Statistical Manual of Mental Disorders, Third Volume (American Psychiatric Association, 1980) becomes more specific in terms of the essential features of malingering and states "the essential feature is the voluntary production and presentation of false or grossly exaggerated physical or psychological symptoms. The symptoms are produced in pursuit of a goal that is obviously recognizable with an understanding of the individual's circumstances rather than of his or her individual psychology. Examples of such obviously understandable goals include: to avoid military conscription or duty, to avoid work, to obtain financial compensation, or to obtain drugs."
A high index of suspicion of malingering should be aroused if any combination of the following is noted: 1) a medico-legal context of presentation, (e.g., the person's being referred by his attorney to the physician for examination); 2) marked discrepancy between the person's claimed distress or disability and the objective findings; 3) a lack of cooperation with the diagnostic evaluation and prescribed treatment regimen; and 4) the presence of an Antisocial Personality Disorder" (American Psychiatric Association, p. 331).

Differential Diagnosis

Differential diagnosis is critical in view of the consequences involved to the individual and society. According to DSM III, "the differentiation of malingering from Factitious Disorder depends on the clinician's judgement as to whether the symptom production is in pursuit of a goal that is obviously recognizable and understandable in the circumstances. Individuals with Factitious Disorders have goals that are not recognizable only in light of their psychology as determined by careful examination. Evidence of an intrapsychic need to maintain the sick role suggests Factitious Disorder. Thus, the diagnosis of Factitious Disorder excludes the diagnosis of the act of
malingering. Malingering is differentiated from Conversion and other Somatoform Disorders by the voluntary production of symptoms and by the obvious, recognizable goal. The malingering individual is much less likely to present his or her symptoms in the context of emotional conflict, and the symptoms presented are less likely to be symbolic of an underlying emotional conflict" (American Psychiatric Association, p. 331-332). Previously, Munchausen's Syndrome and the Ganser Syndrome were classified by some as special cases of malingering. However, DSM III now groups these under Factitious Disorders with Psychological Symptoms (Ganser Syndrome) or with Physical Symptoms (Munchausen's Syndrome).

Historical Perspective

The term, malingering, first appeared in Grose's Classical Dictionary of the Vulgar Tongue in 1785, originating from the French word "Malingre" meaning sickly or ailing, and from the Latin "Malus aeger" meaning an evil or base disposition. Historically, the idea of feigning illness or disability to avoid duty, or for gain, is very old. From the days of the Greeks to modern times, cases have been noted (Adams, 1846; Keynes, 1951), although there
is a paucity of historical information because malingering was associated with avoidance of the military and it was feared that publicity would have an adverse effect on morale (Murphy, 1954).

Typical Symptoms and Types of Disorders Malingered

The signs and symptoms of malingering obviously depend on the clinical picture chosen by the patient, and such clinical pictures can involve any body system. Blinder (1970) has described characteristics that he considers typical of the malingeringer, such as an overriding preoccupation with "cash rather than cure" and the ability to "know the law and precedents pertinent to the patient's claim"; constant complaints about feeling miserable, with no accompanying signs or symptoms of depressive illness; symptoms that come and go; a long history of drifting about with spotty employment, as well as a history of alcoholism, drug abuse, desertion, or a criminal record. The literature is replete with methods of detection such as the use of sodium amytal (Schoichet, 1978; McDonald, Kline & Billings, 1979).

The kinds of psychiatric disorders that are likely to be feigned or exaggerated are amnesias, psychotic-like symptoms or behavior, neurotic-type
symptoms or behavior, and mental retardation. Jones and Llewellyn (1917) suggest the malingerer overacts his part, likely reporting extreme symptoms in the belief that the more bizarre his behavior, the more psychotic he will be considered. Maintenance of a pretended symptom for an extended period is quite difficult, making observation of the patient in an inpatient setting very useful in detection. A good history is essential and malingering should be considered only when all other possibilities have been exhausted. With malingered psychosis, consideration of the clinical picture in the case at hand with known clinical pictures and the natural history of the illness are essential. In addition, the behavior of the patient after the case is settled is significant. Behavioral correlates such as the setting in which the malingering begins and the time of onset lend credence to the diagnosis. Usually, very bizarre behavior in general tends to reflect a certain amount of malingering, as do ideas or behavior which conform to the subject's idea of psychosis but do not fit a typical clinical picture (Ossipov, 1944).
A Review of the Malingering Literature

A review of the literature regarding malingering shows a lack of all but the most basic work and much of this is merely descriptive in nature. The maintenance and/or basis for malingering was discussed by Olmstead (1976) who looked at the amount of "stroking" (i.e., positive reinforcement) for being ill which was present in the environment as a predictor of a "push to get well". She suggests stroking for being well as an aid to treatment. Kalman (1977) described and commented upon the phenomenon of combat-neurosis and the changes in attitude over time toward this illness. He cites numerous case studies and reflects on the paradox of calling those who seek, through malingering, to preserve life (usually seen as adaptive and healthy) as psychiatrically abnormal, while we see those who are willing to die in combat as psychologically normal. Rickarby (1979) discusses compensation neurosis as a homeostatic response of the family system and looks at theories for prevention and management of this syndrome.

All of these articles were case studies, at best describing various aspects of different malingering syndromes but not conducting true experimental
Detection Research

Methods of detecting or assessing malingering of different types of disabilities are in their infancy in the literature. Using an experimental analysis of behavior approach, Singh (1977) distinguished malingering and hysterical behavior by proposing that the former is under the control of remote consequences which may not be immediately verifiable or identifiable, whereas hysterical behavior is demonstrably under functional control of immediately contingent consequences. His work suggests that, in malingering, behavior deteriorates over trials, is not subject to change by immediately contingent consequences (shaping), and improves if it is conveyed that genuine patients perform better.

Looking at malingering of physical disabilities, Schoichet (1978) gathered data from 75 consecutive referrals on an outpatient basis for the assessment of the relative influence of organic and psychosocial factors in chronic pain related to workman's compensation claims. He used the administration of sodium amytal
to assess major symptoms, limits of physical performance and general personality style. Based on the response to sodium amytal as well as other clinical evidence, he grouped patients into four major diagnostic categories: organic pain, psychogenic pain, mixed pain and malingering. Although the group of subjects in the malingering category was small (seven patients or 9.3%), the general findings regarding their response to the study were interesting. Three of the seven initially refused the drug for various dramatic and medically-related reasons (e.g., a brother died from an injection).

In addition, all malingerers appeared tense and defensive during the pre-amytal phase of the examination. These were the only patients for whom an obvious worsening of the unchallenged clinical situation occurred upon injection of the drug. Termination of the study was often requested. In the early stages of the relaxing effect of the drug, these patients fought to maintain a stiffened posture. As further relaxation occurred, the patients in this group began to demonstrate facility, mobility and freedom of movement quite in contrast to the origi-
nal presentation, supporting the contention of malingering of symptoms.

To detect malingering in a case of feigned deafness, Pankratz, Faustian and Peed (1975) used a forced-choice technique in which the patient was asked to guess which of two temporal intervals contained a sound. The expected score (statistically based) for a truly deaf person is 50 out of 100 responses correct. Any deviation from this proportion is indicative of hearing ability. Indeed, his patient obtained 36 of 100 responses correct. The probability of obtaining this score by chance alone is less than .004, making malingering of deafness extremely probable in this case.

Assessment Research

More complicated assessment procedures involve various psychological instruments often with unique usage of typical scales, or utilizing particular patterns of scores, rather than global cutoffs. For instance, to separate normals, neurotics and simulating malingerers on the Maudsley Personality Inventory (MPI), Power, MacRae and Muntz (1974) used a discriminant function analysis to examine predictive accuracy
using the Keehn Malingering Scale with the usual MPI scales versus only the usual form of the MPI. The usual form gave a misclassification rate of 25%. The addition of the malingering scale reduced this to 11% by reducing the number of neurotics classified as malingers. These authors propose that although detection may be difficult on individual scales or scores, this pattern approach improves detection accuracy significantly.

Similarly, Bruhn and Reed (1975) used patterns of performance on the Bender-Gestalt Test to try to discriminate college students asked to simulate brain damage from organic subjects whose brain damage had been verified medically. Using the pattern approach, an ABPP certified psychologist was able to make valid sorting decisions in 90% of the cases in the pilot study without the more complicated scoring techniques sometimes used with this instrument. In the main study, the expert clinician correctly identified all 20 malingers. Relative to the organics, their test-taking strategies revealed patterns of response which varied markedly. When subjects radically change their normal test-taking strat-
egy to appear brain damaged, they are easily discriminated by pattern analysis.

Bash (1978) questioned whether malingering constitutes a special kind of psychopathology, and looked at the utility of a battery of tests (the Wechsler Adult Intelligence Scale, Rorschach, Bender Visual Gestalt Test, Listening Task, Structured Clinical Interview, Betts Test and the Perceptual Characteristic Questionnaire) for detecting malingering. Four Groups of 30 subjects were used, including malingerers, schizophrenic hallucinators, schizophrenic non-hallucinators, and non-psychotic patients. She concluded that malingerers do not constitute a special kind of psychopathology but rather the difference is in "what they are doing rather than in what they are" (p. 146). She found the tests used could discriminate malingerers from others, that the combined battery of tests discriminated better than any of them singly; the best test yielded six false positives and five false negatives while the battery yielded one false positive and four false negatives.
The MMPI

The MMPI is the most frequently cited instrument used in the diagnosis of malingering of psychosis. Heaton, Smith, Lehman and Vogt (1978) compared the results of 16 simulators who were neighbors, friends and college students of the researchers with those of 16 cooperative, non-litigating head trauma patients on the WAIS, the Halstead-Reitan battery and the MMPI. Although the overall level of ability impairment yielded by the malingerers equaled that of the head-injury group, different patterns of strengths and weaknesses were evidenced, and the simulators produced more deviant MMPI profiles and higher scores on the F Scale. The test profiles were sorted by ten neuropsychologists who made "blind" judgements as to the validity of the deficits indicated by the tests and the diagnostic accuracies ranged from chance to about 20% better than chance. Discriminant functions based on the neuropsychological test results and the MMPI, respectively, correctly classified 100% and 94% of subjects in both groups, dramatically improving accuracy.
Validity Scales and Indices

Some work has been done to determine the best MMPI validity scale faking detection techniques by comparing the sensitivity of the various scales to identifying dissimulated records. In general, it has been found that different scales optimally detect faking bad and faking good. Also relevant to the sensitivity of the scale were the specific methods used by the investigators in eliciting the deviant response set and the nature of the particular subject sample. The most effective cutoffs were dependent upon these factors. A sample of these studies follow.

Exner, McDowell, Pabst, Stockman, and Kirk (1963) examined the utility of the three standard validity scales, Gough's Dissimulation Scale (D_s), and the F minus K Index (F-K) in distinguishing faked good, faked bad and honestly reported profiles. Using 50 college students, half were instructed to appear "sufficiently deviant to be exempt from some social responsibility such as military service but not so deviant that institutionalization would be required" (p. 92). The other half were told to re-
respond "in a manner as to appear normal or socially desirable as would an attractive job or school applicant" (p. 92). Subsequently, all subjects were asked to take the MMPI again, this time responding in an honest manner. They found that the faking bad group was much more successful in manipulating the clinical scales than the fake good group. For the validity scales, the fake good group showed significant differences between administrations in the expected direction with one exception. For the faking bad group, there was a slight but non-significant increase in the L Scale (T score of 47 on the first administration to a T score of 44 on the second administration). In addition, this group showed significant differences between administrations of Gough's $D_s$ Scale, with 24 out of the 25 legitimate records scoring below a raw score of 20 and all of the fake bad records scoring above 20. Also of significance was the F-K Index where a cutoff score of +12 distinguished 24 of 25 records which were faked bad. However, the most sensitive predictor of a faked bad record was the F Scale which correctly classified all faked bad records using a cutoff of 12.
Using forty U.S. Air Force male clients with non-psychotic diagnoses, Anthony (1971) evaluated several MMPI faking detection scales. Again, the subjects took the MMPI under two different instructional sets, the first time under standard instructions and the second time with instructions to "exaggerate on the test whatever difficulties had brought them to the clinic and to appear in a worse condition than they actually were" (p. 101). The exaggerated profiles were compared with 32 similar profiles from other psychiatric clients. Again, the clinical scales were manipulated in the expected direction by the instructional set. The F-K Index (cutoff = 0) correctly classified 80% of the 40 standard and 40 exaggerated records; an F raw score of 10 correctly classified 81% of the profiles; the Gough D Scale (cutoff = 21) correctly classified 86% of the records; and the Subtle-Obvious Scale (cutoff = 100) correctly classified 86% of the profiles.

Grow, McVaugh, and Eno (1980) evaluated the efficacy of thirteen different MMPI faking detection techniques with seven techniques for faking bad, specifically, and computed the amount of variance assoc-
iated with faking that could be accounted for by the various detection strategies. The subjects were 150 college students given faking good, faking bad and legitimate instructions. In faking bad they were to appear as though they had "psychopathology of one form or another. Examples of such a situation could be: applying for Rehabilitation Services, trying to qualify for disability benefits, or trying to beat a legal charge on the grounds of insanity" (p. 911). The fake good group was told to "appear... completely normal and sane. Examples of such a situation could be: trying to secure an early release from a mental hospital, or applying for a good job" (p. 912). The third group was given standard instructions and took the test anonymously. The detection techniques of $F-K \geq 7$ and $F \geq 15$ for faking bad were most efficient. For the $F \geq 15$ technique, faking bad profiles were identified 100% of the time and for $F-K \geq 7$, 98% of the time. These two techniques accounted for 81% and 80% of the variance, respectively, associated with the students faking bad. These authors admit that there are difficulties generalizing from a subject pool comprised of students, since Dahlstrom, Welsh and Dahlstrom (1972) suggest, among other problems, their K scores
are shifted upward by almost one sigma. In addition, they questioned if one asked to fake truly represents someone who has a personal investment in faking bad.

To examine these issues, the authors cross-validated the results found above by reviewing inpatient and outpatient files to find cases of faking good, bad and taking the MMPI legitimately. Their criteria for inclusion in faking bad were: 1) the MMPI suggested more pathology than the rest of the clinical indicators; 2) there was a statement in the final report that the patient was faking bad; and 3) the presence of situational variables which would suggest that the patient would gain in some way from faking bad. The results showed that clinical populations do differ from student populations in terms of mean scores and variance accounted for. The two techniques identified previously were still most effective for the detection of faking bad (F-K≤7 and F≥15). However, the variance accounted for in clinical populations was 70% and 69%, respectively, as opposed to 79% and 80% with students. The F≥15 correctly identified faking bad 75% of the time while F-K≥7 was effective 81% of the time. The authors caution against heavy reliance on the F≥15
technique since factors other than faking bad can inflate the score.

Colligan (1976) addresses the issue of inflated F Scales due to atypical response sets with automated MMPI scoring. He suggests "eyeballing" (i.e., a visual scanning of) the completed test form to check for excessive numbers of items scored as "?" because of the response style. Further, profiles returned with an elevated F (≥ 20) should be scrutinized for clues about a response set in the remainder of the profile. With these potential contributors ruled out, more confidence can be placed in the high F as an indicator of faking bad.

As the Dahlstrom et al. (1972) study suggested, and as was corroborated by the Grow et al. (1980) study, generalization from student to clinical populations is fraught with difficulties. Thus, studies which address forensic issues should be conducted on forensic populations. There is a lack of such studies in the literature despite the widespread use of the MMPI with this patient group.

Clinical Studies

The earliest such study was conducted by Hunt
(1948) who compared the MMPI performances of psychology students with U.S. Navy court martialed prisoners. Given instructions to "conceal their personality abnormalities as much as possible so they would be certain not to be excluded from induction on psychiatric grounds" (p. 396), 53 students made up the fake good group. The fake bad group consisted of 56 subjects instructed to feign "sufficiently severe personality abnormality to insure a neuropsychiatric discharge or psychiatric disqualification for military service" (p. 396). Students also took the MMPI under standard instructions. The prisoner group of 74 subjects took the MMPI under all three conditions. As in the studies cited above, the clinical scales were successfully manipulated toward psychopathology by prisoners and students. Again, faking good was more difficult. In addition, the prisoners as compared to the students, produced greater variability in their distortions under both faking conditions. By use of the F-K Index (cutoff = +11), 88% of the student and 85% of the prisoner malingerer groups were correctly classified. Because this study was done previous to the development of many of the faking detection techniques,
no data are provided on any other scales or indices.

Again, manipulating instructional sets, Gendreau, Irvine and Knight (1973) had 23 prisoners take the MMPI under three instructional sets in a counterbalanced study. The fake bad group was told: "You know that in this prison, if you are diagnosed as having a lot of problems on psychological tests you may be able to get more psychological counseling or obtain a transfer to other institutions which have more or different treatment facilities... I want you to try to give a bad impression of yourself. I want you to try to make yourself look worse than you really are. Try to show that you have a lot of "problems". In other words, fake this test so that the results will show there are a lot of things wrong with you" (p. 185). The fake good instructions read: "You know that in this prison if you give a very favorable impression of yourself on the psychological tests this fact may be able eventually to help you obtain a transfer to another institution that has less security and more recreational facilities. Also, within this institution you realize you may be able to get a better job, etc., if you appear as being a very "normal"
person on the tests... I want you not to tell the truth, the way you really are. I want you to try to give an extra good impression of yourself... In other words, fake this test so that the results will show that there is nothing wrong with you" (p. 185). A third record under standard instructions was also obtained for each subject.

Consistent with previous work, the clinical scales were successfully manipulated in a faked bad direction. Of the faking detection indices, the F, F-K Index, $D_s$, and Weiner Obvious items all significantly discriminated between the honest and malingered records. The optimal cut off scores for F and F-K were 34 and 24, respectively. The cuts for the other two indices were not given. Scales L, $M_p$, K and Weiner Subtle items were little influenced by instructions to fake bad. The hit rates for various scales were: F Scale = 100%; F-K = 100%; $D_s$ = 96% and the Weiner Obvious items = 88% correct. However, there are methodological deficiencies in the study, the most obvious of which is the small sample size

---

1. It is noted that the use of percentages in this study may not be appropriate given the small sample size (23).
(N = 23) in relation to the number of dependent measures used (16 measures from the MMPI clinical scales and the validity indicators). The authors do not describe their sample in terms of racial composition despite the work of Gynther, Lachar and Dahlstrom (1978) which emphasizes the importance of this variable in MMPI interpretation. Also, the presence of mean elevations on Scale 8 in the standard instruction administration raises the question of a significant degree of psychopathology in at least some of the subjects. Finally, each subject served as his own control with no external criterion groups used, making confounding due to the idiosyncratic nature of the sample an even more cogent issue.

To address issues such as these, Salcedo (1983, unpublished dissertation) evaluated the various faking detection techniques vis-a-vis prisoner populations. Ninety-six subjects were selected from the U.S. Camp and Penitentiary in Lompoc, California, and assigned randomly to one of three groups with 32 in each group. One group was told to feign maladjustment, that is: "I want you to answer the test not as you really feel, but how you imagine someone who was trying to fake mental illness would answer it. Spe-
cifically, I want you to imagine that you are awaiting trial for charges of committing a crime, and that the answers you give on this test will determine whether you are sent to a mental hospital or to a prison. You are also to imagine that you very much prefer to be sent to a mental hospital, and so you want to appear as mentally ill as possible on this test" (p. 93). The second group was to respond as though they were "as normal or sane as possible" (p. 93). The third group was given the MMPI under standard instructions. The results indicated that subjects could feign maladjustment when instructed to do so, however, the validity indicators were effective at detecting these manipulations. That is, F for Simulators was elevated above controls and L and K were lower than controls. Again, the F-K Index distinguished Simulator and control groups. On the Obvious Scale (OB), the malingerer group had a significantly higher mean than the control group, and on the Subtle (SU) Scale the malingerers were detected by differences in the predicted direction. On the Subtle-Obvious Scale, the malingerer group had a significantly higher score than the control group. Likewise on the D₅ Scale,
the mean score for the Simulator group was higher than that for the control groups. The optimal cutoff scores for the significant validity indicators were \( F = 24 \), \( F-K = 15 \), \( L = 46 \), \( K = 46 \), \( D_S = 75 \), \( O_B = 352 \), \( S_U = 274 \), and \( O-S = 62 \). The numbers of subjects correctly classified using these cutoffs were \( O_B = 61/64 \), \( O-S = 63/64 \), \( F = 62/64 \), \( D_S = 60/64 \), \( F-K = 61/64 \), \( K = 51/64 \), \( S_U = 43/64 \), and \( L = 52/64 \).

As consistent with previous research, the ability to fake hyper-adjustment on the clinical scales was poor, as was the ability of the validity scales to detect this manipulation. This is, however, irrelevant to the present study which deals with faking bad only. Although the work of Salcedo with forensic subjects corroborates earlier analog work, methodological flaws, such as the combining of subjects from two locations (i.e., penitentiary with a maximum security setting and a camp with minimum security) who had significant demographic differences, and who showed significant differences on several of the dependent measures, may have compromised the internal validity of the study. The author also concedes that complete randomization is not assured due to the use of replacement subjects.
Summary of Research Findings on Malingering Using the MMPI

From the foregoing literature search, one can conclude that the use of the MMPI in malingering research is much favored. Generally, findings show that the clinical scales are easily manipulated in the direction of psychopathology (e.g., Exner et al., 1963) but that the validity scales and various faking detection indices are effective in distinguishing these records. All studies reviewed were successful in detecting simulating with the elevated F Scale (typically ≥ 10 or 15) and the F-K Index (typically ≥ 7 to 15), particularly (e.g., Anthony, 1971). Additional MMPI Scales often used were Gough's Ds Scale (e.g., Gendreau et al., 1973); however, the hit rates for these additional scales were generally lower. Instructional sets to fake good typically ask a subject to appear sane, healthy or normal and often give examples of situations where this would be advantageous, for example, applying for a good job. Conversely, sets to fake bad often ask subjects to appear worse than they are or to exaggerate whatever difficulties they may be having with the example of wanting to be placed in a hospital rather than a prison. The use of
college students as subjects in research as opposed to true clinical populations was questioned and studies testing this issue have shown differences (in favor of students) in mean scores on the MMPI and in variance accounted for (e.g., Grow et al., 1980).

The Rorschach

The use of the Rorschach is very common in personality assessment today. Sundberg, in 1961, found that the Rorschach had been the most frequently used instrument since 1940. Exner states this test was almost synonomous with clinical psychology during the 1940s and 1950s (1974).

The Rorschach Psychodiagnostic in its current form is the result of incredibly large amounts of research conducted since Herman Rorschach's classic monograph, Psychodiagnostic, more than fifty years ago (1921). Several major systems have evolved during the period since its inception, including those of Beck (1950, 1952), Klopfer (1954, 1956), Hertz (1951), Piotrowski (1957) and Schafer (1954). During this time, several dozen texts and more than 5000 articles have been published in the literature regarding its merits and problems (Exner, 1974). Some surveys (Shemberg
& Keeley, 1970; Biederman & Cerbus, 1971) suggest a decrease in the popularity and use of the Rorschach. However, other studies (Lubin, Wallis & Paine, 1971; Weiner, 1972) suggest that though the proportion of patients who are administered Rorschachs has decreased, the absolute number has possibly increased. This being the case, it would seem that although the Rorschach does not occupy the limelight in psychology that it once did, it is still widely used, and viewed with respect by many clinical psychologists.

The criticisms regarding the Rorschach usually relate to its subjectivity and the lack of empirical data to support the interpretations made from Rorschach responses. To address this objection, Exner (1974) has proposed a system which incorporates many of the features of the other major systems into one system called the Comprehensive System. He has combined the studies of many researchers using nearly 4000 subjects, young and old, who have participated in more than 200 studies initiated since 1973, when the original manuscript for the System was completed. Most of this work has funneled through Rorschach Workshops, a unit originally established to test the merits of the several Rorschach systems that were developed between
1935 and 1957; and, ultimately, a logical extension of that work was the integration of the positive findings into a unified Rorschach approach. Exner states (1978) "the original goals of that integration now appear to have been realized: to create a system that is easily taught, manifests high interclinician reliability, and that will stand up under various tests of its validity" (p. ix).

The 1974 text contained a table of group means (Exner, p. 217) for each of four samples: nonpatients, outpatients, inpatient nonschizophrenics, and inpatient schizophrenics. Standard deviations were not provided for these data because the sample sizes were small, and because one or more of the samples might have consisted of an overly heterogeneous grouping. These early data were meant to serve as a "reference" rather than a set of norms. Since that time, the research pools have been expanded to a point where a more precise grouping of "homogeneous" subjects is assured, which permits a more statistically thorough comparison of different groups. In the new reference tables, (Exner, 1978), subgroups were separated and sample sizes were enlarged allowing significance testing to compare the variety of socioeconomic levels in a group.
Tables of revised and expanded reference data are provided for five samples of subjects: nonpatients, outpatient nonpsychotics, inpatient character problems, inpatient depressives, and inpatient schizophrenics. Normative data has also been supplied for younger patients, nonpatients, behavior problems and withdrawn patients ages 5 through 16 years.

Administration, scoring and interpretation have also been objectified and standardized in this new system. In 1976, Exner completed the Structural Summary, a form on which to record data from the protocols.

The handful of test-retest reliability studies that had been reported before Exner (1974) were reasonably encouraging. Ford (1946) reported reliabilities for the scoring determinants ranging from +.38 to +.86 for a group of young children retested after 30 days. Kerr (1936) had previously reported substantially lower reliabilities for young children retested after one year, results that may logically be attributed in part to the growth factor. Holzberg and Wexsler (1950) deliberately used this technique with a group of schizophrenics, assuming that they would manifest considerable "unreliability". Surprisingly,
the schizophrenic sample manifested significantly high and very respectable reliabilities across most scoring variables. Kelley, Margulies, and Barrera (1941) found very little change in the protocols of 12 patients retested two hours after having received electroshock treatments, and who demonstrated total amnesia for the first testing, which had been completed just prior to the treatment.

One cannot logically assume that all Rorschach determinants should be constant over time. Because some variables respond to the situational elements available they will legitimately vary over time. Some are state phenomena, while others are related to the more durable response tendencies of the individual, for example, good form quality (X+%).

To review the issue of temporal consistency using the Comprehensive System, Exner, Leura, Armbruster and Viglione (1977) recruited a large sample of non-patient adults who were willing to be retested again after three years. Of the original 170 subjects (inflated to allow for attrition) 100 subjects were retrieved and retested. Nineteen variables were computer coded from the Structural Summary, selected because they were thought to represent the "core" of structural data from which Rorschach interpretation proceeds.
Substantial correlations occurred for almost all variables, with only two variables correlating at below the .70 level, and both of these are seen as situational in nature. Exner and Bryant, 1974, studied nonpatients retested after seven days, and Exner, Armbruster and Leura, 1975, looked at nonpatients retested after 60 days. Both of these studies agreed with the retest work of the Exner et al. study (1977). Working with outpatients retested after 30 days, Leura, Wylie, and Exner (1976) found considerably more variability among these subjects than among the three nonpatient groups. Correlations for eight of the 19 variables fell below the .70 level, with three of those below the .60 level. The authors could not determine whether the greater variability for this group was a function of turmoil, chance, or a deliberate effort to dramatize greater disarray so as to hasten the beginning of treatment (they were on a waiting list for the 30 days). Looking at inpatient schizophrenics retested again after 10 days, Exner, Zalis, Schayler, Schumacher, and Kuhn (1976) found that none of the correlations for this group fell below the .70 level, although it was interesting that the correlations for two of the variables were lower than for the other five groups reported. The highest correlation was for the X+%
(.92), which reflects the consistently low frequency of good form quality answers given among this population.

Summarizing this line of research, Exner observes that nonpatients over varying intervals show a high consistency for most variables and ratios, and newly admitted schizophrenics show a similar consistency over a brief period while outpatients on a waiting list show greater variability.

To look at the variability of the Rorschach under treatment conditions, two more studies were instituted with the goal of studying temporal consistency and treatment effects. Exner, Wylie & Armbruster (1975; 1976) sought the cooperation of hospitals, clinics and private therapists to test their patients two or more times. They set up two groups to be retested at a specific time during or after treatment. One group was tested before and after treatment (90 days or less) with the majority being treated through supportive psychotherapy, systematic desensitization, etc., for "reactive depression" conditions. The second group entered long term psychodynamically-oriented psychotherapy for neurotic conditions. All subjects were tested within a week
of the first session and then retested by "blind" examiners. The protocols were scored by the examiner taking the record, and then rechecked by at least two experienced clinicians with any disagreements resolved by one of the project leaders. The correlation coefficients for the brief treatment group show consistency except for four variables, all of which were treatment targets. Among the long term treatment subjects, a retest after six months showed extensive variability. The results of these two studies indicate that some Rorschach variables, particularly those relating to manifestations of emotion, are highly subject to alteration by different forms of intervention. However, some variables are remarkably stable, at least over periods of up to six months. These variables include the Popular (P) responses and the good form quality response percentage (X+%), both of which are empirically determined.

Of particular importance is the good form quality response percent (X+%) which was quite consistent throughout all seven studies regardless of population or time period. This suggests that the perceptual accuracy of people is very stable over time, whether it is good or poor.
The issue of the fakability of psychosis using the Rorschach has been addressed in the literature. Exner (1978) states, "people who try to fudge psychosis on the Rorschach are usually confronted with the problem of their own perceptual accuracy... Usually, the person trying to feign schizophrenia will use bizarre and/or dramatic wording in his answers, and quite frequently will give unusual answers; but when the form quality scoring is examined closely, the sham has failed: ... there is little basic distortion in the perceptual accuracy, so that the F+\% (percent of good form quality of pure form responses) and X+\% (percentage of good form quality of all responses containing form) are typically within normal limits" (p. 51-52).

Form Quality and Schizophrenia

Addressing the issue of the distinction between schizophrenic and non-schizophrenic Rorschach records, Harrower and Steiner (1944) used a multiple choice group Rorschach test and found that patient groups selected more poor form responses than normal groups. Here, 6 to 16\% of normal groups versus 73 to 79\% of patient groups gave four or more poor form responses, supporting Exner's thesis regarding perceptual accuracy and distortion.

Approaching this issue from another perspective, Exner and Wyley (1975) asked twelve second year
graduate students completing their first Rorschach course to create a schizophrenic protocol within a two hour limit. Only one subject was able to create a record that was later judged as schizophrenic when "blindly" reviewed by three judges who were naive as to the purpose of the study. Here, again, it appears that more is operating in a "schizophrenic record" than bizarre wording and unusual responses which are readily produced by simulating normals.

To further clarify this issue, Exner, Armbruster and Mittman, in their 1978 article on the Rorschach response process, asked five groups of subjects consisting of 20 schizophrenics, 20 depressives, 20 nonpatient adolescents and 40 nonpatient adults to give as many responses as possible to each Rorschach card within a 60 second time limit per card. They found R increased dramatically over the mean for standard instruction for all subjects. Also, all groups except schizophrenics consistently gave good form quality answers. Schizophrenics not only identified a reasonably high frequency of poor form quality responses while still giving an average of more than 60 answers, but they also identified a significantly high percentage of these answers as being the "best"
among all those they had delivered in spite of the fact that their records also averaged more than eight popular answers. None of the nonpatients selected a minus response as among the best. Of the inpatient depressives, only one considered a minus answer as among the best given and 18 of the 20 subjects in that group used at least 9 populars as among their best 20 responses. However, only four of the schizophrenics selected more than four Populars among their best answers, and nine of that group failed to include any Populars. Seven selected more minus form quality responses than good form quality answers. Thirteen of the 20 picked at least two minus responses among the 20 best, and all 20 included at least three weak answers in their choices. These findings offer support for the idea that the schizophrenic "sees" things in a manner different from nonschizophrenics.

Also related to this issue is the work of Exner and Leura (1976) who used 60 nonpatient adults who had volunteered to participate in a "broad standardization" project involving the Rorschach and its interpretation. The subjects were given a list of five responses to each card, and these responses were outlined and indicated on a location sheet.
The responses included one Popular, two frequently given responses that are not Populars and two infrequently given responses. One or two of the five responses had content relating to violence, injury or sexuality. One group was told the five responses listed for each blot represented those most frequently reported by "severely disturbed psychiatric patients" and that while these objects might be hard to see at times, the purpose of the study was to determine the very level of difficulty and, consequently, to gain a better understanding of the perceptual process of psychiatric patients. The subjects were to check the five responses against the blot and to evaluate the ease with which each percept could be recognized as compared with the other four using a rank order method. Subjects in the other group were given identical instructions except they were told the five responses were given most frequently by normals subjects. The results suggest that under normal testing conditions, subjects tend to reject, inhibit or process out those responses which do not appear to be acceptable in the context of social desirability and/or the set under which the test is occurring. When subjects thought the responses were common for normals, they found the blood responses
easy to see and ranked them accordingly. For those operating under the psychiatric set, the blood responses were ranked as very difficult to see. Similar results were found for the responses "penis" and "naked woman". The results also suggest that while the response set can be very influential, such influence is probably restricted to some broad parameters which are contingent upon the stimulus features of the blots, since both groups ranked the same thirteen answers as the most difficult to see. This agrees with the previously cited study (Exner, et al., 1978) which indicates that subjects tend to maintain the same form quality throughout their answers even when asked to generate many more responses than normally expected.

Exner concludes that most sets including social desirability, will probably not cause a subject to deviate significantly from his own level of perceptual accuracy. None of the three poor form quality answers in the fifty that were listed (bulging eyes, buttocks, man's face) was ranked as "easy to see" by many subjects in either group, and all three were ranked as the most difficult to see by the overwhelming majority of subjects in both groups. This
finding has implications for the interpretation of poor form quality responses. That is, evidence suggests that a poor form quality response will not be provoked by a test situation or a set for that test.

Summarizing this line of research, when a subject delivers a poor form quality answer, it is probably because he or she does see that object easily, and mentally ranks that potential answer as being "better" than other objects that are also seen. This is a critical factor in differentiating the "malingered" protocol from that given by the true schizophrenic.

The schizophrenic has difficulty seeing things in the same way as non-schizophrenics do. This is suggested by the consistently low form quality responses given by schizophrenics in the Exner, Armbruster and Mittman (1978) study. When asked to rate their responses, they tended to select poor form quality answers as their "best" even though they had generated some popular responses. The difference in the perceptual process was demonstrated in the Exner & Wyley study (1975) where psychology graduate students were unable to create convincing schizophrenic protocols. Further evidence of this comes from Exner and
Sherman (1977), who gave the Rorschach as a routine diagnostic procedure to a group of ten schizophrenics. They were retested the same day, being told that the staff agreed they could probably "improve" their performances. The same judges who evaluated the graduate student protocols (see Exner & Wyley, 1975) blindly evaluated these protocols and found all ten to be schizophrenic. They found some changes between administrations in content, location selection and length, however, the F+ and X+ percents remained essentially unchanged.

Studies Using Instructional Sets

The variable of instructional sets has been used in researching the fakability of the Rorschach test with simulation and malingering of psychosis being equated as a "set".

Using a retest design, Fosberg (1938) implemented instructions to subjects to make the "best" as well as the "worst" impression on separate administrations of the Rorschach. Subjects were also given standard instructions and asked to look for various things, one at a time. He concluded that although subjects could alter responses, "they could not escape their basic self without leaving... traces of their
basic origin" (p. 30).

To further explore the alterations in Rorschach responses, Fosberg (1941) gave psychology professors, graduate students and undergraduate students varied instructions on repeated administrations of the test. He found high retest reliability coefficients for formal scoring, except for content. Content was altered by instructions, but it affects the personality analysis least. However, this study was criticized on methodological grounds by Carp and Shavzin, 1950. In their study, they asked elementary psychology students to give a "good" or "bad" impression on counterbalanced Rorschach retests three weeks apart. With the exception of organizational activity (Z), formal scoring categories (including the percentage of good form responses using only form as a determinant (F+%) did not significantly differ. Likewise, Easton and Feigenbaum (1967) found that special instructions with a group of college students produced changes and supported the contention that a set to fake the test influenced test scores, however, scores reflecting perceptual accuracy were not significantly altered.
Feldman and Graley (1954) worked in this same line looking at the specific effects of "set" to simulate abnormality on the group Rorschach test by normal college students. Experimental sets produced specific protocol changes in determinant scores. Location scores changed very little. Those subjects asked to simulate abnormality had significantly more human movement (M), form-dominated color responses (FC), color-dominated form responses plus pure color responses (CF + C), sex anatomy responses, and significantly fewer Popular responses than those given standard instructions. In addition, the "set" group records contained numerous blood, fire and explosion/smoke responses, self references, and aggressive and sexual content responses which were absent in the standard instruction group protocols. These simulated protocols were most similar to those of anxiety hysterics; very few protocols resembled psychotic records.

These results appear to be at odds with Fosberg's (1938, 1941) conclusion that the Rorschach cannot be faked. However, similarities exist in the
(who were merely told to malinger paranoid schizophrenia). Results showed that faking was not detectable regardless of psychological sophistication level; however, significantly more role-informed faked protocols received psychotic designations than the role-uninformed faked protocols and as often as the actual psychotic protocols. It is unknown whether judges used Exner's formal scoring system or some other method of scoring the protocols. This variable could account for these unusual results. The authors suggested that the judges selected may have been less expert than desired; however, they used forty-six Fellows of the Society for Personality Assessment, and each of the 24 protocols was evaluated by six to nine judges. The expertness of the judges may be a factor; however, other issues may be equally plausible. They noted that the inpatient protocols were from relatively young, paranoid, patients who were stabilized on psychotropic medications, and thus, these subjects may not have been as highly disturbed as might have been the case if they had been older and/or unmedicated, or had been non-paranoid schizophrenics. From this study, several issues arise. It appears that diagnostic reliability
results in that, again, most of the significant changes appeared in the qualitative content. The percentage of good form quality pure form responses (F+) was not significantly different among groups. The authors suggest that these data cannot be taken as directly representative of "true" malingering results since college students have different motivational bases regarding their responses. They cite Benton (1945) and Rosenberg & Feldberg (1944) who used "true" malingerers in military settings. Both studies found that malingerers gave few responses, were inconsistent in responding, and gave few populars. They conclude that normal college students attempting to simulate abnormality do produce different results on the Rorschach from those malingerers who have more realistic consequences at risk.

Albert, Fox, and Kahn (1980) examine the ability of expert judges to detect faked Rorschach protocols, focusing on the psychological sophistication variable. Judges were asked to blindly evaluate both faked and actual psychotic protocols from college students and psychiatric inpatients, respectively. The faked protocols were produced by either role-informed subjects (who received a detailed audio tape description of paranoid schizophrenia) or uninformed fakers
checks are necessary even when judges are considered the experts in the field. The authors question the effects of psychotropic medication on the form quality of the responses given to the Rorschach cards. Also, what is the effect of role information, given that these other variables are accounted for? This study raises more questions than it answers. It does show that information about the disorder malingered does assist the malingerer to produce a more believable performance. Thus, the researcher should consider the effect of multiple admissions to mental institutions and other sources of role information as possible extraneous variables in malingering studies.

Clinical Studies of Instructional Set

Work with clinical populations is fairly limited in the literature. Using forty-eight male prison inmates, Seamons, Howell, Carlisle and Roe (1981) looked at the effects of varying instructions and the response differences appearing between four diagnostic groups: non-schizophrenics (no signs of psychosis); latent schizophrenics (signs of psychosis but no history); residual schizophrenics (past but no current psychosis); and schizophrenic-psychotics
Currently psychotic). Diagnostic criteria were not indicated. Subjects were administered the test twice, being asked to appear well adjusted and to appear psychotic in a counterbalanced design. Partially replicating the results of Feldman and Graley (1954), they found that subjects asked to appear psychotic had a significantly high number of dramatic, blood, and inappropriate combination responses. Congruent with Fosberg (1938, 1941), with one exception (content), no significant changes were noted in the ratios, percentages, and derivations as a result of the simulated normal and simulated mentally ill state. When subjects were to respond as though they were mentally ill, they gave an increased number of responses containing sex, blood, mutilation and fighting. Again, as in the Easton and Feigenbaum study (1967), Popular responses were significantly reduced in attempting to appear psychotic. Looking at the ability of the Rorschach to discriminate between the four diagnoses, data showed the latent schizophrenic group and the non-schizophrenic groups gave more dramatic and bizarre responses than the residual and the psychotic groups. Thus, those trying to appear psychotic altered a limited number of variables but, with one exception (content), not those derived
from the ratios, percentages and derivations. They decreased popular responses and increased dramatic and bizarre responses. The authors suggest that in a forensic or prison population, when percent of good form quality \((X+\%)\) or good form quality of pure form only \((F+\%)\) are within the normal range, and a high number of bizarre, dramatic, blood, texture, shading, vista, non-human movement, or inappropriate combination responses are observed, it may be indicative of an attempt to appear mentally ill.

Agreeing with all previous work, Exner (1978) examined data from 23 Rorschach protocols of "validated" malingerers. To validate the malingering, a legal survey was completed on the subjects. Most had previous cases where successful malingering had resulted in financial or other reward. (In at least one case, this discovery led to the filing of the charges of attempted fraud. The subject then withdrew his disability claim.) He concluded that subjects attempting to feign schizophrenia ordinarily use bizarre and/or dramatic wording with little distortion in perceptual accuracy, so that percent of good form quality for any form response \((X+\%)\) and percent of good form quality for pure form responses only \((F+\%)\) typically remain within normal limits.
Stemming from this line of thinking, Pettigrew, Tuma, Pickering and Whelton (1983) evaluated a multiple-choice group Rorschach instrument, the Projective Simulation Test (PST). The PST gives subjects the option of four types of responses to the ten Rorschach plates: (1) good form, bizarre wording defined as referring to pathology, morbidity, tragedy or sexual deviance (e.g., "Blood after a suicide"); (2) good form, unelaborated, neutral wording (e.g., "an island"); (3) poor form, neutral but elaborated wording equal in length to response type one (e.g., "An anchor for ships"); and (4) poor form, unelaborated, neutral wording (e.g., "A snowflake"). Following from the work on form quality and schizophrenia versus malingering of schizophrenia, this instrument is constructed on the hypothesis that schizophrenics will select poor form quality responses (types 3 and 4) and malingerers will select more good form, bizarre wording responses (type 1). The responses used to represent the categories were selected from empirically derived tables of perceptual accuracy (Exner, 1974), where goodness of form for the responses was defined in terms of the frequency with which it was given by normal examinees.
This instrument was used to discriminate college students simulating psychosis from college student controls and from diagnosed schizophrenics, both given standard instructions. The diagnostic criteria for the schizophrenic group were not indicated. The schizophrenic group contained psychotics at both civil and forensic facilities. As hypothesized, simulators chose significantly more good form, bizarre wording responses than normals or psychotics. However, it was found that the test score distribution of the forensic psychotics was very similar to that of the normal control group. The authors suggest that some of these patients may have previously feigned psychosis to avoid correctional placement and that efforts to simulate may have been abandoned following adjudication. This suggests that malingering subjects should be pretrial in status to be sure the motivation to mangle is existent.

Summary of Research Findings of Malingering Using the Rorschach

From the above literature review, several conclusions can be drawn. Research in the area of faked Rorschach protocols generally shows that poor form quality discriminates psychotics from simulators, and simulating normals are generally unable to produce re-
sponses of poor form quality. In addition, expert judges are less able to detect faked protocols if the simulators are role informed. Research shows the presence of a set in Rorschach productions does alter responses although alterations appear to be concentrated in qualitative rather than quantitative areas, and the simulated psychotic, as opposed to the true psychotic, gives a typical pattern of responses. That is, simulated protocols contain bizarre wording with dramatic, aggressive, and sexual content; however, the percentages of good form quality in any response containing form (X+) and of good form quality in pure form responses (F+) remain within normal limits and, in general, the ratios, percentages and derivations remain unchanged. It also appears that college students simulating psychosis versus clinical populations simulating psychosis versus true malingerers may produce different types of protocols. Initial work with a multiple choice Rorschach test (PST) shows it has discrimination capacity with regard to simulated malingerers from other groups, including schizophrenics. Civil schizophrenics choose more poor form responses,
while simulators, like normals, choose good form responses, although unlike normals, they typically use bizarre wording and content.

**Statement of Purpose**

The purpose of this study is to refine methods of detecting malingering. This will be done by comparing the responses of diagnosed malingerers and schizophrenics from a forensic setting to simulators and standard instruction subjects from a prison setting on the MMPI (F Scale and F-K Index) and the PST (Type 1 responses and X+%). It has been shown that the two MMPI validity indices can discriminate faked bad profiles from those honestly taken; however, much of this research was analog, and much of the clinical research was methodologically flawed. It has also been shown in pilot-type work that the PST can discriminate between simulated malingerers and other groups, including schizophrenics. However, neither the PST nor the MMPI have been used in a study with diagnosed malingerers compared to other clinical populations.

Specifically stated, the purposes of this study were: (1) to replicate the use of the MMPI F Scale and F-K Index with a true clinical sample of malingerers; (2) to determine concurrent validity for
the PST scales with the MMPI; (3) to assess the ability of a weighted combination of measures to discriminate between the groups and to show which independent variables account for most of the variance; and (4) to compare these results to those of the analog and control groups.

Specific hypotheses related to the MMPI are:
1. Malingerers and Simulators will receive elevated scores on the validity indices using the cutoffs of $F \geq 15$ and $F-K \geq 7$, as suggested by previous research.
2. Scores of the Standard Instruction group on these indices will be within normal limits ($F \leq 14$ and $F-K \leq 6$).
3. Scores for the Schizophrenic group will be elevated on the F Scale due to their active psychosis; however, their F-K Index will be lower than that of the Malingering group and the Simulator group. Thus, the F Scale will discriminate the Standard Instruction prisoner group (lower scores) from the other three groups. The F-K Index will then discriminate the Schizophrenic group (lower scores) from the Malingerner and Simulator groups.

Specific hypotheses related to the PST are:
1. The Schizophrenic group will select poor form (types 3 or 4) responses significantly more often than the other groups.
2. Malingerer and Simulator groups will select good form, bizarre wording responses (type 1) significantly more often than the other groups.

3. The Standard Instruction prisoner group will select good form, neutral wording responses (type 2) significantly more often than the other groups.

Specific hypotheses related to the combined use of the MMPI and the PST are:

1. The use of both instruments in conjunction will yield the best rate of correct classification when analyzed through discriminant function analysis.
Method

Subjects

One hundred males from two Louisiana facilities served as subjects for this study. Of these one hundred males, fifty were prisoners with no diagnosis, twenty-five were diagnosed as schizophrenic and twenty-five as malingerers. Subjects for the latter two groups were forensic patients.

Simulator and Control Groups. The fifty males with no diagnosis were obtained from Hunt Correctional Institute (HCI) in St. Gabriel, Louisiana, to serve as the two prisoner samples. They were volunteers from the adult education classes, with each class-member having the opportunity to participate. These fifty subjects were randomly assigned (within reading groups) to two groups, the Simulator and Control groups. To rule out psychosis within the prisoner groups, files were checked for diagnoses made and entered into their charts as their mental health code upon admission. (Only subjects with codes A, C and D were acceptable for the study. Code A represents no mental health contact suggested; code C means self-referral only; and code D is a referral for substance abuse treatment only.) The fifty prisoners
were post-trial and serving their sentences.

**Malingering and Schizophrenic Groups.** Twenty-five males, diagnosed as Malingerers (see criteria in Appendix A) and twenty-five males diagnosed as Schizophrenics (see criteria in Appendix A) upon intake, were obtained from the Feliciana Forensic Facility (FFF) in Jackson, Louisiana, to serve as the two volunteer forensic samples. All FFF Malingerers were pretrial in status to assure optimal motivation, i.e., that the motivation to appear schizophrenic would still be operational. Schizophrenic subjects were either pretrial or not guilty by reason of insanity in status.

**Instruments**

**Informed Consent Form** (Appendix B). All subjects were volunteers who signed a consent form which assured them their participation or refusal to participate would not affect their status in any way.

**DSM III Criteria** (Appendix A). All FFF subjects were selected through use of these criteria which were taken directly from DSM III and further explained using examples of criterion behaviors in checklist form.

**Demographic Information Sheet** (Appendix C). A demographic information sheet was completed on each subject.
This sheet contained information about the subject's age, race, education, psychiatric history, family psychiatric history, criminal history, and use of medication.

**Minnesota Multiphasic Personality Inventory (MMPI).** The MMPI is a true-false inventory consisting of items which the examinee applies to his own preferences, thoughts, actions or ideas. It can be scored for four validity scales and ten clinical scales, plus innumerable special scales which have been developed by various authors. For purposes of this study, only the F and K scales were scored to yield the raw scores associated with the F and F-K Indices. For the FFF subjects, the MMPI Form R was used, yielding the F and F-K indices directly. For the HCI subjects, the MMPI 168 (Overall & Gomez-Mont, 1974), which is an abbreviated form of the inventory, consisting of the first 168 items, was used. The Standard Conversion Tables (Overall, Higgins & de Schweinitz, 1976) were used to obtain the estimated F and K scale values.

The test-retest reliabilities for the F scale range from .80 to .97 for one to two day intervals, from .62 to .87 for one to two week intervals, from .51
to .61 for an eight month interval, from .63 to .76 for a one year interval, and from .45 to .49 for a three year interval (Dahlstrom, Welsh & Dahlstrom, 1975). The test-retest reliabilities for the K scale range from .46 to .89 for a one to two day interval, from .71 to .96 for a one to two week interval, from .64 to .67 for an eight month interval, from .42 to .72 for a one year interval, and from .52 to .56 for a three year interval (Dahlstrom, Welsh & Dahlstrom, 1975). Pearson product-moment correlations of the F and K scales of the MMPI 168 and standard MMPI with incarcerated offenders were .90 and .83, respectively, and there was 86% agreement for decisions on test validity (Walls, McGlynn & Tingstrom, 1977).

**Projective Simulation Test (PST)** (Appendix D). This measure is a fifty item multiple-choice group projective test which gives subjects the option of four types of responses to the ten standard Rorschach plates: 1) good form, bizarre wording; 2) good form, unelaborated neutral wording; 3) poor form, neutral but elaborated wording; and 4) poor form, unelaborated neutral wording (Pettigrew et al., 1983). To minimize confusion regarding the Rorschach blot to which each question pertained, an 8 X 11 template with a cutout large enough
to reveal one blot was used over the standard color location sheet. For this measure, the frequency of Type 1 responses (good form, bizarre wording) and the $X+\%$ (total percentage of good form quality responses in the record) were calculated. For purposes of this study only the form quality variable was used to yield the Type 1 response and the $X+\%$.

Test-retest reliability coefficients for form quality of .80 for three years, .84 for 60 days, .83 for 30 days and .88 for seven days were found for non-patient adults using the Exner Comprehensive System on the Rorschach (Exner et al., 1977, Exner et al., 1975, Luera et al., 1976, Exner & Bryant, 1974). For inpatient schizophrenics retest coefficients of .92 for form quality were found after ten days (Exner et al., 1976). The form quality retest coefficient for outpatients in brief treatment after 90 days was .84 and after 180 days was .81 (Exner et al., 1975; 1976).

For the PST, split half reliability by response type was .91 for Type 1, .75 for Type 2, .51 for Type 3, and .41 for Type 4 (Pettigrew, et al., 1983). Alpha coefficients by group for the current study were .63 for Schizophrenics, .76 for Malingerers and .71 overall.
Ammons and Ammons Quick Test (QT). The QT is a relatively brief estimator of intellectual function which is suitable for non-verbal clients (Ammons and Ammons, 1962). In this measure, a word is read by the examiner and the client is to indicate which of four pictures best depicts the word. The frequency of correct responses is then tabulated and the corresponding IQ is obtained using a conversion table.

Pearson correlations ranging from .63 with incarcerated males (Gendreau, Wormith, Kennedy & Wass, 1975) to .91 with psychiatric inpatients (Ciula & Cody, 1978) have been obtained with the WAIS Full Scale IQ.

Revised Beta Examination (Beta). This is a short, group, intellectual-screening device reported to be the most widely used IQ screening device in corrections (Gendreau, 1975). It results in one estimate of IQ.

Pearson product-moment correlations with the WAIS Verbal, Performance and Full Scale IQs ranged from .49 to .52, .62 to .68, and .63 to .61 with incarcerated males (Hubble, 1978; Gendreau, Wormith, Kennedy & Wass, 1975). Pearson correlations between the QT and the Beta with incarcerated males ranged from .32 to .68 (Gendreau, Wormith, Kennedy & Wass, 1975).
Raters

The admissions clinicians at Feliciana Forensic Facility represented three disciplines, Psychology, Social Welfare and Psychiatric Nursing. The Psychology staff consisted of two doctoral-level clinical psychologists, two advanced doctoral candidates in clinical psychology, and one masters-level clinician. The Social Welfare staff consisted of three masters-level social workers. Two Registered Nurses represented the Psychiatric Nursing staff.

Procedure

All subjects signed an Informed Consent Sheet and the Demographic Information Sheet was completed by a staff member.

The FFF subjects were selected using the DSM III Criteria Sheets. At intake, one member of each of the three disciplines completed a criteria sheet for patients judged as diagnostically appropriate. The criteria were carefully explained to the admissions staff. The criterion for inclusion in the study was that two disciplines agree on diagnosis. Patients were then administered the full form MMPI, the QT and the PST by a member of the FFF
Psychology staff. Subjects were tested individually in the facility testing room as they were admitted.

The HCI subjects were administered the MMPI 168 and the PST by a member of the HCI Psychology staff. Beta IQ scores were obtained from the files (administered routinely upon admission to the Corrections Department). All testing was completed in regular testing rooms in two groups of 25.

Instructions for the MMPI and PST used with the Simulator group appear in Appendix E. Subjects were asked to "try to fool the psychologist into thinking you are crazy". They were encouraged to respond not as they would in an honest administration, but as a "crazy" person would. The remaining three groups were given standard instructions. The HCI Standard Instruction Control group was tested before the Simulator group to assure that the Control group data would not be contaminated by subjects hearing about the simulation from other prisoners.

**Statistical Analysis**

To determine the ability of the measures to discriminate among the four groups, a stepwise discriminant function analysis (DFA) was performed. This
function was used to discriminate among overall group membership, predict group membership in comparison to actual group membership, and determine whether differences exist among the average score profiles of the four a priori defined groups. In addition, it was used to determine which of the independent variables accounted for most of the differences in the average score profiles of the four groups. A probability level of .05 was considered significant for purposes of this study.

Four measures were selected as independent or predictor variables, the MMPI F scale and the F-K Index, and the PST Type 1 response and X+. Also included in an analysis as independent variables were Race, IQ and age to determine their power to improve the weighted linear equation.

The dependent or criterion variable was the group to which the subject was assigned. That is, Simulators, Standard Instruction Controls, Malingers or Schizophrenics.

To determine the power of the published cuts for the MMPI F scale and F-K Index, chi square analyses were computed on the frequencies of scores falling above the cuts for all four groups.
Analyses of variance were used to determine whether significant differences were present among the four groups on the F scale and F-K index, with a Tukey post hoc test used to determine where existing differences were.

The Student's $t$ statistic was employed to test for significant differences between the means of the F scale and the F-K index of the collapsed prison groups and the collapsed forensic groups. This procedure allowed a comparison of possible institutional sets effects.

A test of orthogonal contrasts was utilized to determine the significance of the selection of PST form quality responses by group.

Optimal cut scores were derived for the F scale and the F-K index. This was accomplished by finding the score which yielded the highest correct classification rate between Schizophrenics and Malingers.

This analysis was conducted through the use of computer facilities at the University of Rhode Island in Kingston, Rhode Island. The SPSS-X standard programs were used as described in the SPSS-X Users' Guide (1983).
Results

Table 1 shows the demographic characteristics, age, education and IQ of the subjects by group. Analyses of variance revealed no significant differences among the groups for age ($F(3, 96) = 2.57, \text{ns}$) or education ($F(3, 96) = 2.11, \text{ns}$). However, for the variable, IQ, significant differences were detected by the analysis of variance procedure ($F(3, 96) = 3.09, p<.05$), and a Duncan multiple range post hoc test showed the FFF Malingerers mean to be significantly less than the mean of the FFF Schizophrenics. All other differences were non-significant.

Table 2 shows the nominal demographic characteristics of the subjects by group. A chi square showed no significant differences among the groups ($\chi^2(3, n = 25) = .088, \text{ns}$) for the variable race. The chi square analyses for the variable criminal history showed significant differences among the groups, $\chi^2(3, n = 25) = 14.99, p<.01$. Likewise, the chi square for the variable psychiatric history revealed significant differences among groups ($\chi^2(3, n = 25) = 32.93, p<.001$). The credibility of these variables is suspect due to the self-report nature of the data and the poor documentation and communication among agencies.
Table 1

Demographic Characteristics of Subjects by Group

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simulators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>25</td>
<td>28.64</td>
<td>7.23</td>
<td>19-46</td>
</tr>
<tr>
<td>Education</td>
<td>25</td>
<td>9.80</td>
<td>1.32</td>
<td>8-12</td>
</tr>
<tr>
<td>IQ</td>
<td>25</td>
<td>76.68</td>
<td>13.67</td>
<td>60-113*</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>25</td>
<td>25.28</td>
<td>5.62</td>
<td>19-39</td>
</tr>
<tr>
<td>Education</td>
<td>24</td>
<td>9.25</td>
<td>1.65</td>
<td>6-12</td>
</tr>
<tr>
<td>IQ</td>
<td>25</td>
<td>82.28</td>
<td>12.98</td>
<td>60-106*</td>
</tr>
<tr>
<td><strong>Malingers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>25</td>
<td>26.36</td>
<td>6.56</td>
<td>18-39</td>
</tr>
<tr>
<td>Education</td>
<td>25</td>
<td>9.92</td>
<td>2.74</td>
<td>6-16</td>
</tr>
<tr>
<td>IQ</td>
<td>25</td>
<td>73.04</td>
<td>22.16</td>
<td>40-104*</td>
</tr>
<tr>
<td><strong>Schizophrenics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>25</td>
<td>30.04</td>
<td>7.38</td>
<td>21-46</td>
</tr>
<tr>
<td>Education</td>
<td>24</td>
<td>10.75</td>
<td>2.35</td>
<td>6-16</td>
</tr>
<tr>
<td>IQ</td>
<td>25</td>
<td>85.24</td>
<td>11.24</td>
<td>69-125*</td>
</tr>
</tbody>
</table>

*P < .05.
Table 2
The Demographic Variables Race, Criminal History and Psychiatric History by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Race</th>
<th>Criminal Hx**</th>
<th>Psychiatric Hx***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B1 % Wh %</td>
<td>+% -%</td>
<td>+% -%</td>
</tr>
<tr>
<td>Simulators</td>
<td>76 24</td>
<td>48 52</td>
<td>16 84</td>
</tr>
<tr>
<td>Controls</td>
<td>68 32</td>
<td>52 48</td>
<td>28 56</td>
</tr>
<tr>
<td>Malingerers</td>
<td>64 36</td>
<td>92 4</td>
<td>72 28</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>68 32</td>
<td>60 40</td>
<td>88 12</td>
</tr>
</tbody>
</table>

Note. Percentages not summing to 100 indicate a refusal to respond or unavailable data. Crim Hx = Criminal History; Psych Hx = Psychiatric History; B1 % = Black Percent; Wh % = White Percent; +% = Positive Percent; -% = Negative Percent. **p .01. ***p .001.
The descriptive statistics for each of the four measures are presented in Tables 3 through 6, separated by group. See Tables 9 and 10 and accompanying text for a discussion of the F Scale and F-K Index data. The differences among the means of the groups on the PST Type 1 Response were examined using an analysis of variance. No significant differences were found ($F(3, 96) = 1.04, ns$). For the PST X+%, the analysis of variance ($F(3, 96) = 2.16, ns$) also revealed no significant differences among the groups.

To increase understanding of embedded hypotheses, the data in the remainder of the results section will be organized in the following manner. The hypothesis will be stated in the first paragraph of each section, followed by the relevant criteria in the second paragraph. Then a brief summary of the corroboration or non-corroboration of hypotheses will follow. Specific statistical procedures and results will be described in the succeeding paragraphs of each section.

**Hypotheses Related Specifically to the MMPI**

**Hypothesis 1:** Malingerers and Simulators will receive elevated scores on the validity indices using the cutoffs of $F \geq 15$ and $F-K \geq 7$, as suggested by previous research.
Table 3

Descriptive Statistics for the MMPI F Scale by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulators</td>
<td>25</td>
<td>26.12</td>
<td>14.05</td>
<td>5 - 53</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
<td>14.20</td>
<td>8.21</td>
<td>5 - 37</td>
</tr>
<tr>
<td>Malingers</td>
<td>25</td>
<td>26.04</td>
<td>9.24</td>
<td>8 - 42</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>16.96</td>
<td>9.74</td>
<td>2 - 33</td>
</tr>
</tbody>
</table>

Note. See Table 9 and accompanying text for statistical analysis of differences among the groups on this measure ($F (3, 96) = 8.54, p < .001$).
Table 4

Descriptive Statistics for the MMPI F-K Index by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulators</td>
<td>25</td>
<td>12.20</td>
<td>17.66</td>
<td>-18 - +43</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
<td>1.44</td>
<td>10.76</td>
<td>-14 - +29</td>
</tr>
<tr>
<td>Maligners</td>
<td>25</td>
<td>15.96</td>
<td>11.66</td>
<td>-8 - +35</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>3.36</td>
<td>13.89</td>
<td>-20 - +29</td>
</tr>
</tbody>
</table>

Note. See Table 10 and accompanying text for statistical analysis of differences among the groups on this measure ($F(3, 96) = 6.40, p < .001$).
Table 5

Descriptive Statistics for the PST Type 1 Response by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulators</td>
<td>25</td>
<td>17.44</td>
<td>7.21</td>
<td>9 - 31</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
<td>17.68</td>
<td>8.47</td>
<td>4 - 44</td>
</tr>
<tr>
<td>Malingerers</td>
<td>25</td>
<td>20.08</td>
<td>8.52</td>
<td>3 - 39</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>16.28</td>
<td>6.93</td>
<td>4 - 35</td>
</tr>
</tbody>
</table>

Note. No significant differences were found among groups, $F (3, 96) = 1.04$, ns.
Table 6

Descriptive Statistics for the PST X+% by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulators</td>
<td>25</td>
<td>54.88</td>
<td>12.38</td>
<td>38 - 76</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
<td>61.60</td>
<td>11.11</td>
<td>40 - 96</td>
</tr>
<tr>
<td>Malingers</td>
<td>25</td>
<td>61.84</td>
<td>10.98</td>
<td>36 - 84</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>59.60</td>
<td>9.18</td>
<td>36 - 76</td>
</tr>
</tbody>
</table>

Note. No significant differences were found among groups, $F(3, 96) = 2.16$, ns.
Cutoff scores must classify greater than 50% of the subjects in that group correctly to be considered significant. To test this hypothesis, tables were made of frequencies of scores above and below cuts. The hit rates were then analyzed through a unidirectional test of hypothesis using the chi square statistic. The object was to test for significance of differences between observed and expected rates, where expected rates were based on a 50%/50% split. These expected values were chosen to test the hypothesis that the cutoff scores would not do better than 50% accurate prediction. This rationale was employed for all the following tests of hypotheses which used the chi square.

This one-tailed hypothesis was fully corroborated for the Malingerer group, but was corroborated for the F scale only with the Simulator group. Fewer than 50% of Simulation subjects exceeded the cut score for the MMPI F-K index.

In Table 7 are the hit rates for Simulators using the F scale with the above cutoffs. The significance of the rates was determined using the chi square statistic, $X^2 \ (1, \ n = 25) = 9.0, \ p < .001$. In this case, 20 out of 25 Simulators were correctly identified by this scale.
Table 7
Hit Rates by Group Using the MMPI F Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>Above Cut</th>
<th></th>
<th>Below Cut</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Simulators</td>
<td>20</td>
<td>80</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Controls</td>
<td>11</td>
<td>44</td>
<td>14</td>
<td>56</td>
</tr>
<tr>
<td>Malingers</td>
<td>21</td>
<td>84</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>16</td>
<td>64</td>
<td>9</td>
<td>36</td>
</tr>
</tbody>
</table>
The hit rate for Simulators using the F-K index with the above cutoffs is seen in Table 8. Chi square was used to test the significance of these rates, however, no significance was found, $\chi^2 (1, n = 25) = .004, \text{ns}$. Here, 13 of 25 Simulators were correctly classified.

The hit rate on the F scale for Malingerers is presented in Table 7. A chi square was used to determine significance, $\chi^2 (1, n = 25) = 11.56, p < .001$. Using this measure, 21 out of 25 Malingerers were discriminated.

Table 8 shows the Malingerers' hit rates using the F-K index. Significance was determined using a chi square statistic, $\chi^2 (1, n = 25) = 6.76, p < .01$, with 19 out of 25 subjects being correctly classified.

**Hypothesis 2:** The scores of the Standard Instruction group on these indices will be below the cutoff scores of $F \geq 15$ and $F-K \geq 7$.

Testing the hypothesis that the cutoff scores would not do better than 50% accurate prediction, a one-tailed test was utilized.

This hypothesis was partially corroborated in that for the F-K index a significant number of subjects received scores below the cut, but for the F scale, no significant difference was found between observed and expected scores.
Table 8

Hit Rates by Group Using the MMPI F-K Index

<table>
<thead>
<tr>
<th>Group</th>
<th>Above Cut</th>
<th></th>
<th>Below Cut</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Simulators</td>
<td>13</td>
<td>52</td>
<td>12</td>
<td>48</td>
</tr>
<tr>
<td>Controls</td>
<td>7</td>
<td>28</td>
<td>18</td>
<td>72</td>
</tr>
<tr>
<td>Malingerers</td>
<td>19</td>
<td>76</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>13</td>
<td>52</td>
<td>12</td>
<td>48</td>
</tr>
</tbody>
</table>
Table 7 shows the hit rates for the Standard Instruction group using the F Scale. A chi square found no significance, $\chi^2 (1, n = 25) = 0.36, \text{ns}$. Here, 14 out of 25 subjects were correctly classified.

Table 8 shows the hit rate data for the Standard Instruction group using the F-K index. Significant differences between expected and observed frequencies were found using the chi square statistic, $\chi^2 (1, n = 25) = 4.84, p < .05$. In this case, 18 of 25 subjects were correctly classified.

Hypothesis 3: The scores for the Schizophrenic group will be elevated on the F scale due to their active psychosis; however, their F-K index will be lower than that of the Malingerer and Simulator groups. Thus, the F scale will discriminate the Standard Instruction group (lower scores) from the other three groups. The F-K index will then discriminate the Schizophrenic group (lower scores) from the Malingerer and Simulator groups.

Partial corroboration was obtained for this hypothesis. Schizophrenic subjects did not receive elevated F scale scores nor reduced F-K index scores at a frequency greater than 50%, disconforming this portion of the hypothesis. The F-K index for schizophrenics was lower than that of the Malingerer group but not the Simulator group,
partially corroborating this hypothesis. The F scale discriminated Standard Instruction subjects from Malingers and Simulator subjects only, not from all three remaining groups as the hypothesis stated. It did not discriminate Standard Instruction subjects from Schizophrenics. The F-K index did discriminate the Schizophrenics from the Malingerers, but not from the Simulators, only partially corroborating this portion of the hypothesis.

To test the null hypothesis that the cutoff scores would not achieve higher than 50% accuracy, a one-tailed test was performed.

A chi square was used to test for significance of classification frequencies for both MMPI scales with the Schizophrenic group. Table 7 shows the hit rates for the F scale, with a chi square showing no significant differences between observed and expected frequencies, $X^2 (1, n = 25) = 1.96, \text{ns}$. In Table 8 are the hit rates for the Schizophrenic group using the F-K index, yielding a non-significant chi square, $X^2 (1, n = 25) = 0.04, \text{ns}$.

Two one-way analyses of variance were performed to determine whether significant differences existed among all four groups for the F scale and then for the F-K index.

Table 9 shows the source table for the analysis of variance computed to determine whether significant differences exist among groups using the F scale. Since signifi-
Table 9

Source Table for Analysis of Variance Over Four Groups on the F Scale

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>2851.55</td>
<td>3</td>
<td>950.52</td>
<td>8.20*</td>
</tr>
<tr>
<td>Error</td>
<td>11121.68</td>
<td>96</td>
<td>115.85</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01. Eta^2 = .20.
cance was found, $F(3, 96) = 8.20, \ p < .01$, a Tukey post hoc means comparison was used to determine the source of differences. The means on the $F$ scale were Simulators 26.12; Standard Instruction, 14.20; Malingerers, 26.04; and Schizophrenics 16.96. The scores for the Standard Instruction and Schizophrenic subjects were significantly less than those for the Malingerers and Simulators. The Standard Instruction group's $F$ scale scores were not significantly lower than the Schizophrenic subjects. Thus, the $F$ scale will discriminate the Standard Instruction subjects from the Malingerers and Simulators but not from the Schizophrenics.

Table 10 presents the source table for the analysis of variance used to determine whether there were significant differences among the means of the four groups using the F-K indices. After determining significant differences, $F(3, 96) = 6.15, \ p < .01$, a Tukey post hoc means comparison was implemented to find the source of the difference. Means for the four groups were Simulators 12.20, Standard Instruction 1.44, Malingerers 15.96, and Schizophrenics 3.36. Here, the Standard Instruction scores were significantly lower than the Simulators and Malingerers, and the scores of the Schizophrenic subjects were less than the Malingerers.
Table 10

Source Table for Analysis of Variance Over Four Groups
Using the F-K Index

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>3633.36</td>
<td>3</td>
<td>1211.12</td>
<td>6.15*</td>
</tr>
<tr>
<td>Error</td>
<td>18913.52</td>
<td>96</td>
<td>197.02</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01. Eta $^2 = .16.$
Hypotheses Specifically Related to the PST

**Hypothesis 1:** The Schizophrenic group will select poor form responses (Types 3 and 4) significantly more often than the other groups.

To determine the significance of differences between the Schizophrenic group and the other three groups on this variable, an orthogonal comparison was computed on these means, Schizophrenics (M = 40.40) and other groups (M = 40.56). No significant difference was found, F (1, 96) = 0.00, ns, disconfirming this hypothesis.

**Hypothesis 2:** The Malingering and Simulator groups will select good form, bizarre wording responses (Type 1) significantly more often than the other groups.

To determine the significance of differences between the combined Malingering and Simulator means (M = 17.86) and the combined Standard Instruction and Schizophrenic means (M = 16.98), an orthogonal comparison was performed. No significant differences were found, F (1, 96) = 1.24, ns. Thus, Type 1 responses alone do not differ significantly between the two sets of groups, disconfirming this hypothesis.
Hypothesis 3: The Standard Instruction prisoner group will select good form, neutral wording responses (Type 2) significantly more often than the other groups.

To test for significance of differences between the mean of the Standard Instruction group ($M = 43.92$) and the other three groups combined ($M = 40.93$), an orthogonal comparison was computed. No significant difference was found, $F(1, 96) = 3.52$, ns, disconfirming this hypothesis. There was no significant difference between the Standard Instruction group and the other groups in Type 2 responses.

Hypotheses Related to the Combined Use of the MMPI and the PST.

Hypothesis 1: The use of both instruments in conjunction will yield the best rate of correct classification when analyzed through Discriminant Function Analysis (DFA).

This hypothesis was corroborated for both the two group (Malingers and Schizophrenics) and four group analyses.

Using all four measures and all four groups, a stepwise DFA was performed. The discrimination criterion used was the Minresid method, which minimizes the residual variance unexplained by the analysis. Only the first
Discriminant Function was significant, Wilks' Lambda (12) = 0.67, $\chi^2 = 37.609$, $p < .001$. Table 11 shows the Standardized Discriminant Function Coefficients associated with this equation, indicating F was the best discriminator and PST X+%, PST Type 1 and F-K were entered after F, in that order. The Classification Table by group is shown in Table 12. The percent of grouped cases correctly classified was 51%, as compared to a chance classification rate of 25%.

A second stepwise DFA was performed on four groups but with only the two MMPI indices, F and F-K. Again, Minresid was the criterion used. Only the first function was significant, Wilks' Lambda (6) = 0.74, $\chi^2 = 28.685$, $p < .001$. Table 13 presents the Standardized Discriminant Function Coefficients associated with this equation, indicating that the F scale was the better discriminator of the two scales. The Classification Results by group is shown in Table 14. The percent of grouped cases correctly classified was 48%, compared to a chance classification rate of 25%.

A comparison of these two classification rates shows the use of all four measures to be superior to the use of the MMPI indices alone, confirming the hypothesis with a four group situation.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Function 1 Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Scale</td>
<td>1.14187***</td>
</tr>
<tr>
<td>F-K Index</td>
<td>-0.38822***</td>
</tr>
<tr>
<td>PST Type 1</td>
<td>0.59684***</td>
</tr>
<tr>
<td>PST X+%</td>
<td>0.79750***</td>
</tr>
</tbody>
</table>

*** $p < .001$. 
Table 12

Discriminant Function Analysis Classification Table for Four Groups and Four Measures

<table>
<thead>
<tr>
<th>Actual group</th>
<th>Predicated group membership</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Sim</td>
<td>Control</td>
<td>Mal</td>
<td>Schiz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Simulators</td>
<td>25</td>
<td>13</td>
<td>52</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
<td>3</td>
<td>12</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>Malingerers</td>
<td>25</td>
<td>6</td>
<td>24</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>4</td>
<td>16</td>
<td>8</td>
<td>32</td>
</tr>
</tbody>
</table>

Note. Sim = Simulators; Mal = Malingerers; Schiz = Schizophrenics. Percent of "grouped" cases correctly classified: 51%.
Table 13

Standardized Discriminant Function Coefficients for Four Groups on the MMPI F Scale and F-K Index

<table>
<thead>
<tr>
<th>Measure</th>
<th>Function 1 Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Scale</td>
<td>1.36119***</td>
</tr>
<tr>
<td>F-K Index</td>
<td>-0.41806***</td>
</tr>
</tbody>
</table>

*** $p < .001$. 
### Table 14

**Discriminant Function Analysis Classification Table**

*for Four Groups on the MMPI F Scale and F-K Index*

<table>
<thead>
<tr>
<th>Actual group</th>
<th>Predicted group membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Simulators</td>
<td>25</td>
</tr>
<tr>
<td>Controls</td>
<td>25</td>
</tr>
<tr>
<td>Maligners</td>
<td>25</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
</tr>
</tbody>
</table>

Note. Sim = Simulators; Mal = Maligners; Scz = Schizophrenics. Percent of "grouped" cases correctly classified: 48%. 
However, in a practical setting, these measures would not be used to discriminate between all four groups, but rather the power of discrimination between Malingerers and Schizophrenics would be at question. To address this question, a stepwise DFA was performed on all measures using only the Malingerer and Schizophrenic groups. Minresid was the discriminant criterion used. Only the first Discriminant Function was significant, Wilks' Lambda (2) = 0.78, $\chi^2 = 11.59$, $p < .01$. The Standardized Discriminant Function Coefficients associated with this equation appear in Table 15. The two measures which were significant discriminators were F-K and PST Type 1 responses, in that order. Table 16 shows the Classification Table for the two groups and four measures. By chance alone, 50% of the cases would be grouped correctly, with a correct classification rate with these measures of 66%.

To determine a cut score which would maximally discriminate Malingerers and Schizophrenics on the F scale, a fourth DFA was performed. Minresid was the discrimination criterion. The first function was significant, Wilks' Lambda (1) = 0.81, $\chi^2 = 10.146$, $p < .001$. Table 17 shows the Classification results by group. The optimal cutoff score to discriminate Malingerers (greater than or equal to the cut) from Schizophrenics
Table 15

Standardized Discriminant Function Coefficients for Malingerers and Schizophrenics Using Four Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Function 1 Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-K Index</td>
<td>0.89411**</td>
</tr>
<tr>
<td>PST Type 1</td>
<td>0.32273**</td>
</tr>
<tr>
<td>F Scale</td>
<td>0.00000</td>
</tr>
<tr>
<td>PST X+%</td>
<td>0.00000</td>
</tr>
</tbody>
</table>

** p < .01.
Table 16

Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using Four Measures

<table>
<thead>
<tr>
<th>Actual group</th>
<th>n</th>
<th>Predicted group membership</th>
<th>Malignerer</th>
<th>Schizophrenic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Malingerers</td>
<td>25</td>
<td>17</td>
<td>68</td>
<td>8</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>9</td>
<td>36</td>
<td>16</td>
</tr>
</tbody>
</table>

Note. Percent of "grouped" cases correctly classified: 66%.
Table 17

Discriminant Function Analysis Classification Table
for Malingerers and Schizophrenics Using the MMPI F Scale

<table>
<thead>
<tr>
<th>Actual group</th>
<th>n</th>
<th>Predicted group membership</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maligner</td>
<td>Schizophene</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Malingerers</td>
<td>25</td>
<td>18</td>
<td>72</td>
<td>7</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>8</td>
<td>32</td>
<td>17</td>
</tr>
</tbody>
</table>

Note. Percent of "grouped" cases correctly classified: 70%.
(less than the cut) in this sample on the MMPI F scale was 21.50. Using this cut, 70% of grouped cases were correctly classified, compared to a chance rate of 50%.

To determine whether the addition of demographic variables could contribute to these results, a fifth stepwise DFA was computed. All four measures were included with the additional variables of age, IQ and Race on Malingerers and Schizophrenics only. Minresid was the discriminant criterion used. The first discriminant function was significant, Wilks' Lambda (3) = 0.750, \( \chi^2 = 13.364, p < .01 \). The Standard Discriminant Function Coefficients associated with this equation appear in Table 18, and indicate that F-K was the best discriminator in this function, with IQ and PST X+% entered as well, in that order. The Classification Table by group is presented in Table 19. The percent of grouped cases correctly classified was 72% with a chance hit rate of 50%.

Because acquiring the data for the IQ and PST X+% variables adds a significant amount of testing time, one final DFA was performed to determine the increase in hit rate by adding these additional measures. In the analysis, only F-K was used as a measure with the Malingerer and Schizophrenic groups. The criterion for
Table 18

Standardized Discriminant Function Coefficients for Malingerers and Schizophrenics Using Four Measures with Age, IQ and Race

<table>
<thead>
<tr>
<th>Measure</th>
<th>Function 1 Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-K Index</td>
<td>0.67834 **</td>
</tr>
<tr>
<td>IQ</td>
<td>-0.53044 **</td>
</tr>
<tr>
<td>PST X+%</td>
<td>0.38055 **</td>
</tr>
<tr>
<td>F Scale</td>
<td>0.00000</td>
</tr>
<tr>
<td>PST Type 1</td>
<td>0.00000</td>
</tr>
<tr>
<td>Age</td>
<td>0.00000</td>
</tr>
<tr>
<td>Race</td>
<td>0.00000</td>
</tr>
</tbody>
</table>

** p < .01.
Table 19

**Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using Four Measures with Age, IQ and Race**

<table>
<thead>
<tr>
<th>Actual group</th>
<th>n</th>
<th>Predicted group membership</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maligner</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Malingerers</td>
<td>25</td>
<td>18</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>7</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

Note. Percent of "grouped" cases correctly classified: 72%.
discrimination was the Minresid method. The function was significant, Wilks' Lambda (2) = 0.781, $\chi^2 = 11.594, p < .001$. Table 20 shows the Classification Table by group. The hit rate, using F-K only in a DFA is 70% with a chance classification rate of 50%. Comparing this to the hit rate obtained in Table 19 using F-K, IQ and PST X+%, it is apparent that the addition of the two measures increases the rate of correct classification by only 2%. Here, the optimal cutoff score was 10.

Reviewing the hit rates obtained by use of cut rates from the literature for two groups which are summarized in Table 21, it is obvious that F-K was the only measure of significance. Neither of the PST indices were significant in terms of frequencies above the cuts, and although the F scale $\geq 15$ was a successful discriminator of opposite scoring groups, it was not appropriate here since the literature indicates that both Malingers and Schizophrenics receive F scores elevated above 15. Using the cut scores developed through DFA on this sample, the use of either F or F-K resulted in a relatively high correct classification rate. However, a DFA equation, combining the use of the variables F-K, IQ and PST X+%, yielded the highest hit rate of 72%, confirming the hypothesis for a two group analysis.
Table 20

Discriminant Function Analysis Classification Table for Malingerers and Schizophrenics Using the F-K Index Only

<table>
<thead>
<tr>
<th>Actual group</th>
<th>n</th>
<th>Predicted group membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Malingers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>#</td>
</tr>
<tr>
<td>Malingers</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Schizophrenics</td>
<td>25</td>
<td>8</td>
</tr>
</tbody>
</table>

Note. Percent of "grouped" cases correctly classified: 70%.
Table 21
Summary of Correct Classification Rates of Malingers and Schizophrenics by Measure and Statistic

<table>
<thead>
<tr>
<th>Measure</th>
<th>Statistic</th>
<th>Hit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Scale ≥ 15</td>
<td>Chi Square</td>
<td>NA</td>
</tr>
<tr>
<td>F-K Index ≥ 7</td>
<td>Chi Square</td>
<td>62%</td>
</tr>
<tr>
<td>PST Type 1</td>
<td>ANOVA</td>
<td>NS</td>
</tr>
<tr>
<td>PST X+%</td>
<td>ANOVA</td>
<td>NS</td>
</tr>
<tr>
<td>F-K Index/PST Type 1</td>
<td>DFA</td>
<td>66%</td>
</tr>
<tr>
<td>F-K Index/IQ/PST X+%</td>
<td>DFA</td>
<td>72%</td>
</tr>
<tr>
<td>F-K Index ≥ 10</td>
<td>DFA</td>
<td>70%</td>
</tr>
<tr>
<td>F Scale ≥ 22</td>
<td>DFA</td>
<td>70%</td>
</tr>
</tbody>
</table>

Note. NA = Not Applicable; NS = Not Significant; DFA = Discriminant Function Analysis.
Additional Analyses

To determine whether differences between groups could be attributed to institutional differences, the means by institution were collapsed over the F scale and the F-K index (Prison F scale $M = 20.16$, Forensic F scale $M = 21.50$, Prison F-K index $M = 6.82$, Forensic F-K index $M = 9.66$). No significant differences were found between institutional settings for the F scale ($t (98) = -0.57$, ns) or the F-K index ($t (98) = -1.01$, ns).
Discussion

The overall purpose of the study was to refine methods of detecting malingering. Specific objectives were to (1) replicate the use of the MMPI F scale ($F \geq 15$) and F-K index ($F-K \geq 7$) with a true clinical sample of Malingerers; (2) determine concurrent validity for the PST scales with the MMPI scales; (3) assess the ability of a weighted combination of measures to discriminate among the groups and to show which of the independent variables account for most of the variance; and (4) compare these results to those of the analog and control groups to assess the use of analog research to represent Malingerers.

The results of this study showed that the MMPI is the best overall method of detecting malingering. The Malingerer group received scores elevated beyond the published cuts of the F scale and the F-K index on the MMPI, as hypothesized. Optimal cut scores were determined based on this sample. Concurrent validity was not established for the PST with the MMPI, disconfirming this hypothesis. The ability of a weighted combination of measures in a discriminant function equation to discriminate Malingerers from Schizophrenics was found to be superior to any scale used singly, and the independent
variables accounting for most of the variance were MMPI F-K index, IQ and PST X+%, in that order. A comparison of the performance of Malingerers on the various scales with that of the analog group showed Malingerers and Simulators are similar but not identical groups.

**MMPI Validation with Malingerers**

The specific purpose here was to replicate the use of the MMPI F and F-K indices with a true clinical sample of forensic malingerers.

As was predicted by previous research on Simulators (e.g., Anthony, 1971), significant numbers of Malingerers received elevated F ≥ 15 and F-K ≥ 7 scores. Optimal cut scores developed for this sample of Malingerers and Schizophrenics were F ≥ 22 and F-K ≥ 10. Use of these cuts resulted in the highest classification rates for single measures as opposed to Discriminant Function Analysis (DFA). For the F-K index, the optimal cut score was only slightly higher than that reported in the literature for analog groups. The F scale cut of 22, which is much greater than that seen in the analog literature, reflects the fact that this cut was developed on diagnosed Malingerers and Schizophrenics, both of whom typically receive F scales elevated above the general population. Past cuts were based on Fake Bad/Standard Instruction or Fake Good
comparisons. Assuming cross-validation supports this cut score, it is of practical importance in a forensic setting in helping to distinguish Malingerers from Schizophrenics. Validation of the PST

The second specific objective was to establish concurrent validity for the PST scales with the MMPI scales. Despite the work of Pettigrew et al. (1983), where student simulators chose more "good form, but bizarre wording" responses (Type 1) than normals or psychotics, in this study the PST did not discriminate any of the groups meaningfully. Thus, although this measure appeared to have promise with early simulation research efforts, its use with a true clinical population was disappointing.

A possible reason for this finding is thought to be the overall intelligence level of subjects in the current groups. Whereas Pettigrew et al. (1983) used college students assumed to be of at least average intelligence, the mean IQ for the entire sample in this study was 79.31 with a range of 73.04 (Malingerers) to 85.24 (Schizophrenics) which is well below average. To malinger psychosis successfully on the PST, one must assess all four of the responses and select the one which is most bizarre. Here, a plan or set must be developed. Thus, the purpose of the test must be deciphered, allowing formulation of a 'malingering set'. 
This may be difficult for subjects in the Borderline intellectual range.

This task is complicated by ambiguous items. In some cases, there were two responses which could be rated as bizarre as defined in the introduction of this study. For example, choices were required between "animals that lust for blood" and "breasts of a human female" (to card X) or "a bowtie for a man in a coffin" and "a brassiere for a woman or girl" (to card II). Research has shown that malingering responses are often sexual in nature (e.g., Seamons et al., 1981), making all of these responses somewhat representative of malingering. Choices should be more clearly different from each other to allow easier distinction of the most bizarre response.

It also appeared that many of the words in the items were beyond the understanding of these subjects, for instance, "a cocoon", "anatomy" or "an ostrich". Responses should be selected from the range of experience of the subject and should be worded to maximize understanding.

Finally, it often appeared the subject did not respond in any reliable manner until the second card. It is thought that the subject was trying to develop
a set for responding during the first five responses.
The use of a set of five unscored, 'warm-up' items, where the choice was relatively obvious, would allow subjects time to form a malingering set, without contaminating the body of results with random responses.

Thus, although the ability of the PST to contribute to the discrimination of Malingers was poor, analog research suggests this is a logical and promising approach which deserves further research. If this instrument could be modified as suggested, and validated to apply to subjects in this intelligence range, it would result in substantial time savings for forensic psychologists as compared to the MMPI scales now used.

**Discriminant Function Analysis of the Measures and Variance Accounted for by the Variables**

The third purpose was to assess the ability of a weighted combination of measures to discriminate among groups, and to show which of the independent variables account for most of the variance.

Following the successful use of DFA research by Power et al. (1974) and Heaton et al. (1978), the DFAs used in this study produced the best rates of classification in both two and four group situations.

Despite the lack of discriminating power of the
PST scales used singly, their use with IQ and the F-K index in a DFA contributed additional discriminatory power. However, when the rate of correct classification using all three measures was compared to the rate of using only the F-K index ($\geq 10$), classification was improved by only 2%. This calls to question the practical utility of these additions. When one considers the administration and scoring time for these instruments, the relatively small addition of power is discouraging. In a practical setting, they would not be cost effective at the present stage of development.

Considered from a theoretical perspective, however, several recommendations can be made about future research in this area. A more sophisticated methodological approach will ultimately yield the optimal rate of classification. As would be expected, the DFA is superior to the single cut score approach in terms of rate of correct classification. This suggests DFA equations will yield higher efficiency when optimal measures are found. Second, measures which are not good discriminators singly, can increase the classification rate through a DFA. Third, the use of measures of different domains will yield the best rate of correct classification.
Related to the early observations of Jones and Llewellyn (1917) that malingerers overact their parts, it appears that the typical set for a forensic malingerer was to feign mental retardation as well as schizophrenia; that is, to do poorly on all tests administered. Table 1 revealed the wide variability of IQ values obtained from Malingering subjects. This finding is highly suspect in that behavioral observations of verbal ability and ward behavior were often vastly discrepant from their performance on the intellectual measures for many of the Malingering subjects. For example, a patient with an IQ of 40 held the title of Dominoes champion of the ward of 25 patients and five Correctional Security Officers.

The idea of divergent domains is supported by the work of Heaton et al. (1978). They concluded that although overall level of impairment of simulators of head injury was similar to that of true head injury patients, their patterns of strengths and weaknesses were different, and the simulators also showed more severe personality disturbance on the MMPI. Subjects assume that a poor performance across all scales and measures is most reflective of mental disability. Thus, the use of a variety of instruments from different domains would add new data to a DFA and increase the total variance accounted for.
This line of reasoning suggests the use of well objectified tests which are quick to administer and are quickly and easily scored. This reduces the amount of psychologist time involved in data collection, and makes the defense of their use in court simpler. Further, these instruments should be from widely divergent domains since Malingerers appear to dissemble across all instruments. Use of a variety of measures such as a personality test, an intelligence test, a memory test and, perhaps, some simple neuropsychological subtests would provide ample opportunity for dissembling, and would yield enough data for a strong statement to be made about the plausibility of such a pattern of scores.

Thus, a new direction in the course of the detection of malingering is suggested. Rather than focusing on the development of one critical Malingering scale, the implementation of a variety of simple but valid measures analyzed for a detection of unusual patterns of strengths and weaknesses may well provide the most reliable and defensible detection technique.

A Comparison of Prison Simulators with Forensic Malingerers

These results can be compared to those of the analog and control groups to assess the propriety of analog research to represent malingerers.
All past MMPI Malingering research with the exception of Grow et al. (1980), was conducted in an analog fashion using the instructional sets variable. Grow et al. (1980) validated their analog data obtained from students by comparison to MMPI protocols in their files which were designated as malingered, post hoc. Most researchers in the field are making the assumption that students or clinical groups asked to fake bad will produce protocols equivalent to those of true Malingers.

The findings of this study show Simulators and Malingers do respond in a similar way but the two groups are not interchangable. At times, it was merely that the effect size was significant but less for Simulators, for instance, in the case of the hit rate using the MMPI F ≥ 15. However, in the case of the MMPI F-K ≥ 7, no significance was obtained for Simulators and significance was obtained for Malingers.

This may be due, in part, to the factors discussed in the Feldman and Graley (1954) and Grow et al. (1980) studies which suggested Simulators and true Malingers have different motivational bases. In view of the fact that the diagnosis of mental illness may determine life or death for some Malingers, they are certainly more highly motivated to appear mentally ill than a student.
earning extra credit for a course or a prisoner asked to participate in a study, gratis.

How this difference in motivation will manifest itself in the protocols may vary by population or even by setting. Gendreau et al. (1973) suggest certain institutional settings have intrinsic institutional attitudes or 'sets' which can have profound effects on protocols received. Thus, the cut scores which are applicable to students would be different from those best applied to inmates at a prison which may differ from those most applicable to forensic patients.

For example, in this sample, looking at the optimal institutional cut scores for the F scale, the prison subjects at 20 and the forensic subjects at 22 were not significantly different from one another, suggesting approximate equivalence and interchangability of cut scores between these two settings. These cuts are, however, considerably higher than that obtained by Grow et al. (1980) whose college student sample produced an optimal cut of 15, suggesting some support for the motivational differences idea. The cuts are, however, substantially lower than that obtained by Gendreau et al. (1973), who worked with prisoners and obtained an optimal
cut of 34. However, there is a probable confound in the Gendreau et al. (1973) study. The low ratio of sample size to dependent measures makes their findings questionable. Clearly, more research is indicated before strong statements can be made on this issue.

Using forensic Malingers and Schizophrenics diagnosed by DSM III criteria, the optimal cut score for the MMPI F-K index was 10, which was not significantly different from that of the incarcerated groups ($\geq 8$). This cut score is only slightly greater than the cuts of Grow et al. (1980), who obtained an optimal cut of 7, and others who used college student samples, and it agrees with Hunt (1949) who obtained an optimal cut of 11 also working with prison samples. However, it is substantially lower than that obtained by Gendreau et al. (1973), working with prison samples and instructional sets ($F-K \geq 24$). The current results and those obtained by Hunt (1949) and Grow et al. (1980) suggest some equivalence between institutions despite the Simulator/true Maligner difference. Regarding the Gendreau et al. (1973) difference, the high dependent variable to sample size ratio in this study make the findings suspect.

These comparisons suggest the F scale is more vulnerable to institutional sets. This would indicate the
F-K index is a more appropriate measure to use in comparing two different types of institutions. Clearly, more research is required to understand these differences. It does appear that F scales can differ with different populations, particularly prison samples, and that cut scores to be implemented with these groups should be developed on them. However, it should be considered that the results obtained from this particular correctional facility may be peculiar to it. To determine the potential contribution of the particular setting, data could be gathered and compared from a variety of similar settings. At this time, there is no way to assess the effect, if any, of this variable.

Potentially compromising these analog comparisons is the fact that the prison MMPI data was collected using a shortened form of the test, the MMPI 168 (Overall & Gomez-Mont, 1974). Since its development, many studies have been conducted on the 168 to assess its validity with various populations. In 1980, Stevens and Reilley published a literature review of the 168, concluding that the scale shows promise, particularly in regard to discrimination of valid from invalid profiles, and with incarcerated populations. Walls et al. (1977), who worked with incarcerated males, reported 86% agreement on
validity indices between the 168 and the full MMPI. The Pearson correlations were .90 for the F scale and .83 for the K scale. We can conclude from this that differences between the prison and forensic unit groups may be due, in part, to the differences in forms. Thus, conclusions related to these comparisons should be drawn with caution.

Using prison populations in research brings with it special difficulties. Collins and Schlenger (1983) report that inmates classified as Antisocial Personality Disorder are overrepresented in prison populations. Gendreau et al. (1973) observe many inmates have psychopathic traits which make them respond to a personality test quite differently than other groups. This patient group is characterized, in part, by a failure to accept social norms, a failure to honor obligations, manipulating others for personal profit and chronic disregard for the rights of others (American Psychiatric Association, 1980). In general, it is expected that individuals with psychopathic tendencies will be motivated to perform activities in a reliable way only when they expect to gain something from the transaction.

In this study, the gains were the same whether the subjects actually conformed to the instructional set or took the tests in a random or idiosyncratic manner. This
source of confounding suggests further research where prisoners are told they will receive some incentive only if they "fool the psychologist into thinking they are crazy". With the comparison of this instructional set to a typical "fake bad" set, a better sense of the actual adherence to instructional set by inmates can be obtained.

In this study, significant differences in performance between Malingerers and Simulators involved the F-K index, but on comparisons on the F scale, they performed similarly. This suggests that the K scale, which is seen as a measure of psychological defensiveness similar to social desirability, is discriminating between the two groups relative to the F scale. It appears that Simulators are willing to endorse certain deviant items, but still want to maintain a level of socially appropriate attitudes or behaviors.

A possible explanation for this comes from Gendreau et al. (1973), who suggest inmates with psychopathic tendencies may make responses to personality tests differently from college students because they may suspect their test results will affect their status and respond in a socially desirable way. Thus, the population from the correctional center may have disbelieved the assurance that their results would not affect their status and responded in a
manner which would not jeopardize approaching hearings for parole, etc.

**General Issues**

Gynther, Lachar and Dahlstrom (1978) suggest that the racial composition of a sample can affect the interpretation of MMPI results. Most previous malingering studies using the MMPI have not addressed this potential source of variance and this has been cause to question their findings. In this study, no effect was found for race. That is, the race of the subjects did not account for their group placement in any meaningful way.

It is acknowledged that the cut scores and classification rates contained in this study have not been cross-validated and, thus, the figures are potentially falsely inflated. The sample size restricted the hold out sample technique of cross-validation. Since research in this area is in its infancy, cut scores and classification rates are reported to advance research efforts and are not proposed for practical application at this time.

Viewing this study in perspective with existing research in this area, it is apparent that the optimal hit rates obtained currently (70-72%) are lower than those obtained by other studies (Anthony, 1971, 81%; Grow et al., 1980, 81%; Hunt, 1949, 88%). Grow et al. (1980) suggest that in a clinical comparison, the amount
of variance that is attributable to faking is less than in an analog comparison, and this could account for the forensic hit rates. However, the prison hit rates which are analog in nature were comparable to the forensic hit rates. It is thought that this may be a peculiarity to this particular institutional setting and possibly the use of the MMPI 168. However, this cannot be determined from these data. A study comparing students, prisoners and forensic patients from more than one setting may clarify this issue. Further, a comparison of full MMPIs to 168 data from these samples would add greater clarification.

Comparisons of students or other clinical groups with prisoners must be made, keeping in mind the probability of a higher baseline of general psychopathology in prison groups (Salcedo, 1983; Collins & Schlenger, 1983). How this will affect their scores relative to other analog groups is undetermined at this time, and in need of exploration. However, it is probably true that many forensic malingerers have some actual level of true psychopathology but to avoid prosecution, exaggerate their symptoms to such a degree that they are classified as malingerers. This makes classification between these two groups more difficult as diagnostic lines blur. The current study is merely the beginning of a line of research aimed at understanding
the forensic malingerer, thus allowing discrimination from other patient groups.

In any research designed to address practical issues, the results must be viewed in perspective with the cost of false positives and false negatives. In the case of the detection of malingering in a forensic unit, designating a patient as a malingerer when, indeed, he or she is actually psychotic deprives him or her of their right to treatment. On the other hand, to diagnose a patient psychotic when, in fact, they are feigning their symptoms to avoid being held responsible for their acts, defeats the criminal justice system and inflates the census at forensic hospitals where daily patient costs to the state are high.

Further complicating this issue is the blurring of diagnostic lines, where the patient may actually have some degree of pathology but be exaggerating, as well. The determination may ultimately become a matter of degree rather than a dichotomous distinction. These decisions are weighty ones which must be defensible in court. Issues such as these are only beginning to be examined in any systematic way and much research remains to be done. The difficulty of obtaining subjects in true malingering studies makes this area less than optimal for scientists, and the reluctance of state government to support and encourage such research suggests the progress in the area
will be slow. However, many questions remain to be answered before forensic psychologists are in a position to confidently make their diagnostic decisions regarding the authenticity of claims of psychosis.
References


New York: Wiley.


Exner, J.E., Armbruster, G.L., & Leura, A.V. (1975). Temporal consistency among non-patients over a 60 day interval. (Workshops Study No. 218, Rorschach Workshops, Rayville, New York.)


Exner, J.E., & Bryant, E. (1974). A study of temporal consistency over a seven day period. (Workshops Study No. 205, Rorschach Workshops, Rayville, New York.)

Exner, J.E., & Leura, A.V. (1976). Variations in the ranking of Rorschach responses as a function of situational set. (Workshops Study No. 221, Rorschach Workshops, Rayville, New York.)


Exner, J.E., & Wiley, F.R. (1975). *Attempts at simulation of schizophrenic-like protocols by psychology graduate students*. (Rorschach Workshops Study No. 211, Rorschach Workshops, Rayville, N.Y.)


Exner, J.E., Wylie, J.R., & Armbruster, G.L. (1976). *A follow up of patients in long term treatment after the first six months*. (Workshops Study No. 223, Rorschach Workshops, Rayville, N.Y.)

Exner, J.E., Zalis, T., Schuyler, W., Schumacher, J., & Kuhn, B. (1976). *Re-evaluation of newly admitted schizophrenic patients after a ten day period*. (Workshops Study No. 228, Rorschach Workshops, Rayville, N.Y.)


Leura, A.V., Wylie, J.R., & Exner, J.E. (1976). *Reexamination of prospective patients who have been wait-listed during a 30 day period.* (Workshops Study No. 231, Rorschach Workshops, Rayville, New York.)


APPENDIX A

DSM III Criteria
Criteria for Diagnosis of Schizophrenia

1. At least one of the following:
   a. Bizarre delusions concerning control of others or being controlled
   b. Grandiose or somatic-type delusions
   c. Persecutory or jealous delusions with hallucinations
   d. Auditory hallucinations with a running commentary
   e. Auditory hallucinations of one or two words on several occasions
   f. Incoherence, loose associations, illogical thinking, poverty of speech content, associated with at least one of the following:
      1) blunted, flat or inappropriate affect
      2) delusions or hallucinations
      3) catatonic or other grossly disorganized behavior

2. Deterioration from a previous level of functioning in such areas as work, social relations and self care

3. Duration: Continuous signs for at least six months

4. Full depressive or manic syndrome, if present, developed after any psychotic symptoms, or was brief in duration relative to this

5. Onset of prodromal or active phase before age 45

6. Rule out Organic Mental Disorder or Mental Retardation

   Total Criteria Present

Evaluator name and title ________________________________

Subject number _______________  Date ________________
Criteria for Diagnosis of Malingering

1. Presence of a medico-legal context of presentation ( )

2. A discrepancy between reported distress and objective findings ( )
   examples include:
   a. Patient reports differ from past information
   b. Patient reports differ from staff observations
   c. Patient engages in manipulative behavior
   d. Other (specify)  

3. Lack of cooperation with the diagnostic team or treatment plan ( )
   examples include:
   a. Discrepancies or inconsistencies in patient reported data
   b. Refusal to be tested or interviewed
   c. Elective mutism, understanding or speech impediment
   d. Other (specify)

4. Presence of an Antisocial Personality Disorder ( )
   criteria include:
   a. Age 18 or older
   b. At least two instances of deviant behavior, e.g., theft, vandalism, or unusually aggressive behavior before age 15
   c. At least three behavior problems such as financial irresponsibility, illegal occupation, and poor work history since age 15 and no period longer than five years without such a problem
   d. Antisocial behavior is not a symptom of another mental disorder

5. Exaggerated symptoms with a recognizable goal ( )

Total criteria present ( )

Evaluator Name and Title

Subject Number Date
APPENDIX B

Informed Consent Form
CONSENT FORM

1, _____________________________________, hereby consent to the administration of three psychological tests, the Projective Simulation Test, the MMPI and the Ammons and Ammons Quick Test. I understand the data may be used in a research program designed to aid in the diagnosis of Forensic patients. I understand that my participation is voluntary and that I may refuse to participate at any time without penalty or prejudice. I understand all research information will be handled in the strictest confidence and my tests will not be individually identifiable in any reports. I understand my participation or non-participation will not affect my release date or parole eligibility. I understand I may now ask any questions I may have of the examiner.

_________________________________________  ______________________
Signature                                      Date 

_________________________________________  ______________________
Witness                                        Date
APPENDIX C

Demographic Information Sheet
DEMOGRAPHIC DATA

Name ____________________________ Facility and # ____________

Date of Birth _______________ Age _______ Place of Birth _________

Home City and State ______________________ Race ____________

Charge __________________________ Status ____________

Number of Months Jailed ___________ Time Remaining __________

Previous Charges and Time Served ______________________________

Previous Hospital Admissions and Diagnoses ______________________

Highest School Grade Completed ________________________________

Occupation Previous to Admission ______________________________

Mental Illness in any other Family Member (list) ______________________
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

Appendix D, pages 135-146
APPENDIX D

PST Booklet and Response Sheet
APPENDIX E

Simulation Instructions
INSTRUCTIONS

This inventory consists of numbered statements regarding your opinions about yourself and your way of life. In this study, I am not concerned with how you really feel about these items. Rather, I want you to try to fool the psychologist into thinking you are insane or "crazy". Please answer every question on the following pages, trying to pick the response that you think a "crazy" or insane person would pick. Try to fool the psychologist into thinking you are "crazy".
INSTRUCTIONS

Look at the page you have been given with ten inkblots on it. Each inkblot is numbered underneath with a Roman Numeral. On the typed pages, for each numbered inkblot, you see five answers describing what the inkblot looks like. We are not interested in what the inkblot really looks like to you. We want you to try to fool the psychologist into thinking you are insane, or "crazy". For each answer, you circle the letter (A, B, C or D) of your choice. You must choose one of these four descriptions for each answer. When you have finished, you should have circled 50 choices. Sometimes you are asked to consider the whole inkblot. Sometimes your attention will be directed to a particular part of the inkblot. Remember to PICK THE DESCRIPTION THAT YOU THINK A "CRAZY" OR INSANE PERSON WOULD PICK. Try to fool the psychologist into thinking you are "crazy".
VITA

Christine M. Turin, Ph.D.
Rt. 1, Box 38
Higganum, Connecticut 06441
Telephone: 504/381-9047 h
203/345-8897 h
203/344-2651 w

Education

Ph.D. Louisiana State University, 1985, Baton Rouge, Louisiana.
Major: Clinical Psychology, Minor: Industrial Psychology
APA Approved program

M.S. University of Southwestern Louisiana, 1979, Lafayette, Louisiana. Major: Clinical Psychology

B.A. Saginaw Valley State College, 1977, University Center, Michigan.
Major: Psychology, Minor: Business

Professional Experience

Clinical Psychology Intern: provides psychotherapy in individual, group and marital modes, provides treatment planning consultation, psychological assessments and general ward consultation at a 650 bed state mental hospital serving both in and outpatients. Primary responsibility is on a ward of severely regressed chronic patients, however, psychotherapy and assessments are conducted with patients at all levels of functioning. Rotations are on an admissions ward, with acute patients, at an outpatient clinic and at a geriatrics unit. APA approved program.

Psychological Assistant III: provided treatment planning consultation, psychotherapy (group and individual), psychological assessments, intake interviews, and applied Forensic research in a population of mentally ill offenders. Initially, primary responsibility was on a ward of mentally retarded patients. Later, was transferred to an admissions and evaluation unit involved in assessing competency for court purposes. Required close inter-disciplinary collaboration with social work, nursing, security, recreation, work therapy and psychiatric personnel.

Psychological Fellow: performed both evaluation and psychotherapy for adults, adolescents and children. The types of problems addressed included depression, phobias, marital problems, adjustment reactions, sexual dysfunctions, psychosomatic illness, etc. This clinic administers evaluations for seminary applicants for several Roman Catholic Seminaries.
The Reading Clinic, Baton Rouge, Louisiana. Contract work from May, 1982 to August, 1982. Jerry Barlow, PhD., Supervisor. Psychological Evaluator: administered intellectual, personality screening, and social maturity tests to inmates at a correctional center for adolescents. Brief summaries of the test data as well as interview data and impressions were integrated with a data review from the files to make recommendations for disposition regarding Special Education.

The Psychology Clinic, Baton Rouge, Louisiana. May, 1981-July, 1982. Richard Rolston, PhD., Supervisor. Psychological Fellow: provided psychotherapy and routinely did application and update assessments for the Division of Vocational Rehabilitation and the Division of Disability Benefits for the State of Louisiana. Interface with the counselors of these agencies was required, and concise but thorough report writing was imperative. Occasionally, depositions for litigation were required.

Program for the Encouragement of Responsible Thinking, Baton Rouge, Louisiana. May, 1980-August, 1981. Myron Mohr, PhD., Supervisor. Group Facilitator: co-lead a large group of court referred shoplifting offenders in understanding and practicing responsible thinking and behaving, particularly regarding their criminal behavior. This was an eight hour workshop which included didactic and experiential learning such as lecture, problem-solving, role-playing and experience sharing.

Teaching Interpersonal Skills, Baton Rouge, Louisiana. February, 1981-February, 1982. Irving Lane, PhD., and Edward Timmons, PhD., Supervisors. Group Facilitator: acted as an assistant group facilitator to two industrial psychologists conducting workshops for executive personnel of a large industrial firm to improve their skills in dealing with others effectively. These were three eight hour per day workshops with a one day follow up three months later.

Louisiana State University, Baton Rouge, Louisiana. September, 1980-May, 1982. Felicia Pryor, PhD., Supervisor. Graduate Teaching Assistant: assisted professor in an undergraduate Psychotherapy class and an Adjustment class. Duties were often of a supportive nature, e.g., writing and grading tests, recording grades, conferences with students, etc. Included was some lecturing, group facilitation and role-playing.

Baton Rouge Area Detoxification Unit, Baton Rouge, Louisiana. March, 1980-August, 1980. Joan Vogel, Supervisor. Substance Abuse Counselor: conducted intake interviews with chemically dependent inpatients, often including family interviews, and wrote summaries for files. Motivated patients to continue in treatment and made appropriate referrals to community agencies. Conducted group therapy as well as individual sessions. Attended and participated in various substance abuse programs throughout the area as an observer.
The Baton Rouge Crisis Intervention Center (The Phone), Baton Rouge, Louisiana. February, 1979-October, 1982. Myron Mohr, PhD., Supervisor.

Crisis Intervention Counselor: conducted crisis counseling (by telephone) with a large variety of callers including suicide, loneliness, sexual concerns, information and consistent (habitual repeat) callers. Participated in tape reviews of calls every six months with staff members, and monthly extended training sessions on a variety of relevant topics. Acted as a community resource referral system. In addition, answered lines for Runaway Hotline, Parents Anonymous, Gamblers Anonymous, Mental Health Hotline and Battered Women. Acted as interface with emergency personnel.

Practicum Experience


Activities: intakes, formulation and presentation for staffing, psychotherapy with adult clients with primary cases involving a severe major depression complicated by numerous medical problems, and a migraine headache case. The approach was primarily behavioral, using a cognitive-behavioral approach for the depression case, and multi-channel biofeedback and cognitive-behavioral therapy for the migraine headache case.


Activities: conducted psychotherapy using a variety of modalities with various student cases including ego-dystonic homosexuality, trichotillomania, test anxiety, adjustment reaction, etc. Completed diagnostic assessments, attended and participated in weekly case conferences and didactic sessions, received one hour weekly of team supervision, participated in a weekly experiential group therapy session, and observed group therapy.

Seminars and Other Practical Training

May, 1980, Baton Rouge General Hospital Chemical Dependency Unit, Baton Rouge, Louisiana. Participated in Family Week Intervention Program as a Substance Abuse Counselor observer.

Summer, 1980, Baton Rouge Area Crisis Intervention Center, Baton Rouge, Louisiana. Participated in a voluntary group therapy experience with other crisis intervention counselors as a means of learning group therapy techniques.

February to March, 1979, Baton Rouge Crisis Intervention Center, Baton Rouge, Louisiana. Participated in a 60 hour training program for Crisis Intervention Counselors involving didactic and experiential learning which included role-playing of calls from different types of crisis callers, and learning crisis intervention theory.
Workshops

1978, Hypnosis Workshop, Joseph G. Dawson, PhD., Jackson, Louisiana.

Research

Dissertation: Assessing Malingering of Psychosis in a Forensic Population using the MMPI and the Projective Simulation Test. June M. Tuma, PhD., Chair, Louisiana State University, Baton Rouge, Louisiana, in progress.

Intermediate Project: A Comparison of the Responses from Incarcerated Males and College Students on the MMPI F and F-K Scales and the PST. June M. Tuma, PhD., Chair, Louisiana State University, Baton Rouge, Louisiana, 1984, unpublished.


Thesis: The Effects of Experimenter Expectancy and Locus of Control on Voluntary Heart Rate Increase. Stephen Hotard, PhD., Chair, University of Southwestern Louisiana, Lafayette, Louisiana, 1979, unpublished.

References upon request.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Christine Turin

Major Field: Clinical Psychology

Title of Dissertation: Detecting Malingering with the MMPI and the PST Setting using MMPI and PST.

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

May 10, 1985