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**Detecting malingered psychotic symptoms with the Rorschach
Projective Technique**

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Andrews University, 1994

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Andrews University
School of Education

DETECTING MALINGERED PSYCHOTIC SYMPTOMS WITH
THE RORSCHACH PROJECTIVE TECHNIQUE

A Dissertation
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Kristin M. Batchelder

June 1994

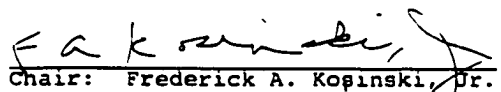
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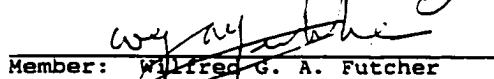
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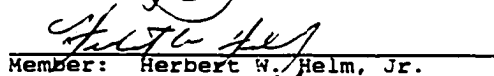
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ABSTRACT

DETECTING MALINGERED PSYCHOTIC SYMPTOMS WITH
THE RORSCHACH PROJECTIVE TECHNIQUE

by

Kristin M. Batchelder

Chair: Frederick A. Kosinski, Jr.

ABSTRACT OF GRADUATE STUDENT RESEARCH

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RORSCHACH PROJECTIVE TECHNIQUE

Name of researcher: Kristin M. Batchelder

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Problem

Criminal defendants may be strongly motivated to avoid prosecution by appearing mentally ill, and the malingering of psychotic symptoms is of special concern in legal proceedings. Much research has been conducted to determine accurate methods to detect malingering. These include clinical interviews, structured personality tests, intelligence tests, and projective techniques. This present study investigated the ability of specific variables on the Rorschach Projective Technique to detect malingered protocols.

Method

The 83 subjects in this study were restricted to male pre-trial defendants in the Federal Judicial system who were placed into three categories by diagnosis: (1) malingering psychotic symptoms, (2) psychotic disorders, and (3) all other diagnoses. The following Rorschach variables were investigated in this study: (1) the total number of responses, (2) the number of Popular responses, (3) the lambda ratio, which examines the frequency of pure form responses to all responses, (4) conventional form, (5) the Schizophrenia Index, (6) the weighted sum of six special scores, (7) the deviant verbalizations added to the deviant responses, and (8) confabulated responses added to inappropriate logic responses.

Results

The results of the study indicated that only the number of Popular responses statistically differentiated the malingerer group from the other two groups. Subjects from the malingerer group provided from 0 to 9 popular responses with a mean of 4.487. This was significantly lower than the means obtained by the psychotic group (mean = 5.8), the control group (mean = 5.9), and the mean of 6.9 which Exner (1989) reported for non-patient males. When the variability in the number of responses was controlled for, nothing was found to be significant. Using discriminant analysis, 73.9% of the malingerers were accurately classified.

Conclusions

Detecting malingered psychotic symptoms with the Rorschach is difficult. Suggestions for further research include identifying each subject's knowledge of psychiatric disorders and behaviors exhibited by those with mental disorders, and investigating other Rorschach variables.

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CHAPTER ONE

THE PROBLEM

Introduction and Background

Malingered mental illness appears as old as mental illness itself. Ulysses feigned insanity during the Trojan War (Homer, *The Iliad*), David malingered insanity when he fled from Saul to Achish, king of Gath (1 Sam 21:10-15), and William Shakespeare created characters who malingered when it was in their own interest (Edgar in *King Lear*). Shakespeare even provided a well-written description in *Hamlet* when he wrote, "Though this be madness, yet there is method in it" (Shakespeare, *Hamlet*).

Malingering has been generally defined as the deliberate exaggeration or falsification of a symptom or disorder that cannot be attributed to a mental disorder and appears to outweigh objective findings. The *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R)*, provides the following definition. Malingering is the

intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by

external incentives such as avoiding military conscription or duty, avoiding work, obtaining financial compensation, evading criminal prosecution, obtaining drugs, or securing better living conditions. (APA, 1987, p. 360)

Malingering becomes an issue whenever a psychological disorder is being used to assist in avoiding or changing an unwanted condition because any disorder may be malingered (Sierles, 1984). In conventional clinical and therapeutic settings where an individual is seeking help, there is less reason to doubt the symptoms an individual reports, although an exaggeration of problems which attempts to convey the intensity of needs is commonly found. On the other hand, when a psychological disorder is suggested to be a mitigating factor in a legal case, the truthfulness of the symptoms presented must bear up under direct scrutiny. In every forensic evaluation, the question of the genuineness of the patient's claims needs to be addressed (Ogloff, 1990; Rogers, 1988).

There is much hesitation in using the diagnosis of malingering because of a "lack of unequivocal external criterion of truth" or "ground truth" (Cornell & Hawk, 1989; Drob & Berger, 1987; Resnick, 1984) which makes absolute accuracy difficult even when malingering is highly probable. This hesitation to label malingering has many contributing factors, including fear of lawsuits, concerns about violating the doctor-patient relationship,

fear of increasing the probability of provoking a physical assault, and concern that this diagnosis may lead to a premature termination of the relationship. Malingering is often considered to be a diagnosis of exclusion that justifies the denial of treatment and benefits, where the assessment procedures pit the clinician against the patient, and there is no absolute proof that the intent to malingering was conscious (Pankratz & Erickson, 1990; Resnick, 1984).

The *DSM-III-R* gives no indication as to the prevalence of malingering. There are widely divergent estimates reported in the literature. Hay (1983) found that only 5 of 12,000 patients at a city hospital between 1972 and 1982 were considered to be feigning psychosis and four of these patients later became schizophrenic. Studies in a military setting suggest the incidence of malingering ranges from 2% to 7% (Brussel & Hitch, 1943; Flicker, 1956).

Estimates of malingering in the legal system are considerably higher because criminal defendants may be strongly motivated to avoid prosecution by appearing mentally ill (Cornell & Hawk, 1989; Resnick, 1984; Rogers, 1986; Ziskin, 1984). Davidson (1965) suggested that psychosis and mental incompetency are most likely to be malingered due to their direct impact on decisions of mental competence and responsibility as opposed to other

psychiatric disorders such as neurosis and amnesia. There is some evidence that a substantial number of defendants have successfully malingered (Lindsey & Ozawa, 1979; Pugh, 1973; Yochelson & Samenow, 1976).

Although the exact prevalence of malingering in the legal system is unknown, current estimates suggest that 14% to 41% of insanity defendants clearly malingered (Grossman & Wasyliv, 1988; Rogers, 1986). Cornell and Hawk (1989) found that 8% of 314 consecutive defendants for pre-trial evaluations were diagnosed as malingering.

The prevalence of actual psychiatric disorders of inmates suggests that 10% to 15% of prison subjects in North America have a *DSM-III-R* psychotic or mood disorder (Herrman, McGorry, Mills, & Singh, 1991; Monahan, 1992; Teplin, 1990; Walters, Mann, Miller, Hemphill, & Chlumsky, 1988).

The impact of actual and malingered psychiatric disorders on the legal system has made malingering an important clinical and legal issue (Cornell & Hawk, 1989). Those who successfully malingering and "beat the system" evade justice, defraud others, and undermine public confidence. As Wertham (1949) aptly noted, even a sane person would be willing to try to beat the system if his or her life were threatened with the electric chair. On the other hand, a clinical opinion that a defendant is malingering will have a significant impact on the legal

proceedings and is likely to damage the defendant's credibility. This diagnosis, if inaccurate, can place a defendant in legal jeopardy and deny necessary mental health treatment.

Because malingering is acknowledged to be a major concern, especially in legal settings, much research has been conducted to determine accurate methods of detecting malingering. Research has been conducted to evaluate clinical interviews (Drob & Berger, 1987), the MMPI and other objective personality measures (Bagby, Gillis, & Dickens, 1990; Berry, Baer, & Harris, 1991; Dalby, 1988; Hawk & Cornell, 1989; Lees-Haley & Fox, 1990; Roman, Tuley, Villanueva, & Mitchell, 1990; Walters, 1988; Wasyliv, Grossman, Haywood, & Cavanaugh, 1988), neurological tests (Franzen, Iverson & McCracken, 1990; Gorman, 1984; Guilmette & Guiliano, 1991), cognitive and intellectual tests (Goebel, 1983; Heaton, Smith, Lehman, & Vogt, 1978; Schretlen, 1986), projective tests (Albert, Fox, & Kahn, 1980; Franzen et al., 1990; Meisner, 1988; Perry & Kinder, 1990; Pettigrew, Tuma, Pickering, & Whelton, 1983) and psychological test batteries (Bash & Alpert, 1980; Heaton et al., 1978; Schretlen & Arkowitz, 1990). The existing studies on the detection of malingered psychotic symptoms are inconsistent in reporting success rates with psychological measurements and clinical interviews.

Statement of the Problem

With an increase in the recommendations for competency, insanity, and responsibility evaluations, there needs to be an empirically reliable method to accurately detect those who attempt to malingering psychotic symptoms. Although psychotic symptoms are neither necessary nor sufficient conditions to determine insanity or incompetence, these symptoms are closely considered when making clinical decisions. Moreover, as charges become more serious, there may be an increase in a defendant's motivation to malingering (Cornell & Hawk, 1989).

At this time, much research has been conducted to determine the accuracy of individual psychological tests and clinical interviews to determine malingering. Some research results are still inconclusive, especially in regard to the ability of the Rorschach Projective Technique to accurately classify malingering (Perry & Kinder, 1990).

Purpose of the Study

The purpose of this study was to investigate the ability of the Rorschach Projective Technique to identify a pattern of differentiation for malingered psychotic protocols obtained from criminal defendants in the Federal system. The research question asks if criminal defendants who malingering psychosis can be differentiated by their Rorschach protocols from actual psychotic defendants and a

control group of defendants. Previous research has been criticized for restricting malingering studies to malingering of schizophrenia and for lacking established and cross-validated cut-off scores. Additionally, criticisms include the fact that most studies have relied on the "simulation design," did not fix the number of responses (R), and used sample sizes that were too small for the number of variables under investigation (Exner, 1978; Ziskin, 1984).

Definitions

Malingering

For the purpose of this dissertation, the *DSM-III-R* definition of malingering is used.

The essential feature of malingering is intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military conscription or duty, avoiding work, obtaining financial compensation, evading criminal prosecution, obtaining drugs, or securing better living conditions. (APA, 1987, p. 360)

Symptoms exhibited by malingerers cannot be attributed to a mental disorder. The presence of external incentives and its intentional nature differentiate malingering from somatic, conversion, or factitious disorders.

There are three types of malingering. The first type is simulation, also known as positive malingering, which is the faking of symptoms which do not exist. Partial malingering is the conscious exaggeration of symptoms

which do exist. False imputation is where actual symptoms are ascribed to an event or cause which the patient consciously recognizes has no relationship to the symptoms (Garner, 1965). Garner also noted one additional type of malingering--dissimulation--which is the concealment or minimization of existing symptoms. This type of malingering conflicts with *DSM-III-R* usage.

Psychotic Disorder

Psychotic disorders, as classified by the *DSM-III-R*, include Schizophrenia, Psychotic Disorders Not Otherwise Specified, Delusional Disorders, some Mood Disorders, and certain Organic Mental Disorders. The *DSM-III-R* defines psychotic as "gross impairment in reality testing and the creation of a new reality." (p. 404) This term is used to describe a mental disorder during which all people with the disorder are actively psychotic sometime during the course of the disorder. The term psychotic also refers to a person at a certain time. When individuals are psychotic, they erroneously evaluate the accuracy of their thoughts and perceptions and then make inaccurate inferences about external reality even when there is contradictory evidence. Direct evidence of psychotic behavior is considered to be "the presence of either delusions or hallucinations" (APA, 1987, pp. 404-405).

Control Group

Individuals in the control group were male pre-trial defendants in the Federal Judicial system who had not received an Axis I diagnosis associated with a psychotic disorder or malingering after participating in a period of evaluation. These individuals underwent evaluation in accordance with a court order. These individuals may have had other Axis I and Axis II diagnoses such as substance-abuse diagnoses and/or personality disorders.

Assumptions

There were several assumptions that factored into this study. First, it was assumed that defendants given the Axis I diagnosis of Malingering had been as accurately diagnosed as possible. All defendants in the study were court ordered for an evaluation and placed in the inpatient forensic unit at the Federal Correctional Institution in Butner, North Carolina. All defendants evaluated were under 24-hour-per-day observation for a period of no less than 30 days and participated in clinical interviews, psychological testing, and group activities. Throughout the evaluation period, defendants' interactions and behaviors were observed and discrepancies between subjective reports of symptoms and objective findings were noted. Those diagnosed as malingerers failed to demonstrate symptoms that fell into one clinical

category: most malingerers demonstrated either too many or too few symptoms.

Another assumption was that the defendant's level of intelligence affected his ability to mangle successfully. To reduce the range in the variability of scores, a cutoff intelligence quotient of 80 was established for all subjects in this study. An intelligence quotient of 80 falls at the lower end of the "Low Average" range of intellectual functioning. Intelligence quotients falling below 80 are classified as "Borderline Intellectual Functioning" (70-79) and "Mentally Retarded" (69 and below) respectively (Wechsler, 1981).

Research Hypotheses

The following hypotheses refer to specific variables derived from the Rorschach protocols. These variables are individually described in the Instrumentation section of chapter 3.

Hypothesis 1: The psychotic group will obtain a significantly greater score on the Schizophrenia Index (SCZI) when compared to the malingerer group and the control group.

Hypothesis 2: There will be a significantly lower proportion of Popular responses (P) produced by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 3: There will be a significant difference in the average number of responses (R) on valid profiles obtained by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 4: There will be a significant difference in the Lambda ratio obtained by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 5: There will be a significant difference in the overall form quality (F+%) obtained by the malingerer group when compared to the psychotic group and the control group.

Hypothesis 6: There will be a significant difference in the total number of confabulations and inappropriate logic responses (CON + ALOG) obtained by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 7: There will be a significant difference in the total number of Deviant Verbalizations and Deviant Responses (DV + DR) obtained by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 8: There will be a significant difference in the Weighted Sum of Six Special Scores (WSUM6) obtained by the malingerer group when compared with the psychotic group and the control group.

Hypothesis 9: A combination of these variables (SCZI, P, CON + ALOG, DV + DR, WSUM6, L, R, and F+%) will

significantly differentiate the malingerer group, the psychotic group, and the control group.

Delimitations

Although the diagnosis of malingering is a subjective one and its use is somewhat controversial, it is a phenomenon which commonly occurs during litigious proceedings and needs to be investigated. Although the diagnosis of malingering was not supported by defendants' confessions, the diagnosis was accepted by the court in approximately 95% of the cases. The Axis I diagnosis of malingering was determined by examining the defendants' inconsistency of presentation, subjective symptoms, and observed behavior over a minimum of 30 days. Detailed accounts of interactions with mental health staff, correctional officers, and other inmates were considered, as were extensive amounts of collateral information, such as prior hospital records, information from friends and family, prior criminal history, and accounts of the alleged offense and behavioral observations completed by witnesses and law-enforcement officials.

In addition, this study investigated the malingering of psychotic symptoms and did not include the malingering of other psychiatric disorders such as amnesia, fugue, or borderline intellectual functioning. Psychotic symptoms are more likely to be malingered in forensic evaluations due to the close relationship of psychotic symptoms with

decisions regarding competency to stand trial and criminal responsibility.

Limitations

Some limitations inherent in this study centered around (1) criteria for acceptance, (2) defendants' knowledge about psychiatric disorders, and (3) generalizability to other populations.

Although there were strict criteria for inclusion in the study, malingers who obtained a Full Scale IQ score of less than 80 were included if there was evidence the subject had completed high school or obtained a General Equivalency Diploma (GED). Resnick (1984) noted that malingers tended to "overact" during clinical interview and testing. Drob and Berger (1987) stated that during intelligence testing, most malingers accurately perceived the tests as measuring intelligence, and therefore many malingers attempt to "flunk" by giving evasive and/or silly answers.

Additionally, with some subjects, the Rorschach had to be administered twice to obtain a valid protocol. All readministrations complied with Exner (1991) instructions.

Further limitations of this study may include the fact that the amount of knowledge and experience each individual had about psychiatric disorders was unknown. Knowledge of psychiatric disorders was not assessed prior to the evaluation.

Finally, the influence the ethnic makeup of the sample has on its generalizability to dissimilar ethnic populations is unknown. Additionally, all subjects in this study were involved with the legal system and caution is needed to generalize results to individuals outside the legal system.

CHAPTER TWO

REVIEW OF THE LITERATURE

Detection of Psychotic Disorders

Many psychological tests have been studied to determine their effectiveness in detecting psychotic disorders. Of all psychotic disorders, schizophrenia has received the most attention.

MMPI and Psychotic Disorders

Many studies have been completed on the detection of psychotic disorders and schizophrenia with the MMPI. Walters and Greene (1988) determined that Scale 8 is the best overall predictor, accurately classifying 64.5% of schizophrenics with a 14.5% false positive and 21.0% false negative rate. Others support the accuracy of this scale and various 2-point codes have been demonstrated to be associated with schizophrenia. Velasquez and Callahan (1990) found that Hispanic and White schizophrenics most often obtain a 2-point code of 2-8/8-2, which has been supported by other researchers (Braatz, 1970; Holland, Levi, & Watson, 1981; Rosen, 1958). Black schizophrenics more often obtain a 6-8/8-6 2-point code. The second most

commonly occurring 2-point code for all schizophrenics is 8-4/4-8 (Velasquez & Callahan, 1990). Moldin, Gottesman, and Erlenmeyer-Kimling (1987) also reported that the following Wiggins content scales are associated with schizophrenia: social maladjustment (SOC), religious fundamentalism (REL), psychoticism (PSY), and phobic (PHO).

Intelligence Tests and Psychotic Disorders

Peidmont, Sokolove, and Fleming (1989) examined the ability of the WAIS-R to detect schizophrenia. By examining the Wechsler inter-test scatter and clinical presentation, they determined that scores of Information greater than Comprehension indicate schizophrenia.

Rorschach and Psychotic Disorders

Research supports the ability of the Rorschach to detect schizophrenia and psychotic disorders. In general, researchers detected the presence of thought disorders (Adair & Wagner, 1992; Exner & Weiner, 1982; Frank, 1990), impaired perceptual accuracy and/or reality testing (DiNuovo, Laicardi, & Tobino, 1988; Exner & Weiner, 1982; Frank, 1990; Rorschach, 1921/1951), poor emotional control (DiNuovo et al., 1988; Exner & Weiner, 1982), limited or ineffectual interpersonal life (Exner & Weiner, 1982), and highly personal, illogical, and bizarre responses (Frank,

1990; Goldfried, Stricker, & Weiner, 1971; Kelley & Klopfer, 1939; Kendig, 1949; Rorschach, 1921/1951). Additionally, Exner (1986) reported that his Schizophrenia Index (SCZI) accurately identified 75% to 85% of randomly selected schizophrenic patients and identified very few nonschizophrenics. Of the false negatives, 70% had protocols containing less than 14 responses.

Vincent and Harman (1991) examined the clinical validity of the Rorschach and determined that the following Exner parametric variables were clinically significant for schizophrenics: FQX-, Lambda, X-%, Contaminated responses (CONTAM), and that the sum of special scores were two standard deviations above the mean whereas FQXo and X+% fell two standard deviations below the mean. The following special scores also fell in the top 2% for schizophrenics: Deviant Responses (DR), Deviant Verbalizations (DV), Incongruous Responses (INC), Fabulized Combinations (FAB), and Inappropriate Logic (ALOG).

Rorschach Responses of Criminals

Murthy and Ram (1986) examined the responses of criminals to the Rorschach. They expected several differences when compared to a non-incarcerated control group, including (1) differences in emotional control, (2) impulsivity, (3) an extroversive trend, and (4) immature

ego functioning. Of these four hypotheses, only impulsivity (indicated by FM>2M) differed at the .01 level from the control group. This indicated that there was more impulsivity and immediate need for gratification among criminals.

Models of Malingering

There are three basic models of malingering: (1) Pathogenic, (2) DSM-III-R, and (3) Adaptational. The model one adheres to when conceptualizing malingering will affect how malingering is detected. These three models are described in detail below.

In the Pathogenic model, malingering is seen as an ineffective attempt to deal with psychotic and neurotic processes by intentionally presenting psychopathological symptoms (Rogers, 1990). This model centers on the tension between the unconscious illness and the conscious production of symptoms that prevents DSM-III-R classification. Problems with this model include: (1) failure to explain etiology or motivation, (2) failure of malingerers to deteriorate once a goal is achieved, and (3) reduced need to appear mentally ill because of the improvement in mental health services.

The DSM-III-R model, also known as the Puritanical model, focuses on the criminal aspects of malingering, especially the antisocial motivation to "beat the system."

This model does not emphasize clinical presentation, but focuses on background information and situational variables. Criticisms of this model include: (1) an emphasis on socially deviant behaviors which ignore clinical presentation, (2) overabundance of background data, and (3) failure to appreciate that chronic psychiatric patients are at least as uncooperative as malingerers. Additionally, corroborative data are considered to be more useful in diagnosing with this model than are objective findings.

The Adaptational model assumes that malingerers attempt to maximize their chances in a risky situation. A choice is made on the basis of expected utility and likelihood of success where malingering is one option available. The process is considered adaptive as it seeks the most effective manner to achieve one's goals (Rogers, 1990). The main criticism of this model is its discrepancy with the current diagnostic criteria.

Categories of Malingering Studies

Many studies have been conducted on malingering and its detection. Most studies have fallen into one of the following three categories: (1) case studies, (2) partially controlled studies, and (3) fully controlled studies. Case studies are typically uncontrolled studies which are based on one or more subjects who were either

"suspected" or "confessed" malingerers. Partially controlled studies compare the results from a group of subjects answering honestly to the results from experimental subjects instructed to fake good, bad, or a certain type of mental disorder. In fully controlled studies, malingerers are compared to genuinely disturbed subjects and a control group.

Most studies have been designed to examine simulated malingering which produces the simulation-malingering paradox. Subjects are asked to comply with instructions to fake a test so that individuals who fake a test when asked to comply can be studied (Rogers & Cavanaugh, 1983). This approach attempts to compensate for the uncertainty of accurate classification; but the resulting generalizability from simulators to malingerers is questionable.

Detecting Malingering with Clinical Interviews

There is some controversy regarding the ability of individuals to detect malingering during everyday and professional situations. Ekman and O'Sullivan (1991) evaluated the ability to detect lying. The subjects in this study included individuals from the U.S. Secret Service, Central Intelligence Agency (CIA), Federal Bureau of Investigation (FBI), National Security Agents, Drug Enforcement Administration, police officers, judges,

psychiatrists, working adults, and college students. The results indicated that only the Secret Service demonstrated a better-than-chance ability to detect lying. The best cues for detecting deception were both verbal cues and behaviors.

Rogers (1988) agreed that human judgment is full of error, even among trained clinicians. He reported prior research that stated that clinical interviews are haphazard (Arkes, 1986; Arkes & Hammond, 1986; Kleinmütz, 1986; Wiggins, 1981) and that unstructured clinical interviews do not assist in the identification of malingering. Some researched structured interviews, including the Structured Interview of Reported Symptoms (SIRS) (Rogers, 1984, 1986) and the Schedule of Affective Disorders and Schizophrenia (SADS) (Spitzer, Endicott, & Robins, 1978) may be more useful (Ogloff, 1990; Rogers, 1988).

In contrast, research supports the ability of trained clinicians to detect malingering and deception. Cornell and Hawk (1989) found that clinical psychologists with specialized forensic training obtained an 89.1% classification accuracy when distinguishing genuine psychotic from malingered cases by examining the clinical presentation variables. The clinical presentation variables used to differentiate groups included: overt behaviors, defensiveness, requests for treatment,

clustering of symptoms, and obvious symptoms without the subtle and more common ones such as blunted or inappropriate affect.

Drob and Berger (1987) provided four signs of feigning psychosis in a clinical interview: (1) the behavior of the subject does not conform to the delusion, (2) the subject relates far-fetched stories, (3) the presence of positive but no negative signs of psychosis (e.g., no blunted affect, concreteness), and (4) an emphasis on non-drug-related visual hallucinations. They stated that malingerers are likely to expose themselves by the amount of attention given to personal hygiene, requests for medication and focus on medical problems, requests for special diets, and complaints of unjust or improper treatment.

Detecting Malingerers with Intelligence Tests

As with clinical interviews, there is also much discrepancy about the ability of intelligence tests to detect malingerers. Some studies indicate that differentiation between malingerers and mentally disordered or brain-damaged protocols is possible (Goebel, 1983; Schretlen, 1986) whereas other researchers have disagreed (Heaton et al., 1978). Scatter analysis of subtests and test items may be more accurate, and early work done by Schretlen (1986, 1988) indicates promising findings.

Detecting Malingering with
Personality Inventories

The MMPI (Hathaway & McKinley, 1967) has received more attention than any psychological test in examining its ability to detect malingering and deception. Identification of malingering and individuals faking bad or good was considered essential during the development of this instrument. Although it is the most empirically researched instrument, still there are limitations (Greene, 1988; Schretlen, 1988).

The research investigating detection of malingering with the MMPI and the MMPI-2 is promising. In examining the F scale, several F and F-K cutoff scores have been established with differing reports of classification accuracy (Berry et al., 1991; Hawk & Cornell, 1989; Heilbrun, Bennett, White, & Kelly, 1990; Roman et al., 1990; Walters, 1988; Wasyliv et al., 1988). Variations of the Obvious-Subtle score relationship have also demonstrated some ability to detect malingering and deception (Heilbrun et al., 1990; Lees-Haley & Fox, 1990; Walters, 1988; Wasyliv et al., 1988). The Dissimulation scale (Ds), both original and revised, has shown promise in detecting malingering (Heilbrun et al., 1990; Walters, 1988; Wasyliv et al., 1988).

Detecting Malingering with the Rorschach

Regardless of arguments about the reliability and validity of the Rorschach Projective Technique, it has enjoyed a prominent status in the field of psychological testing and has been included in over 5000 studies and reports. It is often included in a psychological battery when malingering is suspected because it is believed to be resistant to intentional manipulation by the subject.

It was originally assumed that the Rorschach was impossible to malingering due to its intentionally ambiguous stimuli. This assumption presumed the tasks required to respond to the stimuli tapped the unconscious, and therefore were inaccessible to conscious alteration. Early Rorschach studies (Fosberg, 1938, 1941, 1943) examined the vulnerability of the Rorschach to the effects of faking when given different instructional sets at different administrations. Fosberg (1938, 1941) conducted two test-retest studies in which individuals took the Rorschach under standard conditions and then under instructions to alter responses to perform at their best or worst. Fosberg (1941) concluded that the Rorschach withstood all manipulation attempts and could not be faked.

These findings strengthened the belief that the Rorschach was unfakable due to the involuntary projection

of the unconscious personality traits in forming a response. During the 1940s, only one report of clinical data was published in which it was suggested that attempts to fake responses to the Rorschach could be detected by observing an overall decrease in the number of responses (R), a failure to see any popular (P) responses, an increase in response time, and rejections of cards (Benton, 1945). In addition, it was assumed that the overall behavior of malingerers on the Rorschach would mirror behaviors on other tests.

Subsequent investigators demonstrated that subjects could alter their Rorschach scores but suggested that these alterations were detectable (Carp & Shavin, 1950; Easton & Feigenbaum, 1967; Feldman & Graley, 1954). Feldman and Graley (1954) found that "malingered" protocols had a higher prevalence of inanimate movement (m), CF+C, FC, sex, anatomy (An), and a decrease in P. Easton and Feigenbaum (1967) discovered a significant decrease in D, P, Obj, and R on malingered protocols. At the conclusion of Feldman and Graley's (1954) study, subjects reported the use of the following strategies in an attempt to mangle: avoiding normal responses; emphasizing sexual, aggressive, or gory responses, including maladjustment symptoms; and faking a specific or unspecific mental disorder.

Almost a full decade passed without further published research on the Rorschach and malingering. When research resumed in the 1970s, there was a shift away from using the test-retest design, and discrepant findings about the usefulness of the Rorschach to accurately detect malingering continued to be reported.

Perry and Kinder (1990) reviewed empirical malingering studies that used the Rorschach. As a whole, the literature suggested that the Rorschach could be altered by external conditions and volitionally by the subject, but no reliable pattern of responding to identify a malingered protocol had been identified. They stated that the ability of the Rorschach to detect malingering was still unresolved.

These inconclusive studies on the usefulness of the Rorschach to detect malingering can be divided into two camps: those that uphold the Rorschach's usefulness, and those that report that the Rorschach has not been able to accurately classify malingerers.

Unsuccessful Malingering Detection

Several studies have reported on the inability of the Rorschach to accurately detect malingering (Albert et al., 1980; Mittman, 1983; Overton, 1984).

Albert et al. (1980) seriously challenged the Rorschach's ability to detect malingering after their

subjects successfully malingered paranoid schizophrenia to Rorschach experts who blindly evaluated the protocols. Their subjects included psychotic inpatients, uninformed fakers, role-informed fakers, and normals. All protocols were administered under standardized instructions and then were randomly assigned to packets, one from each condition, and mailed to 261 Fellows of the Society for Personality Assessment. A request for a diagnosis and degree of certainty the clinician had of diagnosis was requested from each judge, who was also asked to evaluate for the possibility of malingering. They found that 72% of informed fakers were diagnosed as psychotic; 46% of the uninformed fakers were diagnosed as psychotic; and 42% of the actual schizophrenic patients were diagnosed as psychotic.

This study was criticized by Exner (1978) on the basis that the Rorschach scoring and interpretation system used by any of the judges was not provided, and there was no evidence that the protocols were ever scored.

In a later study conducted by Kahn, Fox, and Rhode (1988), the protocols used in a previous study (Albert et al., 1980) were rescored. In this study, 50% of the protocols were rescored using the Exner system and analyzed using Exner's Semantic Computer Interpretation program. Using the computer interpretation, all of the

normal protocols were accurately detected. Of the faked protocols, the computer judged 33% to be of questionable validity on the grounds of a low R. But the computer was still wrong in two-thirds of the cases. The computer was almost totally wrong in evaluating psychotics: uninformed fakers were classified with severe pathology 50% of the time, whereas informed fakers were classified with severe pathology 80% of the time.

Despite criticisms, Mittman (1983) also reported that judges were fooled by the protocols of informed fakers. She asked 90 expert clinicians to judge a packet of five randomly assigned protocols that were taken from groups of inpatient depressives, inpatient schizophrenics, and uninformed fakers asked to simulate schizophrenia, informed fakers of schizophrenia, and normal controls with standard instructions. Judges made frequent misdiagnoses of schizophrenia for informed malingerers, but significantly diagnosed uninformed fakers as schizophrenic less often than actual schizophrenics. Mittman concurred with Albert et al. (1980) in concluding that the Rorschach is susceptible to malingering if the respondents were well informed about their role.

The results from Overton's (1984) study were slightly different. Although no reliable patterns of malingering were found, the noninformed fakers appeared closer to

psychotic protocols than the informed fakers who produced protocols too pronounced to be believable. Overton suggested malingering could best be identified by extra-test behavior, history, and motivation of the subject.

Successful Malingering Detection

Just as several studies reported on the inability to detect malingering on the Rorschach, several studies have reported that malingering could be accurately identified (Bash, 1978; Exner & Wylie, 1975; Pettigrew et al., 1983; Seamons, Howell, Carlisle, & Roe, 1981). These studies have involved simulators and diagnosed malingerers.

Exner and Wylie (1975) studied the ability of "experienced" subjects (N = 12) with knowledge of schizophrenia to malingering Rorschach protocols within a 2-hour time limit. Although this study was criticized due to the lack of standardized administration conditions, Exner stated that malingerers may be identified by their use of good form responses along with dramatic verbiage. Only one protocol achieved a critical score on the schizophrenia index and was considered "schizophrenic."

Pettigrew et al. (1983) supported Exner and Wylie's (1975) findings on the ability to simulate psychosis and detect a simulation. They administered a group-form, multiple-choice Rorschach to psychotic patients, simulated malingerers, and a control group. The response categories

for each inkblot included four types: (1) good form with bizarre wording, (2) good form with non-bizarre or elaborate wording, (3) poor form with bizarre wording, and (4) poor form with non-bizarre or elaborate wording. The evaluation of each subject's ten responses indicated that malingerers gave significantly more Type 1 responses than did the control or psychotic groups, and more gave Type 2 responses than did the psychotics. To date, this has been the only experiment that controlled for variance in R.

Bash (1978) compared diagnosed malingerers to hallucinating schizophrenics, nonhallucinating schizophrenics, and nonpsychotic mental patients. She found that the malingerers could be differentiated from the other three groups by three items only: rejection of cards, failure to support easy populars, and low F%. She concluded that malingerers were not a special group because they could not be differentiated on many variables.

Seamons et al. (1981) studied prison inmates who fell into one of these four diagnostic categories: nonschizophrenic, latent schizophrenic, residual schizophrenic, and psychotic schizophrenic. Each subject completed a Rorschach profile under two instructional sets: "appear as if you are a normal, well-adjusted individual" and appear "as if you were mentally ill and

psychotic." The protocols were scored according to the Exner (1974) scoring system and analysis of variance was performed on the 48 variables scored. The judge was able to differentiate malingered protocols with 80% accuracy as to whether the respondent had been instructed to appear normal or appear mentally ill. The results indicated that direct instructions to alter Rorschach responses affected content-area responses but did not affect the ratios, percentages, and deviations. Under instruction to malingering a mental illness, there was a decrease in P and an increase in blood, ep, INCOM, FABCOM, and dramatic responses including themes of depression, sex, blood, gore, confusion, mutilation, hatred, fighting, and decapitation. These "dramatic" responses were consistent with Exner and Wylie's (1975) findings, and were also useful and effective for discrimination. Seamons et al. (1981) suggested that when X+%, F+%, and L are in the normal range, and there is a high number of dramatic responses including blood, texture, shading, vista, nonhuman movement, or inappropriate combinations, it may be indicative of an attempt to appear mentally ill.

Several limitations of this study have been noted by Ziskin (1984), including (1) a lack of report on the psychological status of the nonschizophrenics and (2) none of the protocols were administered under standardized

conditions. There was some concern that the expert judge also had some unique skill or "cuing" information available that led to the high success rate.

The Rorschach Workshops Alumni Newspaper (cited in Perry & Kinder, 1990) reported a 5-year project on malingering. Early results suggest that between 20% and 25% of subjects instructed about schizophrenia obtained values of 4 on the Schizophrenic Index (SCZI), whereas almost none achieved values of 5.

Changes Resulting from Instructions

Studies have noted the effect on Rorschach responses resulting from instructions to make a globally favorable or unfavorable impression. These include changes in Z (Carp & Shavin, 1950), D, F, R, P (Easton & Feigenbaum, 1967), and M, P, Sex, FC, CF (Feldman & Graley, 1954). In studies of incarcerated legal offenders, instructions to appear psychotic and normal in successive administrations produced change in distress correlates such as Bl, the sum of achromatic color, shading, m, and es, whereas form did not change (Seamons et al., 1981).

Suspected Rorschach Cues to Malingering

When subjects attempt to malingering on the Rorschach, the following changes are reported to occur: themes of dysphoria and deviance (Feldman & Graley, 1954; Fosberg,

1943; Seamons et al., 1981), determinants (Seamons et al., 1981), and rating of psychopathology (Albert et al., 1980). Drob and Berger (1987) suggested that cues to malingering also include responses that are contradicted by the person's own behavior or within the exam itself. Specifically, they note the presence of many rejections, which is viewed as an attempt to inhibit behavior in an unfamiliar context, or "crazy" and/or distorted content which is contradicted by the benign, formal features of their responses.

Summary of Malingering Detection

Early Rorschach studies supported the assumption that the Rorschach was immune to all attempts at manipulation (Benton, 1945; Fosberg, 1938, 1941, 1943). Subsequent investigators demonstrated that subjects could alter their Rorschach scores in response to instructional sets (Carp & Shavin, 1950; Easton & Feigenbaum, 1967; Exner & Wylie, 1975; Feldman & Graley, 1954), and these alterations were detectable at a level higher than chance. Recent studies are inconsistent and inconclusive; but, as a whole, it appears that the Rorschach profile may be altered by external conditions and/or consciously by the subject. Some studies suggest that attempts to malingering on the Rorschach are detectable to clinicians (Pettigrew et al., 1983; Seamons et al., 1981), although others report that

clinicians cannot detect malingered protocols at a level greater than chance (Albert et al., 1980; Kahn et al., 1988; Mittman, 1983).

Several methodological weaknesses are present in the existing research. In most studies, subjects are instructed to simulate a mental disorder about which they may or may not be educated. Research that examines the abilities of simulated malingerers may be impossible to generalize to true malingerers who are generally more invested in appearing mentally ill and are operating under a different motivation to be successful. Additionally, there is a lack of a consistent system of administration, evaluation, and interpretation of Rorschach protocols. Critics have also reported on the difficulties related to the variable number of responses (R) produced by individuals on the Rorschach. Fourteen responses are necessary for a valid profile. It has been noted that malingerers produce fewer responses, but it is unclear exactly which other scales and ratios are affected by R. In addition, a common problem in Rorschach studies is that the sample size is too small for the number of variables being analyzed. This increases the likelihood of spurious random significance.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to investigate the usefulness of the Rorschach in the identification of malingered psychotic protocols when compared with genuine psychotic protocols and a control group.

Population and Sample

The population for this study consisted of pre-trial criminal defendants in the Federal system who have been court ordered to undergo a Forensic Evaluation for Competency to Stand Trial and/or Criminal Responsibility pursuant to U.S. Code 18, Sections 4141 and 4142. The population was housed in the Forensic Unit at the Federal Correctional Institute in Butner, North Carolina. All individuals were initially admitted to a Seclusion Unit and later released to the Forensic Unit when each patient was medically and psychologically cleared. Twenty-four-hour-per-day observation by Mental Health Staff and Correctional Staff continued during the 30-plus-day evaluation period. The sample was drawn from archival

files of consecutive admissions since 1987 which contained valid Rorschach protocols, intelligence testing, MMPI profiles (not used in this investigation), and a completed Forensic Evaluation that had been submitted to the court. For a Rorschach profile to be considered valid, a minimum of 14 responses was required. Only a few of the complete test batteries in the archives contained invalid Rorschach protocols. The sample consisted of (1) 30 diagnosed psychotics, (2) 23 individuals diagnosed as having malingered psychotic symptoms, and (3) 30 individuals who did not have an Axis I diagnosis associated with psychosis or malingering.

A typical diagnosed malingerer in this study was a 37-year-old White, unmarried male with a high-school education. Additionally, 61% of the malingerers were charged with a crime against person rather than property, and 52% had a criminal history. Sixty-five percent of this group had reported a psychiatric history which may have provided an opportunity to observe those with mental disorders. Of those diagnosed as malingering, 65% had been referred for both competency and responsibility evaluations, although the most commonly occurring Axis I diagnosis after Malingering was Substance Abuse.

The typical diagnosed psychotic in this study was also a 37-year-old, White, unmarried male with a

high-school education. Seventy percent of this group were charged with a crime against person rather than property, and 57% had a criminal history. Ninety percent of the subjects in the psychotic group had reported a psychiatric history, and during the course of the present hospitalization, 47% were diagnosed as schizophrenic and 23% were diagnosed as schizoaffective. Sixty-three percent of the subjects in this group were referred for competency evaluations.

The typical subject placed in the control group in this study was a 38-year-old, White, unmarried male with a high-school education. Fifty-three percent of this group were charged with a crime against persons rather than property, and 53% had a criminal history. Fifty-seven percent of the control group had reported a psychiatric history; during the course of the present hospitalization, 63% were diagnosed with a Substance Abuse disorder, 30% were diagnosed with a Mood Disorder, and 40% were diagnosed on Axis II with Personality Disorder, Not Otherwise Specified. Fifty-three percent had been referred for both competency and responsibility evaluations.

For the Analysis of Variance (ANOVA) power analysis, the harmonic mean of 30, 30, and 23 (i.e., 27.24) was used as n in the procedures described by Winer, Brown, and

Michels (1991, p. 126ff). Using a large effect size and $\alpha = 0.05$, power was determined to be between 0.94 and 0.96. Using a moderate effect size, power was estimated to lie between 0.59 and 0.64. The power analysis for Chi Square was used in the procedure described by Cohen (1969, p. 206ff). Using a large effect size and $\alpha = 0.05$, the power was determined to be 0.96. Using a moderate effect size, the power was estimated to be 0.73.

The terms psychotic and malingering are consistent with DSM-III-R usage. Psychotic subjects were those who presented with delusions, hallucinations, disordered speech, or other bizarre behavior that fit the diagnostic categories for a psychotic disorder. Malingerers were those who presented similar symptoms which the clinicians viewed as feigned. The diagnosis refers to the mental state of the defendant at the time of the evaluation and results from deciding whether there was active malingering or psychosis.

Instrumentation

The variables under direct scrutiny in this study were obtained from the Rorschach protocols.

Rorschach

The Rorschach Projective Technique (Rorschach, 1921/1951) was originally developed to assist in the

differentiation of schizophrenia by investigating perception. This test consists of 10 symmetrical inkblots on separate cards. Five of the inkblots are achromatic, 2 are black, white, and red, and 3 are multicolored.

The process of responding to Rorschach is a problem-solving task which involves decision choices among a range of potential responses. The response process usually occurs quickly and involves at least three phases: (1) visual input, encoding, and rank order of potential responses, (2) discarding potential answers due to low ranking or censoring, and (3) selecting the remaining responses because of the psychological states activated by the test (Exner, 1986; Perry & Kinder, 1990).

Following the Exner Comprehensive System (1989), there are two stages to a proper Rorschach administration: (1) the response or association phase, and (2) the inquiry phase. During the response phase, the subject is presented with the first card, and asked: "What might this be?" The subject's responses to each card, presented one at a time, are recorded verbatim. If only one response is provided for the first card, the subject is prompted: "Anything else?" Attempts to avoid answering (rejection) are discouraged, but accepted. During the inquiry phase, the subject explains the features and qualities of the card that led to the perception and

enables accurate scoring. The inquiry is not used to elicit new responses. If less than a total of 14 responses are given for the 10 cards during the response phase, the test is immediately readministered before inquiry with the following instructions:

Now you know how it's done. But there's a problem. You didn't give enough answers for us to get anything out of the test. So we will go through them again and this time I want you to make sure to give me more answers. You can include the same one's you've already given if you like but make sure to give me more answers this time. (Exner, 1989, p. 8)

The Exner Comprehensive System was normed on 2,500 adults (Exner, 1978) and 1,970 children (Exner & Weiner, 1982). Parker, Hanson, and Hunsley (1988) reported on the reliability and trait stability of the Rorschach as part of a meta analysis. The relative reliability of the Rorschach is 0.86, the 95% confidence interval for trait stability is estimated to range from 0.79 to 0.89, and the convergent validity was estimated at 0.41.

Responses (R)

The Responses (R) scale consists of the total number of responses the subject provides for the 10 cards. Most protocols contain 17 to 27 responses (Exner, 1986). Adult records containing less than 17 responses usually signal defensiveness or resistance, intellectual limitations, depression, or neurological impairment (Exner, 1986). The

number of responses for inpatient schizophrenics ranges from 14 to 45, with a mean of 23.44 and a standard deviation of 8.66 (Exner, 1989). The test-retest reliability of R was 0.86 after 1 year (Exner, Armbruster, & Viglione, 1978) and 0.79 after 3 years (Exner, Thomas, & Cohen, 1983).

Popular Responses (P)

Popular responses are defined as responses which occur to the same card at least once in every three protocols. There are a total of 13 popular responses, and obtaining populars suggests that the subject has the capability for conventional perception. The number of popular responses obtained from nonpatient males ranges from 3 to 10 with a mean of 6.90 and a standard deviation of 1.31. The number of popular responses for inpatient schizophrenics ranges from 1 to 10, with a mean of 4.67 and a standard deviation of 2.08 (Exner, 1989). This scale was standardized on 7,500 protocols. The test-retest reliability after 1 year was 0.83 (Exner et al., 1978) and 0.73 after 3 years (Exner et al., 1983).

Lambda (L)

Lambda is a ratio which compares the frequency of the pure form (F) responses with all other answers on the protocol. This ratio is considered to be related to the

issue of economizing the use of resources. If the lambda for adults is greater than 1.2, this signals that most of the responses are simplistic and neglected the complexity of the stimulus field. This may signal defensiveness or a basic coping style. The lambda obtained from nonpatient males ranges from 0.18 to 2.25, with a mean of 0.56 and a standard deviation of 0.25; only 5% obtained a lambda value greater than 0.99. The lambda for inpatient schizophrenics ranges from 0.05 to 29.00, with a mean of 1.57 and a standard deviation of 3.47; 39% obtained lambda values greater than 0.99 (Exner, 1989). The test-retest reliability of this ratio was 0.78 after 1 year (Exner et al., 1978) and 0.82 after 3 years (Exner et al., 1983).

Conventional Pure Form (F+%)

Conventional pure form examines the perceptual accuracy of the total record. It provides data about how the subject used the form of the blot in a reality-oriented manner (Exner, 1986). Conventional pure form is calculated as the sum of ordinary and excellent form responses divided by the sum of all form responses. On protocols obtained from nonpatient males, conventional pure form ranged from 0.25 to 1.00, with a mean of 0.72 and a standard deviation of 0.16. On protocols from inpatient schizophrenics, conventional pure form ranged from 0.00 to 1.00, with a mean of 0.42 and a standard

deviation of 0.20 (Exner, 1989). The test-retest reliability of this ratio was 0.86 after 1 year (Exner et al., 1978) and 0.80 after 3 years (Exner et al., 1983). The F+% mean for schizophrenics is 53% (Exner, 1986).

Schizophrenia Index (SCZI)

The Schizophrenia Index represents the sum of a number of variables which are positive for problems in thinking and perceptual accuracy. This scale is positive if four or more of the following conditions are true:

1. (X+% < .61) and (S-% < .41) or (X+% < .50)
2. X-% > .29
3. (FQ- > FQu) or (FQ- > FQo + FQ+)
4. (Sum of level 2 special scores > 1) and (FAB2 > 0)
5. (Sum of 6 special scores > 6) or (WSUM6 > 17)
6. (M- > 1) or (X-% > .40). (Exner, 1989)

Exner (1986) reported that this scale accurately identified 75% to 85% of schizophrenics. Inpatient schizophrenics obtained values of 4 or greater in 82% of the cases, whereas none of the nonpatient males obtained scores greater than 3 (Exner, 1989).

Weighted Sum of Six Special Scores (WSUM6)

The special scores refer to qualitative aspects of responses. These six special scores are: (1) deviant verbalizations (DV), (2) incongruous combinations (INCOM), (3) deviant responses (DR), (4) fabulized combinations (FABCOM), (5) inappropriate logic (ALOG), and (6)

contaminations (CONTAM). These special scores are used to identify difficulties with cognitive processing, but none of these scores in low frequency are a cause for concern. Exner (1986) reported that 75% of protocols from nonpatient subjects were given a special score. Collectively, these special scores represent a continuum of cognitive dysfunction, ranging from deviant verbalizations (the most common special score which includes neologisms and redundancy) to contaminated responses which represent considerable dysfunction (where two or more impressions are fused into a single response). Incongruous combinations are scored when images are inappropriately merged into a single object (e.g., "a butterfly with hands"). Deviant responses consist of inappropriate phrases and circumstantial responses. Fabulized combinations occur when there are implausible relationships between two objects (e.g., "two ants fighting over a basketball"). Inappropriate logic occurs when strained reasoning is used to justify a response (e.g., "it looks like the North Pole because it is on top").

In obtaining the Weighted Sum of Six Special Scores, each special score receives a weight according to the following formula:

$$\begin{aligned} \text{WSUM6} = & (1)\text{DV} + (2)\text{DV2} + (2)\text{INCOM} + (4)\text{INCOM2} + (3)\text{DR} \\ & + (6)\text{DR2} + (4)\text{FABCOM} + (7)\text{FABCOM2} + (5)\text{ALOG} + \\ & (6)\text{CONTAM} \end{aligned}$$

On the scale, inpatient schizophrenics obtained a mean of 44.69 and a standard deviation of 35.40, whereas nonpatient males obtained a mean of 3.34 with a standard deviation of 3.04 (Exner, 1989).

Deviant Verbalizations (DV)

Deviant verbalizations are special scores which signal that there is some unusual characteristic in the response. Deviant verbalizations involve neologisms, use of an incorrect word (e.g., "a cat sticking her purr up") and redundancy, where the nature of the objects is reported twice (e.g., "a pair of two birds"). Nonpatient males obtained between 0 and 4 on this scale, with a mean of 0.67 and a standard deviation of 0.81. Inpatient schizophrenics' scores ranged from 0 to 7 and had a mean of 0.78 and a standard deviation of 1.18 (Exner, 1989).

Deviant Responses (DR)

Deviant responses are special scores that are assigned to answers with inappropriate phrases that are irrelevant to the response and to circumstantial responses during which the subject becomes inappropriately elaborative. Nonpatient males obtained between 0 and 2 on this scale, with a mean of 0.15 and a standard deviation

of 0.39. Inpatient schizophrenics' scores ranged from 0 to 7 and had a mean of 0.97 and a standard deviation of 1.49 (Exner, 1989).

Confabulation (CON)

Confabulation is a special score assigned when a subject attends to a small area of the blot and then generalizes the response to include a larger area or the entire blot. The generalization from the detail to the larger area often disregards the natural contours of the blot. This is a highly unique form of response that occurs only when cognitive controls are absent or fail. Nonpatient males obtained 0 on this scale. Inpatient schizophrenics' scores ranged from 0 to 2 and had a mean of 0.05 and a standard deviation of 0.26 (Exner, 1989).

Inappropriate Logic (ALOG)

Inappropriate logic occurs when a subject uses strained reasoning to justify a response. The logic is not conventional and appears to be the result of "loose thinking." This is only scored when the subject spontaneously offers the justification such as, "It must be the North Pole because it's at the top of the card." Nonpatient males obtained between 0 and 1 on this scale, with a mean of 0.04 and a standard deviation of 0.20. Inpatient schizophrenics' scores ranged from 0 to 6 and

had a mean of .93 and a standard deviation of 1.40 (Exner, 1989).

Procedures

Guided by past research criticisms, statistical differences were investigated between (1) pre-trial defendants malingering psychotic symptoms, (2) pre-trial psychotics, and (3) a pre-trial control group. Subjects were diagnosed by a team of psychologists and psychiatrists after the completion of clinical interviews, all psychological testing, collection of collateral data, and completion of the 30-day inpatient observation. This design clearly controlled for criticisms from past research by adhering to a consistent scoring method (Exner, 1991), by limiting the number of variables under investigation in accordance to the sample size, by choosing diagnosed malingerers, and by reporting on the psychological status of control groups.

Each Rorschach was administered by a staff psychologist or a supervised psychology intern. Rorschach protocols were scored in accordance with the Exner Comprehensive System (Exner, 1991). The scoring for each protocol was then computer analyzed by the Rorschach Interpretation Assistance Program (RIAP) (Exner, 1990) to provide ratios and percentages for the more than 130 scoring or coding ratios, indices, and percentages.

Null Hypotheses

1. There is no significant difference in the Schizophrenia Index (SCZI) score of the malingerer group when compared to the psychotic group and the control group.
2. There is no significant difference in the number of Popular responses (P) produced by the malingerer group when compared to the psychotic group and the control group.
3. There is no significant difference in the average number of responses (R) obtained by the malingerer group when compared with the psychotic group and the control group.
4. There is no significant difference in the lambda ratio obtained by the malingerer group when compared with the psychotic group and the control group.
5. There is no significant difference in the overall form quality (F+%) obtained by the malingerer group when compared to the psychotic group and the control group.
6. There is no significant difference in the total number of confabulations and inappropriate logic responses (CON + ALOG) obtained by the malingerer group when compared with the psychotic group and the control group.

7. There is no significant difference in the total number of Deviant Verbalizations and Deviant Responses (DV + DR) obtained by the malingering group when compared with the psychotic group and the control group.
8. There is no significant difference in the Weighted Sum of Six Special Scores (WSUM6) obtained by the malingering group when compared with the psychotic group and the control group.
9. A linear combination of these variables (SCZI, P, CON + ALOG, DV + DR, WSUM6, L, R, and F+%) will not significantly differentiate the malingering group, the psychotic group, and the control group.

Statistical Analysis

Hypothesis 1 was tested using Chi Square. Hypotheses 2 through 8 were tested using Analysis of Variance (ANOVA). Hypothesis 9 was tested using Discriminant Analysis. For all hypothesis tests, alpha = 0.05.

In order to investigate the validity of one further criticism, the supposed effect of the number of responses (R) on other ratios and percentages, Hypotheses 2, and 4-8 were retested using Analysis of Covariance (ANCOVA) with the number of responses as covariates. The computer analysis indicated whether the covariate was significant and made any necessary adjustments to the means.

CHAPTER FOUR

RESULTS

Introduction

This chapter presents the analysis of the data gathered from the Rorschach Projective Technique. The information presented includes descriptive statistics of the population, an explanation of the variable names used in the text, and the results from the testing of each hypothesis.

Demographic Data

Table 1 presents the frequency distribution of age for the malingerer group, the psychotic group, and the control group. The age of the subjects ranged from 19 to 65 (mean = 37.81). The control group obtained the highest group mean (mean = 38.33), followed by the psychotic group (mean = 37.90) and the malingerer group (mean = 37.00).

The frequency distribution of educational level for the malingerer group, the psychotic group, and the control group is presented in Table 2. The educational level for all of the subjects ranged from completion of the third grade to completion of a doctoral degree. The mean

Table 1

Frequency Distribution of Age for the Malingering Group, Psychotic Group, and Control Group

	Malingering (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
Age	f	f	f	f
19-29	6	5	8	19
30-39	7	13	10	30
40-49	6	8	5	19
50-59	4	3	6	13
60+	0	1	1	2

Table 2

Frequency Distribution of Educational Level for the Malingering Group, Psychotic Group, and Control Group

	Malingering (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
Grade	f	f	f	f
0-8	1	1	4	6
9-12	15	15	15	45
13-16	6	13	8	27
17+	1	1	3	5

educational level for the psychotic group (mean = 13.13) was higher than the mean obtained by both the malingerer group (mean = 12.61) and the control group (mean = 12.33).

The frequency distribution of the Full Scale intellectual quotient of the malingerer group, the psychotic group, and the control group is presented in Table 3. IQ scores of subjects, excluding invalid profiles, ranged from 78 to 140. The mean IQ for the control group (mean = 94.70) was higher than group IQ means obtained by the psychotic group (mean = 92.93) and the malingerer group (mean = 92.5).

Additional demographic data, including race, marital status, evaluation type, prior psychiatric history, prior criminal convictions, and number of Rorschach administrations necessary to obtain valid profiles, are presented in Table 4. Differences were evident among the three groups under investigation. Subjects from the psychotic group were less likely to be married, were most often evaluated for competency, and had the highest percentage of subjects with a psychiatric history (90%). The groups appeared similar in reporting prior criminal convictions and in the number of Rorschach administrations needed to obtain a valid profile in accordance with Exner (1989) instructions.

Table 3

Frequency Distribution of IQ for the Malingerer Group,
Psychotic Group, and Control Group

	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
IQ score	f	f	f	f
invalid	6	1	0	7
78-79	3	1	1	5
80-89	5	15	11	31
90-109	4	10	14	28
110-119	2	1	1	4
120+	3	2	3	8

Table 4

Background Information of Malingering Group, Psychotic Group, and Control Group

Variable	Malingering (n=23)		Psychotic (n=30)		Control (n=30)	
	F	%	F	%	F	%
Race						
White	14	61	17	57	23	77
Black	8	35	12	40	6	20
Other	1	4	1	3	1	3
Marital Status						
Married	7	30	3	10	9	30
Single	16	70	27	90	21	70
Study Type						
Competency	6	26	19	63	11	37
Responsibility	2	9	1	3	3	10
Both	15	65	10	33	16	53
Psychiatric His.	15	65	27	90	17	57
Criminal His.	12	52	17	57	16	53
Administrations of Rorschach						
1	20	90	28	93	28	93
2	3	10	2	7	2	7

Note. Single category includes separated, divorced, and widowed.

The frequency and percentage of Axis I diagnoses of the malingering group, the psychotic group, and the control group are presented in Table 5. In accordance with initial inclusion criteria, only subjects in the malingering group obtained an Axis I diagnosis of Malingering. Seventy percent of the psychotic group were diagnosed with either a schizophrenia or schizoaffective disorder. Although it was not part of the inclusion criteria, the diagnosis of Substance Abuse was the most common Axis I diagnosis for all subjects; 63% of the control group, 52% of the malingering group, and 27% of the psychotic group received this diagnosis.

The frequency and percentages of Axis II diagnoses of the malingering group, the psychotic group, and the control group are presented in Table 6. The diagnoses of Personality Disorder, Not Otherwise Specified (PD NOS) and Antisocial Personality Disorder were the most common Axis II diagnoses for all subjects. Although 83% of the malingering group received dual diagnoses on Axis I and Axis II, only 40% of the psychotic group and 47% of the control group received this type of dual diagnosis.

Data Analysis

Each null hypothesis is restated and the corresponding statistical analysis and results are presented. Table 7 provides an explanation of the variable acronyms.

Table 5

Frequency of Axis I Diagnoses of Malingering Group,
Psychotic Group, and Control Group

Diagnosis	Malingering (n=23)		Psychotic (n=30)		Control (n=30)	
	F	%	F	%	F	%
Malingering	23	100	0	0	0	0
Sub. Abuse	12	52	8	27	19	63
Adult Antisoc	4	17	0	0	3	10
Adjust. Disorder	4	17	0	0	5	17
Anxiety Disorder	2	9	0	0	2	7
Mood Disorder	1	4	3	10	9	30
Schizophrenia	0	0	14	47	0	0
Pyromania	1	4	0	0	0	0
Pedophilia	1	4	0	0	3	10
Schizoaffective	0	0	7	23	0	0
Delusional	0	0	6	20	0	0
No Axis I	0	0	0	0	5	17
Single Diagnosis	0	0	13	43	9	30
Dual Axis I	23	100	8	27	14	47

Table 6

Frequency of Axis II Diagnoses of Malingering Group,
Psychotic Group, and Control Group

Diagnosis	Malingering (n=23)		Psychotic (n=30)		Control (n=30)	
	F	%	F	%	F	%
Antisocial	10	43	4	13	4	13
PD NOS	3	13	7	23	12	40
Borderline	3	13	0	0	1	3
Narcissistic	2	9	0	0	1	3
Histrionic	2	9	0	0	0	0
Dependent	1	4	0	0	0	0
Schizoid	1	4	1	3	0	0
Dual Axis I/II	19	83	12	40	14	47

Table 7

Description of Variable Names

Acronym	Full Name
Group	Group (malingerer, psychotic, and control)
SCZI	Schizophrenia Index
P	Popular Responses
R	Number of Responses
L	Lambda
F+%	Conventional Pure Form Quality
CON + ALOG	Confabulations + Inappropriate Logic
DV + DR	Deviant Verbalizations + Deviant Responses
WSUM6	Weighted sum of the 6 special scores (deviant verbalizations, incongruous combinations, deviant responses, fabulized combinations, inappropriate logic, and contaminations)

Hypothesis 1

There is no significant difference in the Schizophrenia Index (SCZI) score of the malingerer group when compared to the psychotic group and the control group.

Chi Square Test of Independence: The Chi Square Test of Independence was conducted to examine Hypothesis 1, comparing Group (malingerer, psychotic, and control) to the values obtained on the Schizophrenia Index (SCZI). Table 8 is the contingency table for these data. No significant difference was found: $X^2 = 6.2083$ and $p = 0.7975$, whereas critical X^2 ($\alpha = .05$, $df = 10$) = 18.3.

Hypothesis 2

There is no significant difference in the number of Popular responses (P) produced by the malingerer group when compared to the psychotic group and the control group.

Analysis of Variance (ANOVA): Hypothesis 2 was tested by a one-way ANOVA. Table 9 provides the group means and standard deviations of P and R. Results from the one-way ANOVA are presented in Table 10. The findings suggest that there was a statistically significant difference ($F = 3.69$, $p = 0.029$) in the average number of Popular Responses produced by the malingerer group, the psychotic group, and the control group. A Neuman-Keul's Test was

Table 8

Chi Square Test of Independence Contingency Table
Comparing Group by SCZI

SCZI	Malinge (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	f	f	f	f
0	4 (17.4)	7 (23.3)	10 (33.3)	21 (25.3)
1	7 (30.4)	9 (30.0)	10 (33.3)	26 (31.3)
2	7 (30.4)	5 (16.7)	5 (16.7)	17 (20.5)
3	2 (8.7)	2 (6.7)	2 (6.7)	6 (7.2)
4	1 (4.3)	5 (16.7)	2 (6.7)	8 (9.6)
5	2 (8.7)	2 (6.7)	1 (3.3)	5 (6.0)

Note. Figure in () is percentage of column total.

Table 9

Table of Group Means and Standard Deviations of P and R

Variable	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	mean (std)	mean (std)	mean (std)	mean (std)
P	4.48 (2.19)	5.93 (1.93)	5.8 (2.17)	5.48 (2.16)
R	19.04 (0.50)	21.50 (1.00)	23.0 (0.76)	21.36 (0.82)

Table 10

One-Way ANOVA Table for Group by P

Source	DF	SS	MS	F	P
Group	2	32.32	16.16	3.69	0.029
Error	80	350.40	4.38	--	--
Total	82	382.72	--	--	--

performed to investigate the direction of significance. Table 11 presents the table of contrasts. Results indicate that the malingerer group, with a mean of 4.48, obtained a statistically lower number of Popular responses than either the psychotic group (mean = 5.93) or the control group (mean = 5.8).

Analysis of Covariance (ANCOVA): Due to concerns about the effect caused by the varying number of responses, analysis of covariance was used to retest Hypothesis 2 in an attempt to control for any variability resulting from the number of responses. The test of homogeneity of regression was supported: $F = 1.14$; critical $F (df = 10, 3) = 3.71$. Results of the ANCOVA are presented in Table 12. The co-variate R was not determined to be significant ($F = 1.47, p = 0.228$). The adjusted means were as follows: the malingerer group = 4.57, the control group = 5.73, and the psychotic group = 5.93. As Table 12 indicates, the difference between the adjusted means was not significant.

Hypothesis 3

There is no significant difference in the average number of responses obtained by the malingerer group when compared with the psychotic group and the control group.

Table 11

Neuman-Keul's Table of Contrasts for Group by P

Group Mean	Malinge $x_m = 4.48$	Control $x_c = 5.80$	Psychotic $x_p = 5.93$
$x_m = 4.48$	--	1.32 *	1.45 *
$x_c = 5.80$	--	--	0.13
$x_p = 5.93$	--	--	--

Table 12

ANCOVA Table for Group by P with Covariate R

Source	DF	SS	MS	F	P
R	1	6.41	6.41	1.47	0.228
Group	2	26.07	13.04	2.99	0.055
Error	79	343.99	4.35	--	--
Total	82	382.72	--	--	--

Analysis of Variance: This hypothesis was tested by a one-way ANOVA. Table 13 provides the group means and standard deviations of R. Results from the one-way ANOVA are presented in Table 14. The results suggest that there was no statistically significant difference ($F = 2.01$, $p = 0.140$) in the mean number of Responses produced by the malingerer group, psychotic group, and control group.

Hypothesis 4

There is no significant difference in the lambda ratio obtained by the malingerer group when compared with the psychotic group and the control group.

Analysis of Variance: Hypothesis 4 was tested with a one-way ANOVA. The group means and standard deviations of lambda and R may be found in Table 15. Results from the one-way ANOVA are presented in Table 16. The findings suggest that there was no statistically significant difference ($F = 2.09$, $p = 0.130$) in the lambda ratio produced by the malingerer group, psychotic group, and control group.

Analysis of Covariance: Hypothesis 4 was retested with ANCOVA to address concerns about the effect caused by the varying number of responses. The test of homogeneity of regression was supported: $F = 2.897$; critical F ($df = 30, 3$) = 2.92. Results of the ANCOVA are presented in Table 17. The co-variate R was not determined to be

Table 13

Table of Group Means and Standard Deviations of R

	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
Variable	mean (std)	mean (std)	mean (std)	mean (std)
R	19.04 (0.50)	21.50 (1.00)	23.0 (0.76)	21.36 (0.82)

Table 14

One-Way ANOVA Table for Group by R

Source	DF	SS	MS	F	P
Group	2	204.70	102.35	2.01	0.140
Error	80	4068.48	50.86	--	--
Total	82	4273.18	--	--	--

Table 15

Table of Group Means and Standard Deviations of L and R

	Malingering (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
Variable	mean (std)	mean (std)	mean (std)	mean (std)
L	1.02 (2.24)	2.06 (3.39)	1.05 (1.17)	1.41 (2.23)
R	19.04 (0.50)	21.50 (1.00)	23.00 (0.76)	21.36 (0.82)

Table 16

One-Way ANOVA Table for Group by L

Source	DF	SS	MS	F	P
Group	2	20.28	10.14	2.09	0.130
Error	80	387.78	4.85	--	--
Total	82	408.06	--	--	--

Table 17

ANCOVA Table for Group by L with Covariate R

Source	DF	SS	MS	F	P
R	1	1.26	1.26	0.26	0.613
Group	2	20.15	10.08	2.06	0.134
Error	79	386.51	4.89	--	--
Total	82	408.06	--	--	--

significant ($F = 0.26$, $p = 0.613$). The adjusted means were as follows: the psychotic group = 2.06, the malingering group = 1.06, and the control group = 1.02. The difference among these adjusted means was not significant.

Hypothesis 5

There is no significant difference in the overall form quality ($F+$) obtained by the malingering group when compared to the psychotic group and the control group.

Analysis of Variance: This hypothesis was tested by a one-way ANOVA. The group means and standard deviations of $F+$ and R are presented in Table 18. Results from the one-way ANOVA are presented in Table 19. These findings suggest that there was no statistically significant difference ($F = 0.72$, $p = 0.492$) in the overall form quality produced by the malingering group, psychotic group, and control group.

Analysis of Covariance: Analysis of covariance was used to retest Hypothesis 5 in an attempt to control for any variability resulting from the number of responses. The test of homogeneity of regression was supported: $F = 1.364$; critical F ($df = 34, 3$) = 2.90. Results of the ANCOVA are presented in Table 20. The co-variate R was determined to be statistically significant ($F = 6.57$, $p = 0.012$). Despite controlling for the effect of the number

Table 18

Table of Group Means and Standard Deviations of F+% and R

Variable	Malingering (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	mean (std)	mean (std)	mean (std)	mean (std)
F+%	0.54 (0.22)	0.60 (0.23)	0.61 (0.30)	0.59 (0.22)
R	19.04 (0.50)	21.50 (1.00)	23.00 (0.76)	21.36 (0.82)

Table 19

One-Way ANOVA Table for Group by F+%

Source	DF	SS	MS	F	P
Group	2	0.06	0.03	0.72	0.492
Error	80	3.75	0.05	--	--
Total	82	3.82	--	--	--

Table 20

ANCOVA Table for Group by F+% with Covariate R

Source	DF	SS	MS	F	p
R	1	0.29	0.29	6.57	0.012
Group	2	0.13	0.07	1.54	0.221
Error	79	3.46	0.04	--	--
Total	82	3.82	--	--	--

of responses, there was no statistically significant difference ($F = 1.54$, $p = 0.221$) in the overall form quality produced by the malingerer group, psychotic group, and control group. The adjusted means were as follows: control group = 0.62, psychotic group = 0.60, and the malingerer group = 0.52.

Hypothesis 6

There is no significant difference in the total number of confabulations and inappropriate logic responses (CON + ALOG) obtained by the malingerer group when compared with the psychotic group and the control group.

Analysis of Variance: Hypothesis 6 was tested by a one-way ANOVA. The group means and standard deviations for CON + ALOG and R are presented in Table 21. Results from the one-way ANOVA are presented in Table 22. These findings suggest that there was no statistically significant difference ($F = 0.58$, $p = 0.562$) in the total number of CON + ALOG responses produced by the malingerer group, psychotic group, and control group.

Analysis of Covariance: Hypothesis 6 was retested with ANCOVA to address concerns about the effect caused by the varying number of responses. The test of homogeneity of regression was supported: $F = 1.882$; critical F ($df = 10, 3$) = 3.71. Results of the ANCOVA are presented in Table 23. The co-variate R was not determined to be

Table 21

Table of Group Means and Standard Deviations of CON + ALOG and R

Variable	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	mean (std)	mean (std)	mean (std)	mean (std)
CON + ALOG	0.30 (1.75)	0.40 (0.93)	0.57 (1.00)	0.43 (1.22)
R	19.04 (0.50)	21.50 (1.00)	23.00 (0.76)	21.36 (0.82)

Table 22

One-Way ANOVA Table for Group by CON + ALOG

Source	DF	SS	MS	F	P
Group	2	0.95	0.47	0.58	0.562
Error	80	65.44	0.82	--	--
Total	82	66.38	--	--	--

Table 23

ANCOVA Table for Group by CON + ALOG with Covariate R

Source	DF	SS	MS	F	P
R	1	1.98	1.98	2.46	0.121
Group	2	0.44	0.22	0.28	0.759
Error	79	63.46	0.80	--	--
Total	82	66.39	--	--	--

significant ($F = 2.46, p = 0.121$). The adjusted means are as follows: control group = 0.52, psychotic group = 0.40, and the malingerer group = 0.36. The adjusted means were not significantly different.

Hypothesis 7

There is no significant difference in the total number of Deviant Verbalizations and Deviant Responses (DV + DR) obtained by the malingerer group when compared with the psychotic group and the control group.

Analysis of Variance: This hypothesis was tested with a one-way ANOVA. Table 24 presents the group means and standard deviations of DV + DR and R. Results from the one-way ANOVA are presented in Table 25. The findings suggest that there was no statistically significant difference ($F = 0.01, p = 0.995$) in the total number of DV + DR responses produced by the malingerer group, psychotic group, and control group.

Analysis of Covariance: Analysis of covariance was used to retest Hypothesis 7 in an attempt to control for any variability resulting from the number of responses. The test of homogeneity of regression was supported: $F = 1.683$; critical $F (df = 16, 3) = 3.24$. Results of the ANCOVA are presented in Table 26. The co-variate R was determined to be statistically significant ($F = 6.53, p = 0.012$). Despite controlling for the effect of the number

Table 24

Table of Group Means and Standard Deviations of DV + DR and R

Variable	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	mean (std)	mean (std)	mean (std)	mean (std)
DV + DR	1.26 (1.89)	1.30 (3.18)	1.33 (2.42)	1.30 (2.57)
R	19.04 (0.50)	21.50 (1.00)	23.00 (0.76)	21.36 (0.82)

Table 25

One-Way ANOVA Table for Group by DV + DR

Source	DF	SS	MS	F	P
Group	2	0.07	0.03	0.01	0.995
Error	80	539.40	6.74	--	--
Total	82	539.47	--	--	--

Table 26

ANCOVA Table for Group by DV + DR with Covariate R

Source	DF	SS	MS	F	P
R	1	41.16	41.16	6.53	0.012
Group	2	1.32	0.66	0.10	0.900
Error	79	498.24	6.31	--	--
Total	82	539.47	--	--	--

of responses, there was no statistically significant difference ($F = 0.10$, $p = 0.900$) in the overall form quality produced by the three groups. The adjusted means were as follows: malingerer group = 1.49, psychotic group = 1.29, and the control group = 1.17.

Hypothesis 8

There is no significant difference in the Weighted Sum of Six Special Scores obtained by the malingerer group when compared with the psychotic group and the control group.

Analysis of Variance: Hypothesis 8 was tested with a one-way ANOVA. Table 27 provides the group means and standard deviations of WSUM6 and R. Results from the one-way ANOVA are presented in Table 28. The results suggest that there was no statistically significant difference ($F = 0.08$, $p = 0.924$) in the WSUM6 score produced by the malingerer group, psychotic group, and control group.

Analysis of Covariance: Analysis of covariance was used to retest Hypothesis 8 in an attempt to control for any variability resulting from the number of responses. The test of homogeneity of regression was supported: $F = 1.86$; critical F ($df = 44, 3$) = 2.83. Results of the ANCOVA are presented in Table 29. The co-variate R was determined to be statistically significant ($F = 7.93$, $p = 0.006$). Despite controlling for the effect of R, there

Table 27

Table of Group Means and Standard Deviations of WSUM6 and R

Variable	Malinger (n=23)	Psychotic (n=30)	Control (n=30)	Total (n=83)
	mean (std)	mean (std)	mean (std)	mean (std)
WSUM6	6.00 (7.63)	6.97 (13.86)	7.07 (8.13)	6.73 (10.35)
R	19.04 (0.50)	21.50 (1.00)	23.00 (0.76)	21.36 (0.82)

Table 28

One-Way ANOVA Table for Group by WSUM6

Source	DF	SS	MS	F	P
Group	2	17.34	8.67	0.08	0.924
Error	80	8766.83	109.58	--	--
Total	82	8784.17	--	--	--

Table 29

ANCOVA Table for Group by WSUM6 with Covariate R

Source	DF	SS	MS	F	P
R	1	799.47	799.47	7.93	0.006
Group	2	7.24	3.62	0.04	0.965
Error	79	7967.36	100.85	--	--
Total	82	8784.17	--	--	--

was no statistically significant difference ($F = 0.04$, $p = .965$) in the WSUM6 score produced by the malingerer group, psychotic group, and control group. Adjusted means were as follows: malingerer group = 7.03, psychotic group = 6.90, and the control group = 6.34.

Hypothesis 9

A linear combination of these variables (SCZI, P, CON + ALOG, DV + DR, WSUM6, L, R, and F+%) will not significantly differentiate the malingerer group, the psychotic group, and the control group.

Discriminant Analysis: Hypothesis 9 was tested using discriminant analysis. This hypothesis was rejected, but there was only one significant variable which contributed to the differentiation. The results suggest that only P was useful in discriminating between the malingerer group, the psychotic group and the control group (weight of P = 3.7, Wilks lambda = 0.92). The discriminant function mean for the malingerer group was 1.10; the discriminant function mean for the psychotic group was 1.48; and the discriminant function mean for the control group was 1.41. The classification of the malingerer group, the psychotic group, and the control group is presented in Table 30. The results suggest that when using P to differentiate groups, 38 of 83 subjects (45.8%) were correctly classified. From the malingerer group, 73.9% of the

Table 30

Classification Table

Actual	Classified			Total
	Malingering	Psychotic	Control	
Malingering	17	2	4	23
Psychotic	11	12	7	30
Control	15	6	9	30

subjects (17 out of 23) were accurately classified. Only 40% of those from the psychotic group (12 of 30), and 30% of the control group (9 of 30) were accurately classified. Adding L, the best of the remaining variables, to the discriminant function reduced the overall prediction accuracy to 24.1% (20 of 83). Using both L and P in discriminant function, only 39.1% (9 of 23) of the malingering group, 43.3% (13 of 30) of the psychotic group, and 20% (6 of 30) of the control group were accurately classified.

Summary of Hypothesis Testing

In this study, the Chi Square test of independence, analysis of variance, analysis of covariance, and discriminant analysis were performed to test a set of 9 hypotheses.

No significance was discovered after examining Hypothesis 1 by the Chi Square test of independence.

Analysis of variance was used to examine Hypotheses 2-8. Table 31 summarizes the ANOVA results. A statistically significant difference at the .05 level was found only for Popular responses. Subjects in the malingering group produced fewer Popular responses (mean = 4.48) than either the psychotic group (mean = 5.8) or control group (mean = 5.9). No other significant differences were discovered using analysis of variance.

Table 31

One-Way ANOVA Results Comparing P, R, L, F+%, CON + ALOG, DV + DR, and WSUM6 by Group

Variable	F-ratio	P	Significance
P	3.69	0.029	s
R	2.01	0.140	ns
L	2.09	0.130	ns
F+%	0.72	0.492	ns
CON + ALOG	0.58	0.562	ns
DV + DR	0.01	0.995	ns
WSUM6	0.08	0.924	ns

Note. s = significant; ns = nonsignificant.

Hypothesis 2 and 4-8 were retested using analysis of covariance. Table 32 presents a summary of these findings. For each ANCOVA analysis, the total number of responses was designated as the covariate. Three variables were affected by the total number of responses: F+%, DV + DR, and WSUM6. After controlling for the effects of the total number of responses, no statistically significant differences were found.

Using discriminant analysis, the three groups of malingerer, psychotic, and control were optimally differentiated by the total number of Popular responses each subject produced. Overall prediction accuracy for the 83 subjects was 45.8%. Specifically for the malingerer group, differentiation by the total number of Popular responses accurately classified 73.9% (17 out of 23) of the malingerers.

Of the variables under investigation, only the Popular responses statistically revealed significance in differentiating the malingerer group, the psychotic group, and the control group. When the number of responses was adjusted for, a significant difference was no longer present.

Table 32

ANCOVA Covariate Significance and Results Comparing F+%, DV + DR, and WSUM6 by Group

Variable	CovP	Sig	F-ratio	P	Sig
P	0.23	ns	2.99	0.056	ns
L	0.61	ns	2.06	0.134	ns
F+%	0.01	s	1.54	0.221	ns
CON + ALOG	0.12	ns	0.28	0.759	ns
DV + DR	0.01	s	0.10	0.900	ns
WSUM6	0.01	s	0.04	0.965	ns

Note. s = significant; ns = nonsignificant.

CHAPTER FIVE

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary

Problem and Purpose

The exact incidence of malingering among criminal defendants undergoing pre-trial forensic evaluations is unknown. Estimates have placed the number somewhere between 14% and 41% (Grossman & Wasyliv, 1988; Rogers, 1986). The impact of malingerers on the legal system has made malingering a significant clinical and legal issue. Therefore, much research has been conducted to investigate methods of detection, including objective measurements, projective techniques, and clinical interviews. The purpose of this study was to investigate the ability of specific variables of the Rorschach Projective Technique to detect malingering.

Sample

The population chosen for the present study was restricted to male pre-trial defendants in the Federal Judicial system. The 83 subjects were divided into three categories: (1) individuals diagnosed as malingering

psychotic symptoms, (2) individuals diagnosed with a psychotic disorder, and (3) individuals not receiving a diagnosis associated with malingering or a psychotic disorder. Each subject was under 24-hour-per-day observation for a period of no less than 30 days and participated in clinical interviews, psychological testing, and group activities.

Procedures

This study examined the usefulness of the Rorschach to identify a pattern of differentiation for malingered psychotic protocols from other protocols. Eighty-three Rorschach protocols, adhering to the Exner Comprehensive System (1989), were collected. Specific variables examined included: (1) the total number of responses, (2) the number of Popular responses, (3) the lambda ratio which examines the frequency of pure form responses to all responses, (4) conventional pure form, (5) the Schizophrenia Index, (6) the Weighted Sum of Six Special Scores, (7) the deviant verbalizations added to the deviant responses, and (8) confabulated responses added to inappropriate logic responses. The statistical analysis procedures used to analyze the data generated by the three groups included Chi Square test of independence, analysis of variance, analysis of covariance, and discriminant analysis.

Findings and Discussion

The findings of this study are summarized by considering each of the nine null hypotheses. Each null hypothesis is restated, the statistical results are reviewed, and the results are discussed.

Hypothesis 1

There is no significant difference in the Schizophrenia Index (SCZI) score of the malingerer group when compared to the psychotic group and the control group.

This hypothesis, examined with the Chi Square test of independence, was retained. No significant differences were found between the scores obtained by the malingerer group, the psychotic group, and the control group on the Schizophrenia Index. The malingerer group produced a mean of 1.78, the psychotic group produced a mean of 1.83, and the control group produced a mean of 1.30.

Exner (1986) reported that the Schizophrenia Index accurately identified 75-85% of schizophrenics (i.e., they obtained a score of 4 or above on the SCZI). In this study, only 7 subjects from the psychotic group obtained a score of 4 or above, whereas 3 subjects from the malingerer group and 3 subjects from the control group also obtained a score of 4 or greater.

Possible explanations for the difference between the results of this study and Exner's (1986) include the diagnoses of the psychotic group and the amount of psychiatric exposure of the subjects in this present study. In this study, less than 50% of the subjects in the psychotic group were diagnosed as schizophrenic. Only 47% received that diagnosis, whereas 23% were diagnosed as schizoaffective, and 30% were diagnosed with a delusional disorder. Additionally, 65% of subjects in the malingerer group and 57% of subjects in the control group reported a psychiatric history.

Agreeing with the lack of significant difference between groups found in this study, Perry and Kinder (1990) reported that in their study 20-25% of the subjects instructed to malingering obtained a score of 4 or greater on the SCZI scale. Additionally, Exner (1989) reported that 1 out of 12 malingerers were able to obtain a score of 4 or above on the SCZI scale. In this study, 3 out of 23 malingerers (13%) obtained a score of 4 or above.

Hypothesis 2

There is no significant difference in the number of Popular responses (P) produced by the malingerer group when compared to the psychotic group and the control group.

This hypothesis was tested by analysis of variance and analysis of covariance to control for any variability resulting from differing number of responses. The hypothesis was rejected when using analysis of variance, but it was retained when using analysis of covariance. The results demonstrated that there was a significant difference in the total number of Popular responses produced by the malingerer group, the psychotic group, and the control group. However, when controlling for the variance produced by the number of responses, there was no significant differences between groups. In this study, the malingerer group ranged from 0 to 9 in the total of popular responses with a mean of 4.487. This was significantly lower than the mean of 5.8 obtained by the psychotic group (range = 3-10), the mean of 5.9 for the control group (range = 3-12), and the mean of 6.9, which Exner (1989) reported for non-patient males.

This finding that the malingerers obtained a lower number of popular responses, even if not significantly different from the other groups at the 0.05 level, has been widely supported by research. Benton (1945) was the first to report the lower number of popular responses with subjects attempting or instructed to mangle, followed by reports from Feldman and Graley (1954), Easton and Feigenbaum (1967), Bash (1978), and Seamons et al. (1981).

It is assumed that subjects who are malingering respond to each card as they think a person with a diagnosed psychiatric disorder would, and they attempt to ignore easier and more popular responses.

Hypothesis 3

There is no significant difference in the average number of responses (R) obtained by the malingerer group when compared with the psychotic group and the control group.

This hypothesis was tested with analysis of variance and was retained. No real differences were found between the total number of responses produced by subjects from the malingerer group, the psychotic group, and the control group. In examining the number of responses produced by each group, subjects in the malingerer group ranged between 14 and 29 responses with a mean of 19.04; subjects from the psychotic group produced between 14 and 56 responses with a mean of 21.5; and subjects from the control group produced between 15 and 40 responses with a mean of 23.

While in this study the mean obtained by the malingerer group was somewhat lower, it was not significantly reduced. This finding of the study greatly differed from what has been reported in the literature. Most research findings reported a reduction in the total

number of responses given by malingerers (Benton, 1945; Drob & Berger, 1987; Easton & Feigenbaum, 1967). Bash (1978) also suggested that a high rejection of cards (which therefore led to fewer responses) was common among malingerers. In this study, only valid protocols were scored (i.e., protocols with 14 responses). Among the 83 protocols collected, 7 were the result of a second administration (Exner, 1989). Three of these subjects producing the invalid protocols were from the malingerer group, and the other 4 were divided evenly between the psychotic group and the control group.

One explanation for the difference in findings involves the environmental influences on the subject. Drob and Berger (1987) suggest that unfamiliar surroundings tend to inhibit behavior. In this study, each subject was a pre-trial defendant undergoing a forensic examination pursuant to a court order. Additionally, each subject was housed in the mental health unit at a Federal Correctional Institute and was being examined by employees of the Bureau of Prisons, not by an independent psychologist. All subjects in this situation were in an unfamiliar environment and this may have constricted their behavior. Additionally, many subjects in this study had prior criminal convictions and may not have been invested in complying with testing procedures.

We might hypothesize that if there was consistent constriction, due to the environment, across the groups, some significant differences between the groups would still be present. Since malingerers are already viewed as constricting their behavior to present a desired image, when they are placed into an unfamiliar environment, the amount of change in constriction might not increase as significantly as in other subjects who are not malingering.

Hypothesis 4

There is no significant difference in the lambda ratio obtained by the malingerer group when compared with the psychotic group and the control group.

This hypothesis was tested with analysis of variance and then analysis of covariance to control for any variability produced by the total number of responses. This hypothesis was retained. There was no significant difference between the lambda ratio obtained by subjects from the malingerer group, the psychotic group, and the control group. Although the lambda ratio produced by the psychotic group (mean = 2.06) was higher than either the malingerer group (mean = 1.02) or the control group (mean = 1.05), the difference was not statistically significant.

Although not significant, the higher score of the psychotic group is consistent with previous research. The

higher score for the psychotic group supports the research which indicated that a lambda score greater than 1.2 for adults suggests that most responses are simplistic and neglect the complexity of the stimulus field (Exner, 1989). Neither the malingerer group nor the control group obtained a lambda ratio above 1.2. Additionally, Seamons et al. (1981) reported that malingerers obtained a lambda ratio within the normal range and only the psychiatric population's lambda ratio was elevated.

Hypothesis 5

There is no significant difference in the overall form quality (F+) obtained by the malingerer group when compared to the psychotic group and the control group.

This hypothesis was tested by analysis of variance and analysis of covariance to control for any variability added by the number of responses. The hypothesis was retained. There was no significant difference between the ratio obtained by the malingerer group, the psychotic group, and the control group even after the variance created by the number of responses was controlled. Although the malingerer group obtained the lowest overall form quality (malingerer group mean = 0.54; psychotic group mean = 0.60, control group mean = 0.62), the mean was higher than reported by Exner for inpatient schizophrenics (mean = 0.40) (Exner, 1989).

As many researchers who have studied malingering report, malingerers tend to have good form quality but use bizarre wording (Exner & Wylie, 1975; Pettigrew et al., 1983). Seamons et al. (1981) suggested that malingerers could be detected through their normal lambda ratios, F+'s, and X+'s.

Subjects from the psychotic group obtained a higher mean than the mean reported by Exner (1989) for inpatient schizophrenics. One reason for this disparity in the findings between this study and the Exner (1989) study was the difference in the diagnoses of the subjects. Additionally, the effects of medication on the protocols produced by those diagnosed with a psychotic disorder were unknown.

Hypothesis 6

There is no significant difference in the total number of confabulations and inappropriate logic responses (CON - ALOG) obtained by the malingerer group when compared with the psychotic group and the control group.

This hypothesis was tested with analysis of variance and analysis of covariance to control for any variability resulting from the number of responses. The hypothesis was retained. The special scores of confabulated responses and inappropriate logic responses were combined for statistical analysis since they represent more

significant difficulties with cognitive processing. After the variability produced by the number of responses was controlled for, the control group obtained the highest average of these responses (mean = 0.53), whereas the psychotic group obtained an average of 0.397 and the malingering group obtained an average of 0.355. Exner (1989) reported that on the confabulation score, nonpatient males obtained a 0 on this scale.

In this study, 1 subject from the malingering group obtained a value greater than 0 on the confabulation score. Again, other researchers have noted the recurrence of good form quality and bizarre wording by malingerers (Exner, 1974; Pettigrew et al., 1983). Overton (1984) stated that informed fakers produced protocols too pronounced to be believed. In contrast, in this study, only 3 subjects from the psychotic group obtained any confabulation score and no subjects from the control group received this score.

Hypothesis 7

There is no significant difference in the total number of Deviant Verbalizations and Deviant Responses (DV + DR) obtained by the malingering group when compared with the psychotic group and the control group.

This hypothesis was tested with analysis of variance and analysis of covariance to control for any variability

produced by the number of responses. The hypothesis was retained. Deviant verbalizations and deviant responses were combined for statistical analysis since they are the most commonly scored special scores and represent minor difficulties with cognitive processing. Again, after controlling for the variability produced by the number of responses, the malingering group obtained the highest average (mean = 1.494) when compared to the psychotic group (mean = 1.286) and the control group (mean = 1.168).

Based on Exner (1989), we would have expected a difference between the control group and the other two groups at a minimum. Some reasons for this lack of difference center on the idea that these types of cognitive slippages represent minor difficulties. Subjects from the psychotic group may reveal these slippages as part of their normal conversational patterns, whereas malingering subjects may attempt to intentionally produce bizarre wording (Exner & Wylie, 1975; Pettigrew et al., 1983; Seamons et al., 1981). Drob and Berger (1987) also theorized that criminal populations produce more deviant verbalizations and deviant responses when compared to the general population. They stated that these increases in minor difficulties in cognitive processing were due to the criminals' lack of adherence to societal rules and norms which also influences vocabulary and

speech patterns. All subjects in this study were criminal defendants.

Hypothesis 8

There is no significant difference in the Weighted Sum of Six Special Scores (WSUM6) obtained by the malingerer group when compared with the psychotic group and the control group.

This hypothesis was tested with analysis of variance and analysis of covariance to control for any variance resulting from the number of responses. The hypothesis was retained. All three groups appeared similar with results of the Weighted Sum of Six Special Scores. The malingerer group obtained the highest average, after controlling for the variability produced by R, with a mean of 7.03. The psychotic group closely followed with a mean of 6.90, and the control group produced a mean of 6.34. Exner (1989) reported that nonpatient males obtained a mean of 3.34 on this scale, whereas male inpatient schizophrenics obtained a mean of 44.69.

Again, in this study, the psychotic group mean was much lower than that reported by Exner (1989). This difference may be influenced by the composition of the subjects in the psychotic group. In this study, less than 50% of the subjects in the psychotic group received the diagnosis of schizophrenia, as compared to Exner's group.

Also, the mean score obtained by the malingerer group was greater than the score obtained by the other two groups, but was not significantly different. This higher score may also be due to the malingerer's attempt to appear psychotic by using bizarre phrases (Exner & Wylie, 1975; Pettigrew et al., 1983; Seamons et al., 1981).

Hypothesis 9

A linear combination of these variables (SCZI, P, CON + ALOG, DV + DR, WSUM6, L, R, and F+%) will not significantly differentiate the malingerer group, the psychotic group, and the control group.

This hypothesis was tested by discriminant analysis and was rejected, but only one of the predictor variables was significant in this differentiation between the malingerer group, the psychotic group, and the control group. The results suggest that when attempting to differentiate groups using only the total number of Popular responses, 45.8% (38 of 83) of all subjects were correctly classified, including 17 out of the 23 (73.9%) from the malingerer group.

Albert et al. (1980) found that in their study, 72% of informed fakers were diagnosed psychotic, 46% of uninformed fakers were diagnosed psychotic, and only 42% of the schizophrenic patients were diagnosed psychotic. After using discriminant analysis in this study, only 2 of

the malingerers (9%) were categorized as psychotic, 6 subjects from the control group were categorized as psychotic (20%), and 12 subjects from the psychotic group (40%) were categorized as psychotic.

Again, less than half of the subjects in the psychotic group were diagnosed as schizophrenic. The differences between the psychotic disorders of schizophrenia, schizoaffective disorder, and delusional disorder and resulting responses to the Rorschach process may have affected the classification accuracy. Subjects diagnosed as schizophrenic exhibited pronounced psychotic symptoms, a disturbance in either work or social areas, and a decrease in self-care. The subjects diagnosed as schizoaffective also displayed psychotic symptoms but displayed more emotional features. Those subjects with delusional disorders were involved with nonbizarre delusions, and psychotic symptoms, while present, were not prominent. The ability of individuals with these diagnoses to attend to the tasks on the Rorschach varied with the amount of current psychosis and emotional disturbance.

In addition, many subjects in this study had more than one diagnosis, and some diagnoses were present in each of the three study groups. For example, all of the subjects in the malingerer group had either a dual Axis I diagnosis

or both an Axis I and an Axis II diagnosis. The groups in this study did not consist of subjects instructed to respond in a certain manner and therefore were not as clearly differentiated. Despite this difficulty, when using only the number of popular responses to differentiate the three groups, 73.9% of the malingerers were classified accurately. No other variables which were added to the discriminant equation increased the classification accuracy.

Implications and Recommendations

The findings of this study have implications for the use of the Rorschach Projective Technique in forensic work to assist in the identification of malingering. Additionally, the results of this study suggest several recommendations regarding future research in this area.

Implications

The findings of this study suggest that of the Rorschach variables investigated, malingerers can only be differentiated by the low number of popular responses they produce. Using discriminant analysis, 73.9% of the malingerers were accurately identified. Although other differences were present, such as greater group means for the special scores, these differences were not significant.

Despite the retention of most of this study's null hypotheses, there were some descriptive differences between subjects in the malingerer group, the psychotic group, and the control group.

Differences between groups in the reported psychiatric history were found. Ninety percent of the psychotic group reported a psychiatric history, whereas only 65% of the malingerer group and 57% of the control group reported a psychiatric history. Additionally, differences were found regarding the study type requested by the courts. Sixty-five percent of the malingerer group and 57% of the control group had been referred for both competency and responsibility evaluations, whereas 63% of the psychotic group were referred solely for competency evaluations.

Recommendations for Future Research

Based on the implementation and the results of this study, several recommendations are made for further research in this area.

1. Studies examining malingerers outside the criminal population would provide helpful information and comparative data. Although these subjects would be more difficult to locate and test, subjects may feel less uncomfortable with the testing procedure than do criminal defendants.

2. Future researchers in this area may wish to further restrict inclusion in the study based on each subject's Full Score intelligence quotient, limiting subjects to those who fall within certain intellectual functioning ranges. In this study, subjects with an IQ of less than 80 were accepted if there was evidence of high-school completion or a General Equivalence Diploma was earned. At the other end, subjects were included with IQs of 130+.
3. Another suggestion for further research is to identify the extent of each subject's knowledge of psychiatric disorders and knowledge of behaviors exhibited by those with mental disorders. This information, along with research findings for informed malingerers, could be investigated to determine the influence of prior knowledge and exposure to the Rorschach protocols.
4. Other Rorschach variables should be investigated to determine if they can assist in the accurate detection of malingering. For example, the content area of the responses could be investigated. Seamons et al. (1981) reported that direct instructions to alter protocols produced changes in content areas but did not appear to overly alter the percentages and ratios.

APPENDIX A
BUREAU OF PRISONS APPROVAL FOR RESEARCH



U.S. Department of Justice

Federal Bureau of Prisons

Washington, DC 20534

May 5, 1994

MEMORANDUM FOR G.L. INGRAM, REGIONAL DIRECTOR, MARO

FROM:  Thomas R. Kane, Assistant Director, IPPA

SUBJECT: Research Proposal of Kristin Batchelder

This is in response to a request by Kristin Batchelder, Psychology Postdoctoral Fellow, FPC Alderson, to conduct a study entitled "Detection of Malingered Psychotic Symptoms with the Rorschach Projective Technique" at FCI Butner.

We concur with your recommendation for approval, and Ms. Batchelder is authorized to proceed with the study, provided that it does not interfere with institution operations.

Any questions that arise may be directed to Gerry Gaes, Chief, Office of Research and Evaluation, at (202) 724-3118.

cc: John T. Hadden, Warden, FCI Butner
Vicki Verdeyen, Psychology Services Administrator, MARO
Bernadette Pelissier, Institution Research Committee
Coordinator, FCI Butner
Kristin Batchelder, Psychology Postdoctoral Fellow, FPC
Alderson

APPENDIX B
PROPOSAL SUBMITTED TO BUREAU OF PRISONS

Detection of Malingered Psychotic Symptoms with
the Rorschach Projective Technique

A Research Proposal

Submitted by:

Kristin Batchelder, B.A.
Psychology Intern

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Detection of Malingered Psychotic Symptoms with the Rorschach Projective Technique

A Research Proposal

Criminal defendants may be strongly motivated to avoid prosecution by appearing mentally ill (Cornell and Hawk, 1989; Resnick, 1984) and the malingering of psychotic symptoms is of special concern because psychosis indicates a serious mental disturbance that is commonly used to support some type of insanity defense. In studies of insanity defendants, 14 - 41% clearly malingered (Grossman and Wasyliv, 1988; Rogers, 1986a), making malingering an important clinical and legal issue. An inaccurate diagnosis of malingering is likely to damage the defendant's credibility, place a defendant in legal jeopardy, and deny necessary mental health treatment. Much research has been conducted to determine accurate methods to detect malingering, these include Clinical Interviews, Structured Personality Tests (MMPI), Intelligence Tests, and Projective Tests.

Literature Review on the Detection of Malingering

The existing studies on the detection of malingered psychotic symptoms are inconsistent in reporting success rates with psychological measurements and clinical interviews. Cornell and Hawk (1989) reported 89.1% accuracy for classifying psychotic and malingered psychotic cases based solely on clinical presentation variables. Yet other studies have stated that psychologists do not perform better than chance when detecting malingering or deception (Ekman and O'Sullivan, 1991; Ogloff, 1990) even when psychological testing data is provided (Albert, Fox, and Kahn, 1980). Many studies have examined the ability of the MMPI to detect malingering with agreement that scales F, F-K, Ds, and some type of Obvious-Subtle ratio are most useful (Berry, Baer, & Harris, 1991; Lees-Haley and Fox, 1990; Walters, 1988; Wasyliv, Grossman, Haywood, & Cavanaugh, 1988). Scatter analysis is increasing the accuracy of detecting malingering on intelligence tests (Schretlen 1986 and 1988).

In examining the ability of projective tests to detect malingered psychotic symptoms, it was originally thought that the Rorschach Projective Technique was impossible to mangle due its intentionally ambiguous stimuli. This assumption presumed that the tasks required to respond to the stimuli tapped the unconscious and were therefore

inaccessible to conscious alteration. Early Rorschach studies supported the assumption that the Rorschach was immune to all attempts at manipulation (Fosberg, 1938, 1941, 1943; Benton, 1945).

Subsequent investigators have demonstrated that subjects can alter their Rorschach scores in response to instructional sets (Carp and Shavin, 1950; Feldman and Graley, 1954; Eastan and Feigenbaum, 1967; Exner and Wylie, 1975). Although alterations were possible, manipulated protocols were detectable by these researchers at a level higher than chance.

A review of the recent empirical Rorschach studies which focus on malingering are inconsistent and inconclusive. As a whole, the literature suggests that the Rorschach profile may be altered by external conditions and/or consciously by the subject. Some studies suggest that attempts to malingering on the Rorschach are detectable to clinicians (Seamons, Howell, Carlisle, & Roe, 1981; Pettigrew, Tuma, Pickering, & Whelton, 1983) while others report that clinicians cannot detect malingered protocols at a level greater than chance (Albert et al., 1980; Mittman, 1983; Kahn, Fox, & Rhode, 1988).

Methodological Weaknesses of Existing Research

The existing studies on detecting malingered psychotic symptoms with the Rorschach inconsistently report success rates. In most studies, subjects are instructed to simulate a mental disorder about which they may or may not be educated. Research which examines the abilities of simulated malingerers may be impossible to generalize to true malingerers who are generally more invested in appearing mentally ill and are operating under a different motivation to be successful.

Another weakness related to Rorschach studies on malingered psychotic symptoms is a lack of a consistent system of administration, evaluation, and interpretation of Rorschach protocols. Some studies clearly report subscribing to the Exner Comprehensive System while other studies fail to provide any information about the system used. Other researchers have noted this inconsistency when reviewing malingering literature.

Critics have also reported on the difficulties related to the variable number of responses (R) produced by individuals on the Rorschach. Fourteen responses are necessary for a valid profile. It has been noted that malingerers produce fewer responses but it is unclear

exactly which other scales and ratios are affected by R. It would be necessary to look at the correlations between R and other factors and if R does exert an influence, then instituting statistical controls, such as partialing or residualizing would be necessary.

In addition, a common problem in Rorschach studies is that the sample size is too small for the number of variables being analyzed. This increases the likelihood for spurious random significance.

Proposed Research

General Method

The proposed research will investigate the usefulness of the Rorschach Projective Technique in the identification of malingered psychotic protocols. This study will improve upon some of the methodological weaknesses existing in prior research by adhering to the Exner Comprehensive system for scoring, and interpretation. It is proposed that the subjects' data be selected from the pool of existing pre-trial Competency and/or Criminal Responsibility study protocols which are maintained in the Forensic Unit at the Federal Correctional Institute at Butner, North Carolina.

Subjects

Subjects in this study will consist of pre-trial criminal defendants who are being evaluated for Competency to Stand Trial and/or Criminal Responsibility and who are categorized into one of the following three groups: (a) diagnosed malingerers, (b) diagnosed psychotics, and (c) not diagnosed as malingering or psychotic on Axis I. These diagnoses will be obtained from the Forensic Evaluations which were completed prior to a subject's inclusion in this study. Subjects will have completed a valid Rorschach protocol, an MMPI protocol, and some intelligence measurement.

Confidentiality

Confidentiality of defendant's data will be maintained by assigning each defendant an identification number which will be used to track the individual's data. Only data that had been previously collected during the completed Forensic Evaluation and submitted to the Court will be used for this study.

Potential Benefits to the Field of Psychology

The potential benefits to the field of psychology include improvement upon previously mentioned methodological flaws in an attempt to further clarify and improve upon clinician's skills to accurately detect malingering. This study will examine actual malingerers who are highly motivated to avoid legal prosecution by simulating psychotic symptoms. The Axis I diagnosis of malingering will be given to subjects after the completion of 24-hour observation for a period of no less than 30 days and after information from collateral sources has been obtained and evaluated. All Rorschach protocols will be valid (ie, containing at least 14 responses) and will be scored and interpreted using the Exner Comprehensive System. Finally, enough protocols will be collected to ensure proper statistical analysis.

Potential Benefits to the BOP

The use of the Rorschach in forensic evaluations is controversial due to the lack of standardization among practitioners and inconclusive research findings. The potential benefits to the Bureau of Prisons from this research include providing corroboration about the usefulness of the Rorschach Projective Technique in forensic evaluations where malingering is suspected. Actual pre-trial subjects will be used for this study which increases the generalizability of these findings to others currently in the legal system.

Costs to the BOP

This project will not result in significant costs to the BOP. Only data that has already been collected during the Forensic Evaluation completed at FCI-Butner, North Carolina, will be used in this study. Existing resources, such as the copy machine, are already in place and no additional funding will be required.

Risks to Bureau Staff, Inmates, and/or Subjects

There are no apparent risks to Bureau staff, inmates, or subjects. Only data that has been previously collected will be used in this study and no identifying information or non-public, FOI exempt information will be released by this study. As the study is using archival data, the actual subjects will not be informed that their data is being used for this study.

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APPENDIX C

RAW DATA

DATA FORMAT INFORMTION

Column	
1-3	ID number (001 - 999)
5	group (1 = malingered; 2 = psychotic; 3 = other)
7-8	age
10	race (1 = White; 2 = Black; 3 = Hispanic, 4 = American Indian; 5 = Asian; 6 = Other)
12	marital status (1 = married; 2 = single; 3 = separated/divorced; 4 = widowed; 5 = live-in)
14-15	educational level (01-20; 18 = MA; 20 = PhD)
17	study type
	1 = 4241(a) (b) 4 = 4242
	2 = 4241/4242 5 = 4244
	3 = 4241(d)
19-20	current crime code
	Person Property
	01 = homicide 10 = drug related
	02 = sex offense 11 = larceny
	03 = assault/murder 12 = forgery
	04 = robbery 13 = damaging prop
	05 = mail fraud 14 = explosives/weapons
	07 = threat 15 = tax evasion
	08 = kidnapping 16 = arson
	20 = PV
22	previous psychiatric history (1 = yes; 2 = no)
24	previous criminal history (1 = yes; 2 = no)
26-28	WAIS-R FIQ
30	Number of Rorschach administrations
32-33	# of responses (R)
35-38	Lambda (includes decimal place)
40	Schizophrenic Index number (SCZI)
42-43	# of popular responses (P)
45-48	F+%
50	DV
51	INCOM
52	DR
53	FAB
54	ALOG
55	CON
56-57	SUM 6
58-59	W SUM 6

001	3	44	1	3	16	1	10	1	2	117	1	16	0.33	1	04	0.75	01000000102
002	3	53	1	3	20	2	07	1	2	128	1	17	0.13	0	04	0.50	5000100612
003	2	46	1	3	12	3	07	1	1	084	1	18	0.80	0	08	0.75	1000100206
004	3	56	1	3	17	1	02	2	2	140	2	15	0.36	1	05	0.75	1100000309
005	3	65	1	1	03	2	10	1	1	083	1	20	0.82	0	06	0.78	5000000508
006	2	36	1	1	14	2	04	1	2	100	2	16	3.00	0	05	0.50	0000000000
007	2	38	2	2	16	2	07	1	1	083	1	23	0.21	0	08	0.75	0000000000
008	1	58	1	1	07	2	03	1	1	086	1	20	0.82	1	04	0.89	0000000000
009	2	32	2	2	12	3	05	1	1	086	1	16	0.45	1	05	0.60	0000100105
010	2	33	2	2	14	3	07	1	2	087	1	21	0.91	5	04	0.70	0020310631
011	3	23	1	1	09	2	10	2	2	081	2	24	0.50	3	10	0.63	0000200210
012	1	19	2	2	12	2	04	2	2	999	2	23	0.77	1	05	0.80	0000000000
013	3	45	1	3	12	2	02	1	2	095	1	39	1.79	1	04	0.48	1110010413
014	2	38	2	2	11	2	03	1	2	083	1	16	0.07	4	08	0.00	0000000000
015	3	32	1	3	19	1	03	2	2	095	1	20	0.05	0	04	1.00	0200000204
016	1	40	1	2	11	4	20	2	1	105	1	15	2.75	0	05	0.73	1000000101
017	1	50	1	1	17	2	02	1	1	125	1	21	0.31	1	00	0.60	0150100722
018	2	29	1	2	12	2	07	1	1	097	1	20	4.00	0	09	0.63	0000000000
019	3	37	1	3	09	2	03	1	2	089	1	26	0.37	1	12	0.29	1101000307
020	3	21	1	2	12	4	20	2	1	999	1	20	1.50	0	08	0.75	0101000206
021	3	28	2	1	07	2	04	2	1	083	1	22	1.20	1	07	0.58	0110000205
022	3	39	1	3	15	2	13	1	2	134	1	19	0.27	1	05	1.00	0000000000
023	3	20	1	2	12	2	04	1	2	097	1	32	0.23	5	05	0.33	6060101329
024	2	34	1	2	10	1	03	1	1	106	1	30	0.43	1	07	0.78	2020000408
025	3	56	2	3	16	2	01	1	2	107	1	40	0.82	1	03	0.83	3003210932
026	2	39	2	2	13	3	07	1	1	093	1	18	0.29	2	08	0.50	2001000306
027	3	36	2	2	13	2	10	2	1	085	1	25	3.17	2	04	0.68	1100400623
028	2	31	1	2	16	1	03	2	2	108	1	23	0.92	1	08	0.73	0000000000
029	1	25	1	2	16	2	04	1	2	138	1	15	0.36	0	06	0.50	0000000315
030	1	30	1	2	12	1	07	1	1	085	1	23	3.60	3	06	0.33	1000000101
031	3	33	1	1	12	4	04	2	2	083	1	30	1.31	1	06	0.76	0100000102
032	3	28	1	2	12	2	14	1	1	107	1	23	0.64	1	07	0.78	0000100105
033	2	52	2	2	08	5	04	1	1	091	1	56	0.75	2	10	0.58	00100000103
034	2	32	1	2	15	1	07	1	2	111	1	16	1.29	1	08	0.89	0000000000
035	1	49	2	3	12	2	03	1	1	086	1	18	0.80	1	05	0.50	1200000305
036	2	45	2	3	14	3	07	1	2	081	1	18	5.00	3	03	0.47	0001000104
037	3	44	1	3	12	2	08	1	1	083	1	23	0.64	4	07	0.44	1200000305
038	1	28	2	2	09	1	10	2	1	999	1	17	0.70	5	00	0.29	0070000721
039	3	50	1	3	08	2	04	1	1	092	1	21	0.75	0	04	0.67	0000000000
040	2	31	1	2	16	1	04	1	2	083	2	16	4.33	0	04	0.54	0100000102
041	3	37	1	3	13	4	10	1	1	101	1	36	0.80	4	06	0.31	0200000204
042	3	33	1	1	07	5	20	2	1	087	1	20	0.67	0	05	0.50	2000000202
043	2	44	2	1	12	2	10	1	1	083	1	18	1.57	0	08	0.82	1210000411
044	3	37	1	1	14	2	08	1	2	107	1	21	1.33	2	05	0.50	0000010107
045	1	39	1	3	14	2	03	2	2	130	1	29	0.32	0	09	0.43	3200000307
046	3	42	1	1	12	1	02	2	2	107	1	28	0.75	3	04	0.25	0000000000
047	2	61	1	4	12	2	07	1	1	122	1	45	5.43	4	04	0.16	0000100105
048	2	53	1	3	12	1	20	1	1	084	1	22	0.57	3	07	0.63	0000000000
049	1	25	1	2	11	2	04	1	2	999	1	23	0.53	4	07	0.63	0101000206
050	1	32	1	1	16	1	14	1	2	115	2	14	1.00	0	05	0.71	0001000140
051	2	40	1	3	12	1	03	1	1	099	1	34	1.62	5	07	0.19	8083102049

052	1	56	1	2	12	2	20	1	1	091	1	22	0.47	2	01	0.43	00110000207
053	3	50	1	1	12	5	02	2	1	104	1	21	0.91	1	08	0.70	1000000101
054	3	35	1	3	15	5	21	1	1	105	1	17	1.13	0	03	0.78	2000000202
055	2	40	1	2	12	3	13	1	2	103	1	19	1.71	1	05	0.50	1000000101
056	3	42	1	3	16	1	14	1	1	103	1	23	0.53	2	08	0.25	1000000101
057	2	40	2	1	12	2	07	1	1	084	1	19	18.0	4	04	0.33	0003000312
058	3	36	2	3	12	1	10	2	1	088	1	15	2.00	2	03	0.60	0000000000
059	2	35	1	3	20	3	07	2	2	100	1	22	4.50	4	05	0.39	0000000000
060	3	21	2	1	11	5	10	2	1	089	1	15	1.14	0	06	0.63	0000200210
061	1	41	1	1	16	1	15	1	2	999	2	19	1.11	3	03	0.50	1030100515
062	1	41	1	3	12	1	20	1	1	999	1	14	1.33	2	05	0.38	0000000000
063	1	32	2	2	12	2	04	1	2	999	1	21	0.24	5	04	0.00	2112010722
064	1	43	1	1	12	2	07	2	2	098	1	17	0.42	2	03	0.60	0000000000
065	2	40	2	2	10	3	04	1	1	999	1	15	0.50	0	05	0.80	2000000202
066	1	51	2	1	15	2	04	1	2	092	1	21	1.33	2	04	0.33	0010000103
067	3	58	1	3	12	2	01	1	1	095	1	29	6.25	2	05	0.52	1001100310
068	3	28	2	2	10	1	10	2	1	082	1	16	0.45	0	09	0.80	1000000101
069	2	29	1	2	14	5	14	2	2	085	1	25	0.79	4	05	0.55	0074121456
070	3	21	5	2	12	2	04	1	2	099	1	17	0.55	0	07	0.50	0100000102
071	1	23	2	2	12	2	05	2	1	999	1	19	1.71	2	05	0.50	1000000101
072	1	33	1	2	12	2	04	1	1	082	1	16	0.78	1	08	0.57	0000000000
073	1	39	3	1	12	5	10	1	2	999	1	17	1.43	2	03	0.50	0010100208
074	2	41	2	3	16	3	14	1	2	089	1	18	1.57	2	05	0.82	1000100206
075	1	21	2	2	12	4	11	2	2	117	1	18	0.80	2	05	0.50	0000000000
076	1	45	1	3	16	2	05	2	1	088	1	18	1.57	1	05	1.00	0000000000
077	2	31	1	2	12	2	16	1	1	085	1	14	0.40	2	04	0.75	0000000000
078	1	31	2	2	10	2	20	1	1	999	1	18	0.38	1	05	0.80	0000000000
079	2	28	2	3	15	3	07	1	1	094	1	17	0.89	1	03	0.75	0000000000
080	2	36	1	2	15	2	07	1	2	121	1	19	0.46	1	07	1.00	0100000102
081	2	28	3	2	11	3	14	1	2	086	1	19	0.27	2	05	0.50	0000000000
082	2	23	1	2	14	2	14	1	1	999	1	15	0.67	1	04	0.83	0000000000
083	2	52	1	3	12	4	16	1	1	086	1	17	0.55	1	05	0.67	0000000000

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