

THE ABILITY OF INFORMED FAKERS TO SIMULATE
SCHIZOPHRENIA ON THE RORSCHACH

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INTRODUCTION

The Rorschach is a test that is widely used in psychological evaluation. It has been demonstrated that certain instructions or "sets" can produce changes in Rorschach responses. For example, Exner (1978) reviewed studies in which the number of responses, details, color, and motion were all changed by the instructional set.

Because it has been demonstrated that Rorschach responses can be changed upon demand, the ability to malingering or "fake" becomes an important issue. There have been a few studies which have addressed this issue. One of the earliest studies was conducted by Fosberg (1938) in which subjects were first instructed to make the best impression, then make the worst impression. According to Fosberg (1938), "No matter whether the subjects try to make a good, bad, or indifferent impression, and even when each of the possible Rorschach factors are pointed out to them, the psychogram still remains recognizably like the standardly administered Rorschach" (p. 28).

Carp and Shavzin (1950) replicated the study of Fosberg. The Rorschach was given twice, three weeks apart, to 20 male elementary psychology students. The instructions were to imagine themselves in different situations, once to give a "good" impression and once to give a "bad" impression. The sets to "fake good" or "fake bad" were accompanied by narratives describing the different situations, but no specific information on what constituted "good" and "bad" impressions was given. It was found that the subjects were able to change their

Rorschach protocols, but it was not possible to determine in which way the subjects "faked" their responses. Thus this study is inconclusive concerning the ability to "fake bad" on the Rorschach.

In 1954, Feldman and Graley designed a study to investigate the effect of a set to simulate abnormality. Test Group I, which contained 30 subjects, was given the Rorschach with standard instructions. Two weeks later they were tested with the instruction to "give an impression of abnormality. Try to respond as you think a very disturbed person would. Give the worst possible impression..." (Feldman & Graley, 1954, p.327). Test Group II (43 subjects) was tested only once with the instructions to fake abnormality. All administrations were made in group form with subjects being asked to check on a chart which determinant they had used in forming their responses. It was concluded that the set to fake abnormality produced changes in the Rorschach performance. It was noted that most of the protocols resembled psychosis.

Easton and Feigenbaum (1967) tested the hypothesis that subjects would be unable to fake results since they did not know which aspects of their responses were significant. Eleven control and 11 experimental subjects were tested under standard administration procedures, then retested and asked to imagine themselves in a position where they would want to attempt to fake the test. These researchers found that repetition of the test changed some variables. However, the instructions to fake bad were not specific enough to thoroughly test their hypothesis. That is, their set to fake bad, which is very similar to that of Carp and Shavzin, did not include instructions to fake

psychosis or even abnormality. Rather, they were told only that an unfavorable score was the objective.

Albert, Fox and Kahn (1980) corrected the problem of instructional set in their study. They hypothesized that expert Rorschach judges would not be deceived by uninformed fakers but would be deceived by informed fakers. All fakers were instructed to malingering paranoid schizophrenia, but the informed fakers were provided with an audio tape describing paranoid schizophrenia. This tape included actual examples of delusional thinking and disturbed thought processes. Forty-six Fellows of the Society for Personality Assessment participated in this study as expert judges. It was found that these judges were unable to discriminate between the protocols of normals who were faking psychosis and actual psychotics. In fact, the uninformed fakers were diagnosed psychotic as often as actual psychotics were, and the informed fakers received even more diagnoses of psychosis. A very disturbing finding was that 24% of the normal (nonfakers) protocols were diagnosed as psychotic, while only 48% of actual psychotics were correctly diagnosed. A shortcoming in this study is that there is no indication of which scoring system, if indeed any scoring at all, was used by the expert judges. Also, the specific criteria that were used in judging are unknown. For example, the fakers might have used dramatic language, which appears pathological, but in reality may reflect good percepts.

Mittman (1983) and Exner (1982) followed the basic concept of Albert, Fox and Kahn. Ms. Mittman used six protocols each from samples of inpatient schizophrenics, inpatient depressives, nonpatients, nonpatients who were asked to malingering schizophrenic protocols, and nonpatients with information about schizophrenia who were asked to

malingering schizophrenic protocols. Thus, there was a total of 30 protocols, 12 of which were malingered (6 by informed fakers and 6 by uninformed fakers). These protocols were randomized and sent to volunteer judges who all had experience with Exner's comprehensive scoring system. Nearly 70% of the schizophrenic protocols were correctly identified. None of the nonpatient, nonmalingered records were misidentified as schizophrenic. "No judge called schizophrenia for 10 of the 12 malingered records. About half of the judges did call either schizophrenia or psychosis for two of the malingered records" (Exner, 1982, p. 6). Exner concluded from these data that some people who are informed about schizophrenia "might be able to produce a record commensurate with those that some 'experts' would consider schizophrenic" (Exner, 1982, p. 6).

Seamons, Howell, Carlisle and Roe (1981) conducted a study on the ability to simulate mental illness and normality. They found that dramatic responses were used to fake bad. Dramatic language includes sex, blood, gore, mutilation, hatred, fighting, decapitation, etc. Forty-eight male legal offenders who were diagnosed nonschizophrenic, latent schizophrenic, residual schizophrenic and schizophrenic-psychotic were administered the Rorschach under two test conditions. One set was to appear "as if you are a normal well-adjusted individual" (Seamons et al., 1981, p. 132) and the second set to appear "as if you are mentally ill, as if you are psychotic" (Seamons et al., 1981, p. 132). The protocols were scored according to Exner's (1974) comprehensive system. It was found that there were no significant changes noted in the ratios, percentages, and deviations, but that changes in content areas were found (e.g. dramatic language).

The study by Seamons, Howell, Carlisle, and Roe (1981) is consistent with Exner's (1978) conclusions that persons trying to fake schizophrenia will use bizarre and/or dramatic language but the form quality of their responses is not affected. That is, there is little distortion in perception. To illustrate this, Exner and Wylie (reported in Exner, 1978) asked 12 second-year graduate students who were completing their first Rorschach course to "create" schizophrenic protocols. All subjects had reviewed protocols of schizophrenics and most had actually tested one or more schizophrenics. Only one student was able to produce a protocol that was judged to be schizophrenic. Six other students were able to produce protocols with less than normal perceptual accuracy ($X\%$ lower than 70%), but most of the responses were of weak rather than minus form quality. Because most of these students were unable to simulate perceptual inaccuracy, Exner (1978) concludes that schizophrenics "tend to see the world through some kind of distorted psychological prism which nonpsychotic people do not share..." (p. 51).

Pettigrew, Tuma, Pickering and Whelton (1983) further tested the hypothesis that nonpsychotics cannot fake poor form quality on the Rorschach. They asked undergraduate psychology students, civilly committed psychotics and forensic inpatient psychotics to choose among four response types (good form but bizarre wording, good form with neither bizarre nor elaborated wording, poor form with non-bizarre wording, and poor form without elaboration or bizarre wording). For the control and psychotic subjects, the instructions were to "pick the description that most resembles what the blot looks like to you" (Pettigrew et al., 1983, p.466). Simulators were asked to respond as

they thought a psychotic or insane person would. As expected, simulators chose significantly more good form but bizarre wording responses. Thus, Pettigrew et al. (1983) conclude that "simulators appear to be 'exposed' by their own perceptual accuracy" (p. 468).

To summarize, it appears that the ability to "fake bad" or malingering on the Rorschach is questionable. Previous studies contained methodological differences, such as the lack of specific instructions for the "fake bad" set, the absence of a uniform or systematized scoring system, a lack of standard administration procedures, and the absence of a priori hypotheses concerning certain scoring criteria.

It is the purpose of this study to correct for the methodological problems of previous studies. Of primary concern is that no systematized Rorschach scoring system was consistently employed. Also, no specific a priori hypothesis concerning the ability to "fake bad" were advanced. This study will employ Exner's (1986) comprehensive scoring system and will use the Schizophrenia Index as the criteria for "faking bad".

While the primary focus of this study is on the ability to malingering or fake bad, it also addresses the question of validity of the Rorschach. Validity refers to how well a variable measures what it is intended to measure (Howell & Dipboye, 1982; Groth-Marnat, 1984; Sechrest, 1984). There are several approaches to validity. One approach is criterion-related validity which is determined by comparing test scores with some sort of performance on an outside measure. There is a theoretical relationship between the test scores and the performance measure (Groth-Marnat, 1984). For example, a measure of predicted violent behavior is validated against the occurrence or

nonoccurrence of violent behavior (Sechrest, 1984). The Schizophrenia Index of Exner's (1986) Comprehensive system has been shown to accurately discriminate schizophrenics from nonschizophrenics and is another example of criterion-related validity. Construct validity assesses the extent to which a test measures a theoretical construct or trait (Groth-Marnat, 1984). One way of determining construct validity is to measure the effects of treatment interventions (Groth-Marnat, 1984). This study assesses the construct validity of the Rorschach. The instructions to fake schizophrenia or not to fake are the treatment interventions. If, as expected, subjects are unable to fake schizophrenia, construct validity of the Rorschach will be implied.

Schizophrenia Index

The Schizophrenia Index according to Exner's Comprehensive System (1986) is as follows:

1. $X+\% < 70\%$
2. $\text{Sum FQ-} > \text{Sum FQu}$ or $X-\% > 20\%$
3. $M- > 0$ or $\text{WSUM6} > 11$
4. $\text{Sum DV+DR+INCOM+FABCOM+ALOG+CONTAM} > 4$
5. $\text{Sum DR+FABCOM+ALOG+CONTAM} > \text{Sum DV+INCOM}$ or $M- > 1$

Definitions for the variables comprising the Schizophrenia Index are given in Appendix A.

Descriptive statistics are provided by Exner (1986). The schizophrenic sample includes 179 females and 141 males, ranging in age from 19 to 48 with an average age of 27.3 years. Two hundred forty-eight were white and 72 were black or Hispanic. The average number of years of education was 11.78; the socioeconomic level ranged from SES 3 through SES 9, according to the Hollingshead and Redlich

scale. Most of these subjects (203) were first admissions, but most had some previous outpatient contact. All meet the DSM-III criteria for schizophrenia, and 75% were also diagnosed using the Research Diagnostic Criteria. Exner warns that no attempt was made to stratify the sample based on age, sex, educational level, or socioeconomic status.

Therefore, these data should not be considered a normative sample but used only as a frame of reference (Exner, 1986).

History and Development of the Schizophrenia Index

The following is summarized from Exner, 1986, unless otherwise indicated. Table I shows the progression in the development of this Index.

Development of the Schizophrenia Index of the Comprehensive System was begun in 1974. An empirical approach was taken and the protocols of schizophrenic patients were analyzed. It was seen that the mean X+% for these patients was 58%, and 89% of these patients had X+% of less than 70%. Additionally, 87% of the patients had an FQ- greater than FQu, and many patients had at least one M- response. Thus, the original three variables were:

1. $X+% < 70\%$
2. $FQ- > FQu$
3. $M- > 0$

Using these variables, 71% of a sample of 125 schizophrenic patients were correctly identified. However, when applied to a randomly selected inpatient depressive sample of 125, 39% were misidentified as schizophrenic. Thus, there was a substantial number of false positives and false negatives using these three variables.

TABLE I
DEVELOPMENT OF EXNER'S SCHIZOPHRENIA INDEX

Variable	Changes/Additions
1. X+% < 70% ^a	
2. FQ- > FQu ^a	Added: OR X-% > 20% ^d
3. M- > 0 ^a	Added: OR WSUM6 > 11 ^d
4. Sum 5 Special Scores > 4 ^b	Changed to: Sum DV+DR+INCOM+FABCOM+ALOG+CONTAM > 4 ^d
5. FABCOM+ALOG+CONTAM > DV+INCOM ^c	Changed to: DR+FABCOM+ALOG+CONTAM > DV+INCOM ^d
	Added: OR M- > 1 ^d
^a 1974 ^b 1976	^c 1978 ^d 1984

In 1976, five Critical Special Scores (DR, INCOM, FABCOM, ALOG, and CONTAM) were added to the Comprehensive System, and the fourth variable was created ($\text{Sum DR+INCOM+FABCOM+ALOG+CONTAM} > 4$). These special scores were not weighted at the time. In a sample of 225 schizophrenics, 68% were positive for all four of the variables in the Schizophrenia Index. In a random drawing of 225 nonschizophrenic protocols, only 11% were positive for the four variables; however, 41% were positive for three of the four variables. Thus, these four variables showed promise as an index to differentiate schizophrenics from nonschizophrenics. The false positive rate, however, indicated that further refinement of the Index was needed.

Numerous variables and combinations of variables were added to the Index in an effort to decrease the false positive and false negative rates. Most of these variables reflected limited emotional modulation and interpersonal interests. However, none improved the discriminatory power of the Index. Further investigation of the Special Scores for schizophrenics showed that three of them, FABCOM, ALOG, and CONTAM, had frequencies that were greater than or equal to the frequencies for DV and INCOM, while the reverse was true of control patients. Thus, the fifth variable added to the Index was: $\text{FABCOM+ALOG+CONTAM} > \text{DV+INCOM}$.

When the schizophrenic sample was screened again using the five variables, 80% of the patients were positive on four of the five variables, and 45% of the patients were positive on all five variables. Of the control subjects, 13% were positive on four variables, and only 11% were positive on all five variables. With the addition of the fifth variable, the true positive rate in identifying schizophrenic patients

was increased considerably, but the false positive rate did not increase.

These five variables became the experimental Schizophrenia Index. In 1978, the Research Diagnostic Criteria (RDC) (Spitzer, Endicott, & Robins, 1978) became the validating criterion against which this experimental Index was tested. Protocols from 85 patients who were exhibiting bizarre, psychotic-like symptoms were collected. According to the RDC, 46 of the 85 patients met the criteria for schizophrenia. The remaining 39 patients were diagnosed as affective disorders, drug-induced psychosis or reactive psychosis. The computer was programmed to select those protocols where X+% was less than 70%. From those protocols, the computer continued to test for each of the remaining four variables of the Index. When X+% < 70% and three remaining variables were used as the criterion, 87% of the schizophrenic subjects were correctly identified. However, five of the nonschizophrenic subjects were falsely identified as schizophrenic. When X+% < 70% and the four remaining variables was used as the criterion, 76% of the subjects were correctly identified as schizophrenic. However, there were no false positives.

Protocols from 43 child inpatients were collected, and the same procedure as described above was implemented. The RDC identified 20 of the patients as schizophrenic. When X+% < 70% and three of the four remaining variables was used, 16 of the 20 schizophrenic children were correctly identified, and none of the nonschizophrenic children were falsely identified. When all five variables of the Index were used, 13 of the 20 schizophrenic children were correctly identified.

In a sample of 90 diagnosed schizophrenic patients (using either RDC or DSM-III criteria), Spanish investigators found that 31% of the subjects were positive on all five variables, and 43% were positive on four variables.

In an attempt to refine the Schizophrenia Index, Exner reviewed those cases where false negatives occurred. He discovered that many of these protocols had very low X+%, and the frequency of minus answers was greater than four but not greater than the number of u (unusual) responses. From this, X-% was created as an alternative for variable FQ- > FQu. When the Special Score DV was reviewed, a subcategory for peculiar or circumstantial responses, DR, was shown to occur more frequently among schizophrenics than among nonschizophrenics. Therefore, DR was added as a special Score. This changed variable four to: $\text{Sum DV+DR+INCOM+FABCOM+ALOG+CONTAM} > 4$. The addition of DR also changed the fifth variable which became $\text{DR+FABCOM+ALOG+CONTAM} > \text{DV+INCOM}$.

Two other alternative criteria were added to the Index ($\text{WSUM6} > 11$ and $\text{M-} > 1$), but Exner is vague as to the rationale for their addition. He explains that experimental weights were given to the Special Scores and were tested for any added discriminative power. It was decided that a weighted sum of the six Special Scores of greater than 11 would become an alternative to the $\text{M-} > 0$ variable; however, why these two variables are alternatives for each other is uncertain. In 1984, Exner reported that an M with no form should be treated as being equal to three M- responses, and that two M- responses is approximately "four times worse (in terms of thinking disarray) than only one M-" (Exner, 1986, p. 9). $\text{M-} > 1$ was added as an alternative to variable number 5. However, M

with no form does not appear anywhere on the Index. Thus, five variables, with three having alternatives, constitute the Schizophrenia Index.

The Schizophrenia Index was tested in a "Monte Carlo" type random drawing of 100 subjects each from five categories: 1) DSM-III diagnosed schizophrenics, 2) nonschizophrenic outpatients, 3) nonschizophrenic inpatients, 4) inpatient affective disorders, and 5) nonpatient adults. The results show that out of six draws, all of the schizophrenic samples have at least 72 (out of 100) correctly identified, and three draws have greater than 80 correctly identified when either the four- or five-variable criterion is accepted. The proportion of those correctly identified is substantially lower when only the five-variable criterion is used. Generally, the other four nonschizophrenic groups had false positive rates of less than 10% when either the four- or five-variable index was used.

Thus, according to Exner (1986):

If five variables are positive, the likelihood of schizophrenia is considerable, and the likelihood of a false positive is quite low. On the other hand, when only four variables are positive, the probability of schizophrenia being present is substantial, but the possibility of a false positive cannot be ignored (p. 423).

Exner cautions that if both X+% and X-% are positive, it does not unequivocally signal schizophrenia. Similar perceptual inaccuracy is seen in some patients who are neurologically disabled, some learning disabled, reactive psychotics, and those with severe affective disorders. Likewise, cognitive slippage, as reflected in the Special Scores, in itself does not indicate schizophrenia. A high WSUM6

indicates only that thought problems exist. This has been seen in some drug-related conditions, schizotypal personality disorder, and some forms of affective disorder. However, when perceptual inaccuracy is combined with variables regarding disordered thinking, the differentiation between schizophrenia and other disorders is improved. Table II provides a comparison of the schizophrenic sample with inpatient depressives, outpatient character problems, and nonpatient adults on variables comprising the Schizophrenia Index.

Conclusions

When Exner began the development of the Schizophrenia Index, he attempted to empirically validate Rorschach variables which reflected the symptomatology of schizophrenia. He followed Weiner's conceptualization of the four basic symptoms of schizophrenia. These are: "(1) evidence of a thinking disorder; (2) evidence of impaired perceptual accuracy or reality testing; (3) evidence of poor emotional controls; and (4) evidence of a limited or ineffective interpersonal life" (Exner, 1978, p. 247). Other theorists agree with this conceptualization (Arieti, 1974; Lehmann & Cancro, 1985; Rabin & Winder, 1969). However, to date, only perceptual inaccuracy and cognitive slippage have emerged as the critical differentiating variables.

Accurate perception is essential for the realistic comprehension of one's environment, and schizophrenics have been shown to be less accurate than normals in tests of perception (Rabin & Winder, 1969). In its extreme form, inaccurate perception results in hallucinations. On the Rorschach, perceptual accuracy is reflected in good form quality or the "goodness of fit" between the stimulus and the percept (e.g., X+% and F+%). However, accurate perception is only part of the process of

TABLE II
COMPARISON OF VARIABLES FOR FOUR GROUPS

Variables	Groups							
	Schiz		Depr		Chac		Normals	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S. D.
1. Schizophrenia Index	3.96	1.02	1.91	1.29	1.75	1.09	0.40	0.78
2. X+%	0.53	0.17	0.68	0.12	0.70	0.13	0.80	0.09
3. X-%	0.31	0.15	0.15	0.10	0.15	0.09	0.06	0.05
4. Sum6 Special Scores	6.58	5.13	3.12	2.76	3.29	2.98	1.64	2.09
5. WSUM6 Special Scores	16.88	10.24	6.98	5.96	6.52	4.65	3.96	1.76
6. M-	1.53	1.67	0.33	0.67	0.18	0.52	0.09	0.45
7. DV	1.37	1.69	0.63	0.72	0.74	1.86	0.36	1.20
8. DR	1.21	1.58	0.63	0.93	0.90	1.29	0.51	1.31
9. INCOM	1.51	1.71	0.91	1.14	0.98	1.29	0.54	0.79
10. FABCOM	1.59	1.63	0.54	0.85	0.54	0.90	0.18	0.56
11. ALOG	0.86	1.26	0.21	0.49	0.09	0.29	0.09	0.35
12. CONTAM	0.18	0.50	0.00	0.00	0.04	0.20	0.01	0.07

accurate reality testing. It is also necessary to make sense of what is perceived. Disturbances in thinking, i.e., illogical reasoning and delusions, are often manifested in unusual language. These are reflected by Exner's Special Scores.

Regarding malingering, Exner (1978) says:

Usually the person trying to feign schizophrenia will use bizarre and/or dramatic wording in his answers; but when the form quality scoring is examined closely, the sham has failed. In other words, in spite of the unusual verbiage and the unusual responses, there is little distortion in perceptual accuracy...(p. 51).

Hypotheses

Two groups of subjects were utilized in this study. Both the control and experimental groups were obtained from nonschizophrenic populations which were recruited from a college population.

Generally, it was hypothesized that the control group would perform as expected on the Rorschach. That is, the control group would score as other normal populations typically score. It was hypothesized that the experimental subjects would not be able to produce schizophrenic-like Rorschach protocols even though they were informed of the symptoms of schizophrenia. It was anticipated that their protocols would reflect good form quality but would contain content and verbiage that was dramatic, e.g., blood, mutilation, and mildly bizarre responses for which some Special Scores would be coded.

Specific hypotheses were as follows:

1. The control group would obtain an average score of less than 4.0 on the Schizophrenia Index.

2. The experimental group would also obtain an average score of less than 4.0 on the Schizophrenia Index.
3. The experimental group would obtain an average SUM6 Special Scores of greater than 4.0.
4. The experimental group would obtain an average WSUM6 score greater than 11.0.
5. The experimental group would obtain an average X+% of greater than 70%.
6. The experimental group would obtain an average X-% of less than 20%.
7. The experimental group would obtain less than two M-responses, on the average.
8. The experimental group would, on the average, score $FQu > FQ-$.
9. The experimental group would obtain, on the average, a $Sum DV+INCOM > Sum DR+FABCOM+ALOG+CONTAM$.

METHOD

Subjects

There were two groups of subjects with 20 subjects in each group. Both groups were recruited from psychology classes at the University of Arkansas at Little Rock (UALR). Participation was voluntary, and anonymity was assured. All subjects signed consent forms (see Appendix D) prior to testing. Subjects were randomly assigned to the two groups.

Subjects in the control group ranged in age from 17 to 46 with a mean age of 23.90 years. There were 9 males and 11 females. There were 18 whites, 1 black and 1 Native American. According to Hollingshead's (1957) two-factor index of social position, there were 6 in Class II, 10 in Class III, and 4 in Class IV. (Higher class numbers refer to lower SES.) Intelligence quotients estimated by the Quick Test ranged from 89 to 130 with the mean being 104. Two subjects had been hospitalized for psychiatric reasons in the past, and 7 had been in outpatient therapy or counseling.

In the experimental group, the ages ranged from 17 to 47 with a mean age of 23.95. There were 11 males and 9 females. There were 15 whites and 5 blacks. For the index of social position, there were 9 in Class II, 7 in Class III, 3 in Class IV, and 1 in Class V. Estimated intelligence quotients ranged from 83 to 116 with a mean of 100.65. One subject had been hospitalized previously for psychiatric reasons, and two had been in outpatient therapy or counseling.

Instruments

Rorschach Psychodiagnostic Inkblot Test

The Rorschach Psychodiagnostic Inkblot Test consists of 10 bilaterally symmetrical chromatic and achromatic inkblots. The Rorschach inkblots as they are used today were introduced by Hermann Rorschach in 1921. However, investigations into perception and visual imagination using inkblots began as early as 1857 (Klopfer & Davidson, 1961). According to Exner (1986), it is doubtful that Rorschach knew of this early work, and his inkblots are probably based on a children's game with which he was familiar called "Blotto." After Rorschach, several researchers developed scoring systems for the inkblot test. The most well-known investigators are Beck, Hertz, Klopfer, Piotrowski, Rapaport, and Schafer (Exner, 1986). Exner's Comprehensive System (1986) uses variables from several of the previous scoring systems. In addition, he has conducted extensive research in order to improve and revise his system. Exner's development of the Schizophrenia Index has been discussed in Chapter I.

Research Diagnostic Criteria (RDC) and Schedule for Affective Disorders and Schizophrenia (SADS)

Each subject was administered the Schedule for Affective Disorders and Schizophrenia (SADS), a structured interview, and the results were compared to the Research Diagnostic Criteria (RDC). These instruments were used to insure that no subjects with schizophrenia participated in the study. No subjects were excused because of these criteria.

The Research Diagnostic Criteria (RDC) was developed by Robert L. Spitzer, Jean Endicott, and Eli Robins (1978) in response to the poor reliability of previous diagnostic systems. It is an elaboration and

modification of earlier diagnostic criteria for major psychiatric disorders and is based upon the work of Feighner, Robins, Guze, Woodruff, Winokur, and Munoz (1972) and Schneider's First Rank Symptoms (Mezzich & Slayton, 1984). For each disorder, there are inclusion and exclusion criteria which refer to either symptoms, signs, duration or course of illness, or levels of severity of impairment. Diagnostic terms are frequently defined in the criteria themselves to avoid ambiguity. The RDC also provides for a degree of certainty of diagnosis. All diagnoses are judged either not present, probable, or definite as determined by the number of specific criteria that are present (e.g., probable requires only three items in an index and definite requires four or more) (Spitzer, Endicott, & Robins, 1978). The RDC assumes that known organic factors which may contribute significantly to the symptomatology have been ruled out.

The developers of the RDC tested its reliability in three studies. Study A used an early draft of the RDC and was conducted using 68 inpatients as subjects. There were two raters who conducted the evaluation without the use of a formal structured interview. Study B used the first edition of the RDC with 150 subjects. Pairs of raters used the Schedule for Affective Disorders as the interview procedure. Study C was a test-retest design using the second edition of the RDC. The SADS was again used to conduct interviews with sixty patients who were reinterviewed within one or two days. The reliability coefficients (Kappa) were very high even for the test-retest condition. Coefficients for the various diagnostic categories ranged from .40 for Bipolar I to 1.00 for several categories. Most of the coefficients were .75 and above (Endicott & Spitzer, 1979). More recent studies have confirmed

the high reliability of the RDC (Andreasen, Grove, Shapiro, Keller, Hirschfeld & McDonald-Scott, 1981; Grove, Andreasen, McDonald-Scott, Keller, & Shapiro, 1981; Andreasen, McDonald-Scott, Grove, Keller, Shapiro, & Hirschfeld, 1982).

There are 25 diagnostic categories on the RDC, including schizophrenia with six subcategories of this disorder (acute-chronic, paranoid, disorganized, catatonic, mixed/undifferentiated, residual). DSM-III (APA, 1980) criteria for schizophrenia were based on the RDC; however, there are some minor differences. The first difference refers to the duration of symptoms. If the RDC diagnosis is schizophrenia, acute/subacute, the DSM-III diagnosis is Schizophreniform Disorder. There are also differences when an affective syndrome is present simultaneously with schizophrenia. A full affective syndrome would likely contraindicate schizophrenia on the RDC but not necessarily on the DSM-III.

The Schedule for Affective disorders and Schizophrenia (SADS) was used to gather information for diagnosis on the RDC. The SADS was developed by Jean Endicott and Robert Spitzer (1978) in an effort to reduce "information variance," or differing amounts and kinds of information about clients. The SADS has over 200 summary scales and many checklist items. It is comprised of two parts. Part 1 is designed to elicit a detailed description of the subject's current episode and for the week prior to interview. It also is used to describe the symptoms when they were at their most severe. Part 2 elicits information regarding past psychiatric disturbance. The schedule provides a progression of questions which systematically rule in and

rule out specific RDC diagnoses. Interviewers are instructed to use all sources of information, such as records, to obtain the information required to make judgments on the items.

Intraclass correlation coefficients of reliability for 120 scaled items of the SADS show 90% of the coefficients are .60 or better in a study where pairs of interviewers were used. In a test-retest evaluation, 82% of coefficients were .60 or better. In the aforementioned studies, 83% and 73%, respectively, of the coefficients were .70 or better. When summary scales were intercorrelated, only two scales overlapped (i.e., Endogenous Features and Depressive Associated Features). All other summary scale intercorrelations were moderate or negative in size, indicating that the dimensions described by the scales are relatively independent (Endicott & Spitzer, 1978).

The SADS takes 90-120 minutes to administer, depending on the severity of the symptoms and the degree of cooperation by the subject. A diagnosis based on the RDC can be obtained in 10-15 minutes.

Narratives

The experimental group, Group 2, was given a narrative which described the symptoms of schizophrenia, especially those symptoms which have been shown empirically to differentiate schizophrenia on the Rorschach. (See Appendix B.) Specifically, those symptoms are perceptual inaccuracy and cognitive slippage (Exner, 1986). The narrative was developed by the author. The first step in the development of this narrative was to determine what symptoms of schizophrenia were not typically understood by laypersons. To accomplish this, 25 students in the leadership class at the Draughton School of Business in Little Rock, Arkansas, were asked to read the

DSM-III diagnostic criteria for schizophrenia (APA, 1980). These students were then asked to underline any and all words or phrases that they did not completely understand. The words and phrases indicated as not being easily understood were reworded into less technical language when used in the narrative. Secondly, several sources were consulted regarding the symptomatology of schizophrenia (APA, 1980; Arieti, 1974; Beck, 1964; Bernheim & Lewine, 1979; Korchin & Larson, 1977; Lehmann & Cancro, 1985; Robin & Winder, 1969; Watkins & Stauffacher, 1952; Weiner, 1977). The wording in the narrative was kept as simple as possible in an attempt to promote comprehension by the subjects. Ten test questions regarding the narrative were also developed. These questions were administered to subjects to insure that they adequately understood the material, as this was an important variable in the study. The narrative and quiz were once again presented to students at the Draughon School of Business. Twenty-four students read the narrative and answered the questions. The mean proportion correct on the quiz was .86.

The narrative on Alzheimer's disease was also developed by the author. (See Appendix C.) This narrative was presented to the control group subject. It was used only to equalize the tasks required of all subjects. Therefore, the primary consideration during the development of this narrative was to be of equivalent length and reading level to the narrative on schizophrenia. A number of sources were consulted regarding the symptoms of Alzheimer's disease (Powell & Courtice, 1985; Reisberg, 1983; Zarit, Orr, & Zarit, 1985). A quiz of ten questions was also developed for this narrative. Because the comprehension of this material was not essential to the study, no pilot studies were conducted on this material.

Quick Test

The Quick Test (Ammons & Ammons, 1962) was administered to each subject. This test is a measure of general intelligence. It was designed as a quick screening test of verbal-perceptual intelligence. It has been shown to be effective in accurately estimating intelligence for a number of groups in various settings (Ciula & Cody, 1978; Coyle & Erdberg, 1968; David & Dizzone, 1970; Dizzone & Davis, 1973; Husband & DeCato, 1982; Joesting & Joesting, 1971a, 1971b, 1972; King, 1967; Maloney, Nelson, Duvall & Kirkendall, 1978; Mednick, 1969; Ogilvie, 1965; O'Malley & Bachman, 1976; Peteroy, 1980; Quattlebaum & White, 1969; Rotatori, 1978; Sawyer & Whitten, 1972; Stewart, Cole & Williams, 1967; Templer & Tarter, 1973; Traub & Spruill, 1982; Whitney & Metzger, 1965).

The test consists of three different forms, each containing fifty words. Any or all of the forms can be given as all forms are considered to be equivalent (Abidin & Byrne, 1967; Joesting, 1975; Vance, Blixt & Ellis, 1980). Each form is accompanied by a cardboard plate with four line-drawings. Each stimulus word is given orally (subjects over the seventh grade level are provided with the printed words as well), and the subject is asked to point to the drawing which best illustrates the meaning of the given word. The stimulus words increase in difficulty. The manual provides instructions to control for guessing. Six consecutive passes constituted a basal score, and six consecutive failures constituted a ceiling score. Raw scores are converted to Mental Ages from 1.5 to 19.0, and percentile and I.Q. scores for adults are provided. Separate norms are given for the seven different forms of the test (e.g., Form 1, Form 2, Form 1+2+3). The test can be

administered in two to ten minutes, depending upon the number of forms that are given. The test is appropriate for ages two through adulthood.

The Quick Test (QT) was developed by Robert B. and Carol H. Ammons (1962). It was first published in 1962. The QT is based upon the Full-Range Picture Vocabulary Test (FRPV) (as reported by Swartz in 1984). The normative sample contained 458 white children and adults and was controlled for age, sex, grade in school, and father's, husband's or own occupation (Swartz, 1984). Concurrent validity correlations (with the FRPV) ranged from .60s to .90s. Reliability correlations (alternate or equivalent-forms) have ranged from .60 to .96, with samples ranging from 20 to 100 cases (Swartz, 1984).

Considerable research has been conducted on the Quick Test. Numerous studies have correlated Quick Test scores with the Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Adult Intelligence Scale-Revised (WAIS-R). Correlations between the QT and WAIS Verbal I.Q. ranged from .63 (Traub & Spruill, 1982) to .89 (Husband & De Cato, 1982), and with the WAIS Full Scale I.Q. from .64 (Traub & Spruill, 1982) to .89 (Husband & De Cato, 1982). As expected, correlations between the QT and WAIS Performance I.Q. are somewhat lower, .38 (Olgivie, 1965) to .83 (Joesting & Joesting, 1972). The QT has also been compared with the Stanford-Binet with a correlation of .79 ($p = .001$) (Joesting & Joesting, 1971). The predictive validity of the QT was examined by O'Malley & Bachman (1976) in a longitudinal study. These researchers found a "reasonably strong" correlation of .41 between the Quick Test and educational attainment (as measured eight years later). Studies conducted with various populations, such as

psychiatric, neuropsychiatric, forensic, mentally retarded, welfare, all age groups and different races have concluded that this test is effective as a measure of general intelligence and is comparable to scores obtained on other measures of intelligence (as cited above).

Regarding the subject populations to be used in the current study, namely college students, the QT is generally accepted as a reliable estimate of intelligence. In a college population, the Quick Test underestimated I.Q.s as measured by the WAIS (Feldman, 1968). Feldman found that the mean QT I.Q. ($\bar{M} = 107$) was significantly different from the WAIS Full Scale I.Q. ($\bar{M} = 121$, $t = 12.07$, $p < .001$). He concluded, however, that the QT was acceptable as an alternative measure of intelligence if vocabulary level was the primary interest. Ammons and Ammons have suggested that a correction factor of approximately 15 IQ points should be added to all adult scores (Abidin & Byrne, 1967).

For the purposes of this study, the measurement of absolute intelligence was not necessary. That is, it was only necessary to know if brighter subjects responded differently, but it was not necessary to know exactly how bright the subjects were in an absolute sense. The Quick Test has been shown to be an adequate estimate of intelligence and can be administered in a short period of time; therefore, the Quick Test (Form 1) was used as the measure of intelligence.

Background Questionnaire

A background questionnaire was administered to all subjects. This questionnaire sought standard information such as age, sex, and race. Questions regarding years of education and occupation were included in order to compute a two-factor index of socioeconomic status (Hollingshead, 1957; Bonjean, Hill, & McLemore, 1967). Two questions

regarding previous psychiatric and/or psychological treatment were also included. A copy of the background questionnaire is shown in Appendix E.

Procedures

Subjects for the control and experimental groups were recruited from the UALR introductory psychology classes. After consent forms were signed, each subject was assessed according to the Schedule for Affective Disorders and Schizophrenia (SADS), a structured interview and the results were compared to the Research Diagnostic Criteria (RDC). No subject scored positively for schizophrenia; therefore, none were excused from the study. Once suitability for participation in this study was assured, subjects were randomly assigned to either the control or experimental group. A random numbers table was utilized for this group assignment.

Next, the Quick Test (Form 1) was administered to all subjects. Standard administration and scoring procedures were followed.

For the control group, a narrative describing Alzheimer's disease was given. Instructions were as follows:

This research project has two parts to it. First, I want you to read this paper describing Alzheimer's disease. You may or may not need to use this information later, so take as much time as you need to read it carefully. After you finish reading it, I'll give you a short quiz on Alzheimer's.

Because this exercise was included only to match the tasks required of the tasks required of the experimental group, it was not essential that subjects comprehend the information. It was only necessary for them to spend time reading the information and taking the quiz. Any

score obtained on the quiz was acceptable. After this task was completed, the examiner informed the subjects that, "You will not need to use this information, so you can now disregard what you just read. This information regarding Alzheimer's disease is no longer important in this study and you can just forget about it."

Finally, the Rorschach was administered according to Exner's standard procedures (Exner, 1986). Refer to Appendix F for a summary of these procedures. All responses were recorded verbatim.

The experimental group was given a narrative describing the symptomatology of schizophrenia. The narrative gave particular emphasis to those symptoms that are scoreable on Exner's Schizophrenia Index. Instructions were as follows:

This research project has two parts to it. First, I want you to read this paper describing schizophrenia. You will need to use this information later, so take as much time as you need to read it carefully. After you finish reading it, I'll give you a short quiz on schizophrenia.

Quizzes were scored immediately and all subjects obtained scores of greater than 70% correct; therefore, it was assumed that all subjects were informed of the symptomatology of schizophrenia.

The administration procedures for the Rorschach were the same as for the control group with one exception. After the test was introduced, (i.e., "This is the inkblot test," etc.), subjects were given the following instructions:

Now, I want you to take this test as you think a person with schizophrenia would take it. I want you to think of the symptoms

that you just read about and use that information to help you.

Remember, I want you to respond as you think a schizophrenic would. Any questions subjects had regarding these instructions were answered. Thereafter, standard Rorschach administration procedures were followed.

All Rorschach protocols were scored according to Exner's Comprehensive System (Exner, 1986). All testing and scoring was completed by this author who has administered and scored over 30 Rorschachs according to the Comprehensive System with supervision provided by psychologists experienced in this scoring system. Two subjects presented invalid protocols according to Exner's criteria (the number of responses was less than 10 and/or Lambda was greater than 1.20). Both protocols were eliminated from the study and replacement subjects were tested. Both invalid protocols were from the experimental group.

In an effort to reduce experimenter bias and to insure the accuracy of the data, 30% of the protocols were drawn randomly from each group and second scorers were asked to score form quality and Special Scores. However, only one-half of the protocols (or 15% of the total number of protocols in the study) were returned to the investigator. The second scorer did not see the original scores and did not know from which group the protocol was taken. Second scorers were doctoral-level psychologists who have been trained in the Comprehensive Scoring System. When it was obvious that the first score was incorrect, the score was changed. However, if there was a difference between the first and second scores, a third, neutral scorer was consulted to determine which score was more appropriate.

RESULTS

Data Analysis

According to Exner (1986), the distributions for many Rorschach variables fall on J-curves rather than on normally-shaped curves. Therefore, the first step in data analysis was to review the skewness and kurtosis for the variables in question. This is necessary in order to determine which statistical test is appropriate. For example, if a particular variable has a significant amount of skewness and/or kurtosis, it indicates that the distribution of scores is not normal and non-parametric tests of significance are required. Upon reviewing the skewness and kurtosis for the variables in the Schizophrenia Index, it was found that some of the values for skewness and kurtosis were sufficiently high that t-tests could not be used. The values for skewness and kurtosis are shown in Table III. This indicates that for the variables referring to M- (poor quality human movement scores), the difference between Form Quality unusual and Form Quality minus, and the Sum of the Six Special Scores the distributions are skewed and leptokurtic. This suggests that for these variables, scores pile up in one region rather than being normally distributed. The scores for these variables were dichotomized in order to reduce the skewness and kurtosis. Frequencies for the dichotomized scores were obtained and chi-square tests were performed with equal theoretical frequencies for each part of the dichotomy. For those variables which did not exhibit significant skewness or kurtosis, t-tests were performed. Therefore, of the the

TABLE III
SKEWNESS AND KURTOSIS FOR SCHIZOPHRENIA INDEX
Experimental Group

Variable	Skewness	Kurtosis
1. Schizophrenia Index	-0.11	-1.06
2. SUM6	2.01	4.03
3. WSUM6	1.55	1.20
4. X+%	-0.09	-0.02
5. X-%	1.31	2.07
6. M-	1.88	4.46
7. FQu > FQ-	-2.50	8.23
8. Sum DV+INCOM > Sum DR+FABCOM+ALOG+CONTAM	-0.84	1.26

nine hypotheses, six were tested by univariate t-tests and three by chi-squares. For the nine variables comprising the Schizophrenia Index, comparisons were made between the control and experimental groups. That is, tests were performed to determine any significant differences between the groups on each variable of the Index. In accordance with the information regarding the skewness and kurtosis for each variable, either t-tests or chi-squares were performed. The results for each hypothesis are given below. The final step in the data analysis was to perform a component analysis. This is discussed in detail below. Descriptive statistics (means, standard deviations, skewness and kurtosis) for numerous variables are presented in Appendix G.

Results

Generally, the results indicate that, as expected, neither the control nor experimental group presented Rorschach protocols indicative of schizophrenia. Prior to the study, it was hypothesized that the

experimental group would attempt to fake schizophrenia by using a preponderance of bizarre, dramatic language and illogical reasoning (reflected in Special Scores), but would fail to simulate schizophrenia by exhibiting accurate perception (i.e., good form quality). However, for this group of experimental subjects, the opposite appears to be true. That is, the experimental subjects produced poorer form quality and did not use dramatic language and strained logic. Results for specific hypotheses are presented below.

As expected, the control group obtained a mean of less than 4 on the Schizophrenia Index, $\bar{M} = 1.7$, $t(19) = 11.14$, $p < .01$. This result was predicted in the first hypothesis.

The second hypothesis stated that the experimental group would also obtain a mean of less than 4 on the Schizophrenia Index, $\bar{M} = 2.55$, $t(19) = 4.65$, $p < .01$. These control and experimental group means are significantly different, $t(38) = 2.27$, $p < .05$.

The third hypothesis stated that the experimental group would obtain an average sum of the six Special Scores (SUM6) of greater than 4. Because of the skewness and kurtosis, this hypothesis was tested using a chi-square test. The scores were dichotomized between 4 and 5. The frequency of scores in the range from 0 to 4 was 15 while the frequency of scores in the range from 5 to 15 was 5. The chi square was computed, $\chi^2(1, N = 20) = 5.0$, $p < .05$. Thus, the experimental group, contrary to the third hypothesis, had scores that were mostly 4 or below. No chi square analysis was done with the dichotomous scores in the control group. A chi square was calculated to compare both groups. In this case, the result was $\chi^2(1, N = 40) = 5.71$, $p = .017$. While small theoretical frequencies make this test uncertain, it

reflects the fact that all 20 of the control group scores were in the range from 0 to 4.

On the fourth hypothesis, the experimental group was expected to obtain a mean exceeding 11 on the weighted sum of the six Special Scores (WSUM6). Again this group produced a mean significantly lower than the predicted value, $\bar{M} = 5.6$, $t(19) = 2.98$, $p < .01$ (for a two-tailed test). As expected, the control group also did not exceed a WSUM6 of greater than 11, $\bar{M} = 2.05$, $t(19) = 14.59$, $p < .0001$ (for a two-tailed test). When comparing the control group to the experimental group, there was no significant difference on this variable, $t(38) = 1.86$, $p > .05$.

On the fifth hypothesis, a surprising result occurred on the variable X+%, which indicates perceptual accuracy. Both the experimental and control groups were expected to obtain a mean X+% of greater than 70%. However, for the control group, $\bar{M} = 56\%$, $t(19) = 4.89$, $p < .0001$ (for a two-tailed test), and for the experimental group, $\bar{M} = 48\%$, $t(19) = 5.22$, $p < .0001$ (for a two-tailed test). The X+% means between the groups were not significantly different, $t(38) = 1.58$, $p > .05$.

The sixth hypothesis refers to X-%. This variable reflects the proportion of perceptual distortion that has occurred in the protocol and is calculated: Sum Form Quality minus divided by the total number of responses (Sum FQ-/R) times 100. It was hypothesized that the experimental group would obtain an average X-% of less than 20%. The results indicate that the experimental group obtained a mean X-% that is slightly higher than predicted, $\bar{M} = 23\%$, $t(19) = .93$, $p > .05$. While no specific hypothesis was advanced regarding the X-% for the control group, it was expected that this group would also obtain a mean X-% of

less than 20%. The control group mean is within the expected range, $\bar{M} = 18\%$, $t(19) = .78$, $p > .05$. The control and experimental group means for X-% are not significantly different, $t(38) = 1.21$, $p > .05$.

The seventh hypothesis refers to the variable regarding human movement with poor form quality which is designated as M-. It was hypothesized that the experimental group would obtain, on the average, less than two M- responses. Because of the skewness and kurtosis, this hypothesis was tested for significance using a chi-square test. First, the scores were dichotomized ($M- < 2$; $M- > 1$) and frequencies for the dichotomized categories were obtained. The frequency of scores in the range from 0 to 1 was 17 while the frequency of scores in the range of 2 to 4 was 3. A chi-square test revealed that, as predicted, the experimental group had significantly fewer than two M- responses, $\chi^2(1, N = 20) = 9.8$, $p < .05$. No chi square was computed for the control group; however, a chi square was computed to compare the experimental and control groups. This chi square, $\chi^2(1, N = 40) = 1.11$, $p > .05$, showed that the two groups did not differ significantly on this variable. However, like the SUM6 variable, the theoretical frequencies are small and make this test uncertain. We must be cautious, therefore, when interpreting these results.

The eighth hypothesis refers to "unusual" and "minus" form quality ratings. "Unusual" form quality refers to responses in which the basic contours of the blot are not violated, but the response is not one that is given frequently. "Minus" form quality refers to distorted and unrealistic use of the blot. These responses reflect a disregard for the blot contours. It was hypothesized that the experimental group, on the average, would produce more "unusual" than "minus" form quality

ratings because of fakers' inability to distort their accuracy perception. The difference between the scores for FQU minus FQ- were dichotomized according to $FQ < 1$ and $FQ > 0$. The frequency of scores in the range -19 to 0 was 4, and the frequency of scores in the range 1 to 8 was 16. A chi square test, $\chi^2(1, N = 20) = 7.2, p < .05$, confirmed the prediction that the experimental group would produce more "unusual" than "minus" responses. A chi square for the control group was not computed. However, comparing the two groups, $\chi^2(1, N = 40) = .00, p > .05$.

The ninth hypothesis refers to the six Special Scores. According to Exner (1986), schizophrenics obtain higher frequencies on the Special Scores of DR, FABCOM, ALOG, and CONTAM than on DV and INCOM. The reverse is true of control subjects. Although fakers are expected to present a greater number of Special Scores, there was no information to indicate that they would score higher on certain Special Scores than others. Therefore, it was hypothesized that the experimental group would perform in the same manner as other nonpsychiatric subjects in regard to these Special Scores. That is, it was expected that this experimental group would obtain, on the average, $\text{Sum DV+INCOM} > \text{Sum DR+FABCOM+ALOG+CONTAM}$. However, this hypothesis was not supported, $M = -.05, t(19) = .10, p > .05$ (for a two-tailed test). Although no formal hypothesis was advanced regarding the control group's performance on this variable, it was expected that these subjects would perform as other nonpsychiatric subjects have performed (i.e., $\text{Sum DV+INCOM} > \text{Sum DR+FABCOM+ALOG+CONTAM}$). For the control group, $M = .45, t(19) = 2.44, p < .05$. The difference between these groups on this variable was not significant, $t = .94, p > .05$.

Fifteen percent of the protocols were scored by a second person in order to check the accuracy of the scores. As stated previously, scores were changed if it was obvious that the first score was incorrect. If it was uncertain which score was correct, a third scorer was consulted to determine the more appropriate score. A percentage was computed of the number of differences in scoring (regardless of which score was ultimately determined to be correct) for the form quality rating and the special score separately. For the form quality ratings, the differences ranged from 1% to 57%. For the special scores, the differences ranged from 9% to 42%. There were considerably more differences in scoring for experimental group which suggests that these attempts to fake schizophrenia made scoring difficult.

Table IV shows a list of the values obtained by each subject for the variables comprising the Schizophrenia Index. It can be seen on this table that the subjects in the control group appear less schizophrenic than subjects in the experimental group on each of these variables. The reader should keep in mind that the maximum score on the Schizophrenia Index is five, but there are eight variables which comprise this Index. That is, there are alternative variables which, even if both are positive, will obtain a score of only one on the Schizophrenia Index. (Refer to the Schizophrenia Index on page 7.)

Finally, a component analysis using all nine of the variables comprising the Schizophrenia Index was performed. The data from both groups were combined and a 9 X 9 item intercorrelation matrix was subjected to a principal-component analysis in which a scree plot of eigenvalues was obtained. The scree plot suggested a solution of one to three components. A three component solution was obtained, and the

TABLE IV
INDIVIDUAL SCORES ON SCHIZOPHRENIA INDEX VARIABLES
Experimental Group

Subject	SCZI ¹	X+%	FQ-	FQu	X-%	M-	WSUM6	Sum6 ²	Sum4 ³	Sum2 ⁴	M- ⁵
3	2	0.68	3	4	0.12	0	4	1	1	0	0
6	3	0.54	6	6	0.23	1	0	0	0	0	1
7	4	0.33	13	7	0.33	4	2	1	0	1	4
11	1	0.50	3	9	0.13	0	0	0	0	0	0
12	2	0.61	3	4	0.17	1	2	1	0	1	1
13	1	0.54	1	4	0.08	0	0	0	0	0	0
14	1	0.39	4	10	0.17	0	0	0	0	0	0
15	1	0.57	2	4	0.14	0	0	0	0	0	0
18	4	0.26	9	14	0.29	1	24	10	3	7	1
19	5	0.07	27	8	0.66	2	25	5	5	0	2
21	1	0.49	7	11	0.18	0	0	0	0	0	0
22	4	0.86	0	0	0.00	0	14	5	4	1	0
23	3	0.30	11	10	0.37	1	13	4	2	2	1
28	2	0.27	8	3	0.53	0	1	1	0	1	0
30	3	0.63	4	5	0.17	1	4	1	1	0	1
31	4	0.45	5	6	0.25	1	14	6	1	5	1
32	0	0.74	2	3	0.09	0	2	2	0	2	0
36	3	0.62	2	3	0.15	2	2	1	0	1	2
38	4	0.40	11	12	0.27	0	16	7	2	5	0
39	3	0.32	6	7	0.32	1	2	1	0	1	1

¹Schizophrenia Index

²DV+INCOM+DR+FABCOM+ALOG+CONTAM

³DR+FABCOM+ALOG+CONTAM

⁴DV+INCOM

⁵M- > 1

TABLE IV
INDIVIDUAL SCORES ON SCHIZOPHRENIA INDEX VARIABLES

Control Group

Subject	SCZI ¹	X+%	FQ-	FQu	X-%	M-	WSUM6	Sum6 ²	Sum4 ³	Sum2 ⁴	M- ⁵
1	1	0.70	3	4	0.13	0	0	0	0	0	0
2	1	0.67	1	4	0.06	0	0	0	0	0	0
4	2	0.56	5	9	0.16	0	5	1	1	0	0
5	1	0.59	1	3	0.06	0	0	0	0	0	0
8	3	0.64	4	0	0.35	1	4	2	0	2	1
9	2	0.40	5	4	0.33	0	4	2	0	2	0
10	3	0.46	3	4	0.23	1	0	0	0	0	1
16	2	0.48	7	4	0.30	0	8	3	1	2	0
17	1	0.50	1	4	0.08	0	0	0	0	0	0
20	2	0.42	9	9	0.29	0	8	3	1	2	0
24	2	0.33	7	4	0.39	0	0	0	0	0	0
25	2	0.56	4	12	0.11	1	2	1	0	1	1
26	3	0.55	3	7	0.14	2	5	2	1	1	2
27	1	0.50	2	3	0.14	0	0	0	0	0	0
29	2	0.55	5	5	0.23	0	0	0	0	0	0
33	1	0.48	3	9	0.13	0	3	2	0	2	0
34	2	0.50	4	4	0.25	0	0	0	0	0	0
35	0	0.77	1	2	0.08	0	0	0	0	0	0
37	3	0.68	4	4	0.16	1	2	1	0	1	1
40	0	0.85	0	2	0.00	0	0	0	0	0	0

¹ Schizophrenia Index

² DV+INCOM+DR+FABCOM+ALOG+CONTAM

³ DR+FABCOM+ALOG+CONTAM

⁴ DV+INCOM

⁵ M- > 1

principal component extraction was followed by varimax rotation. The components comprising the three-component solution were not meaningful. However, the solution for the first principal component was meaningful. The component loadings for this first principal component are shown in Table V. Since there were no schizophrenics in either group, this solution shows that all nine of the variables in the Schizophrenia Index have substantial loadings and indicates that these variables intercorrelate in normal samples.

Table VI shows the correlations between the Quick Test scores and each variable in the Schizophrenia Index. These correlations were obtained by combining the subjects for both the control and experimental groups. As Table VI shows, the Pearson correlation coefficients are quite small for all the variables and suggests that there is little relationship between Quick Test I.Q. estimates and Schizophrenia Index variables.

TABLE V
COMPONENT LOADINGS FOR FIRST PRINCIPAL COMPONENT

Schizophrenia Index Variable	Component Loading
FQu	0.55791
FQ-	0.88249
M-	0.52512
DV+INCOM	0.58006
DR+FABCOM+ALOG+CONTAM	0.58333
WSUM6	0.78039
X+%	-0.79016
X-%	0.78550
Schizophrenia Index	0.82197

TABLE VI
CORRELATIONS BETWEEN QUICK TEST AND SCHIZOPHRENIA INDEX

Schizophrenia Index	Quick Test
FQu	.07
FQ-	-.01
M-	.07
DR	-.10
DV	-.15
INCOM	-.09
FABCOM	.13
ALOG	-.01
CONTAM	.00
WSUM6	-.01
X+%	.06
X-%	-.11
SCZI*	.03

*Schizophrenia Index

DISCUSSION

This study addressed the question of whether or not a group informed of the symptoms of schizophrenia could fake this disorder on the Rorschach. Subjects were informed of the symptoms of schizophrenia through a written narrative composed by this author. (See Appendix B.) The results indicate that, as expected, this experimental group was unable to convincingly fake schizophrenia. However, this group did not perform as previous literature would indicate.

The first hypothesis stated that the control group would obtain an average score on the Schizophrenia Index of less than 4. A score of four or greater indicates that there is a high probability of schizophrenia being present in the subject. All control group subjects were screened prior to testing for schizophrenia using the Schedule for Affective Disorders and Schizophrenia (SADS); therefore, it was expected that these subjects would not score high on the Schizophrenia Index. This hypothesis was confirmed. While the mean for this control group ($M = 1.7$) is considerably higher than Exner's (1986) nonpatient sample ($M = .40$), it still confirms that this was a nonschizophrenic sample.

The experimental group was also screened using the SADS to insure that this, too, was a non-schizophrenic sample. Because of the instructions to fake schizophrenia, it was expected that the experimental group would score higher than the control group on the Schizophrenia Index; however, it was still anticipated that the experimental group would not successfully fake schizophrenia.

Therefore, the second hypothesis stated that the experimental group would also obtain an average score of less than 4 on the Schizophrenia Index. The experimental group obtained an average score of less than 4 which supports the second hypothesis. Therefore, as a group, the experimental subjects were unable to successfully simulate schizophrenia even when given a priori information as to the symptoms of this disorder. Some experimental subjects were able to produce high scores on the Schizophrenia Index and these protocols will be discussed later in this chapter.

According to the literature (cited previously), the experimental subjects were expected to fake schizophrenia in certain ways. They were expected to obtain a higher number of Special Scores because of the use of dramatic, bizarre language and illogical reasoning. In other words, fakers usually try to make their Rorschach responses sound bad. However, as Exner (1978) states, fakers are revealed by their perceptual accuracy, which is reflected in the good form quality of their responses. This experimental group of fakers, however, did not perform as expected. To begin with, they obtained a mean X+% of less than 70% ($\bar{M} = .46$). X+ refers to the percentage of form quality ratings coded "ordinary" or "plus" and represents the "goodness of fit" between the response and the contours of the blot. It is interesting to note that the control group also obtained a mean X+% of less than 70% ($M = 56\%$). According to Exner's (1986) sample, the mean X+% for a group schizophrenics is 53%. These results indicate, then, that both of this study's sample groups obtained mean X+% values that more closely resemble schizophrenics than nonpatients. In order to explain these results, Exner's interpretive use of the X+% variable will be examined.

According to Exner (1986):

Interpretively, the X+% provides data that relate to the use of form features of the blots in a commonplace, reality-oriented manner. Although some aspects of perceptual accuracy are related to it, it is probably more of a measure of perceptual and/or mediational conventionality...When the X+% is low--that is, less than 70%--it signifies that the subject tends to translate stimulus fields in ways that are more atypical. A low X+% may be caused by any or a combination of three features, perceptual-mediational distortion, overcommitment to individuality, or failures in modulating affective experiences. (p. 368)

The possibility of perceptual-mediational distortion can be further explored by considering the results of the X-%. X-% is calculated: (Sum Form Quality Minus/Total Responses) multiplied by 100. It reflects a disregard for the appropriate use of the blot contours. These responses are difficult to see and many are impossible to find. They represent violations of reality (Exner, 1986). The control group mean X-% (\bar{M} = 18%) was below Exner's critical value of 20%, but the difference was not significant. The experimental group mean X-% (\bar{M} = 23%) was slightly greater than Exner's critical value of 20%, but the difference was still not significant. The experimental and control group means were not significantly different from each other. While it was anticipated that both groups would exhibit similar X-% means, it was surprising that both groups produced X-% means that were substantially higher than Exner's (1986) nonpatient group mean X-% (\bar{M} = 6%). Since neither the control nor experimental group mean X-% values differed significantly from Exner's critical value for X-%, it does not appear

that perceptual-mediational distortion was the sole contributor to the low X+%.

Exner's second possible explanation for the low X+% is due to an overcommitment to individuality. According to Exner (1986), this is reflected in the overuse of unusual responses (Form Quality that is coded "u" for unusual). These responses can be seen easily and do not violate the appropriate use of the blot contours, but they reflect a less common way of translating the stimulus field. These responses "typify those instances in which the subject exerts some of the features of his or her individuality" (Exner, 1986, p. 369). For subjects who give a large percentage of "unusual" responses, it can "signal excessive commitment to the self, and an unwillingness to adhere to standards of conventionality" (Exner, 1986, p. 369). Both the control and experimental groups in this study had lower means for Form Quality "unusual" (control group, $M = 4.85$, experimental group, $M = 6.50$) than for Form Quality "ordinary" (control group, $M = 10.95$, experimental group, $M = 10.85$). This is similar to Exner's (1978) results when he asked graduate students in psychology to produce schizophrenic-like Rorschach protocols. These students knew Exner's Comprehensive System and were well-informed of the symptoms of schizophrenia. They produced X+% values lower than 70%, but like this experimental group, they exhibited FQu greater than FQ-. Thus, while an overcommitment to individuality likely contributed some to the low X+%, it does not appear to be sole contributor to the low X+%.

Exner's (1986) third possible explanation for a low X+% is due to failures in modulating affective experiences. This is reflected in Form Quality rating coded "no form," such as pure color, pure achromatic

color or pure texture responses (C, C', T), etc. In these responses, the subject does not use form at all in formulating answers (e.g., "That looks like life."). According to Exner (1986), these responses "represent instances in which the subject was unable or unwilling to inject some aspect of control and/or direction to the affective experience...they also reflect a detachment from, or disregard for, reality and conventionality" (p. 369). Exner (1986) notes that, "These people may be quite aware of conventionality but [are] simply unable to modulate their feelings in ways that permit them to engage in conventional behaviors" (p. 369). Both the control and experimental groups obtained FQ no form means that are quite small. (Control group $\bar{M} = .45$ and experimental group $\bar{M} = .85$). Therefore, it does not appear that the failure to modulate affective experiences is a major contributor to the low X+% means.

As presented above, on an individual basis, neither X-%, FQu, nor FQ no form can explain the low X+%. However, when X-%, FQu, and FQ no form are added, the sum constitutes a large part of the total Form Quality. Thus, the sum of these variables, accounts for the low X+%. Interpretively, this means that a combination of perceptual-mediational distortion, overcommitment to individuality, and a failure to modulate affective experiences on the part of the subjects caused the low X+%. While none of the means is high enough to suggest that the subjects distort reality, it does indicate that the subjects in this study translated the blot stimuli in ways that are atypical and different from Exner's (1986) nonpatient sample. Because we know that this was a nonschizophrenic population (i.e., subjects were screened via the SADS), there must be other explanations for these results. One possible

explanation for this finding is that this study employed only college students in the samples while Exner's nonpatient sample was more broadly based. It has been shown on the MMPI that adolescents and college students (ages 14-20 approximately) often score higher on factors relating to individuality and nonconformity and is explained by a striving toward independence and attempts to establish separate identities (Groth-Marnat, 1984). Moreover, these subjects came from a volunteer group of college students, and no attempt was made to stratify the samples. Therefore, we may have simply obtained an atypical sample. The difference may also simply be a regional artifact even though Exner (1986) reports including subjects from the South in his sample. In any case, it would be wise to replicate this study before any firm conclusions are drawn.

Scoring differences must also be considered as a factor in these results. Second scorers were obtained for 15% of the protocols, and the percentage of differences in scoring was often rather large (as much as 57% for form quality ratings and 42% for Special Scores). It is reiterated that only form quality ratings and Special Scores were scored a second time as these are the variables comprising the Schizophrenia Index. The larger percentages occurred on protocols given by experimental subjects, and it is believed that their attempts to fake schizophrenia made scoring difficult. In fact, second scorers often commented that the protocols were difficult to score. These differences in scoring show that there is still subjectivity in scoring even when using Exner's Comprehensive System. It is suggested that a more stringent plan for checking the reliability of scores should be addressed in any replication.

The experimental group in this study did not perform as expected in regard to the use of Special Scores. These scores are coded when dramatic, bizarre language and illogical reasoning is evident in responses. Most fakers typically exhibit this type of response. It could be that in this author's zeal to help fakers understand the perceptual differences in schizophrenics that the informative narrative was structured to emphasize these symptoms rather than the peculiar use of language and illogical reasoning. It also may be that the narrative simply did not adequately explain these symptoms. A third factor may have been social desirability. That is, the subjects may have been reluctant to sound "crazy."

Following testing, each experimental subject was informally debriefed. They were asked questions regarding the helpfulness of the narrative in completing the assigned task, the strategy they employed to fake schizophrenia, and the difficulty in sustaining the task. Most subjects stated that they understood the narrative and found it helpful. One stated that he tried to memorize the narrative. Only one subject stated that the narrative was not helpful ("It didn't say much."); however, this subject obtained a score of four on the Schizophrenia Index, which is a high score. He must have, therefore, obtained some useful information from the narrative.

Strategies included trying to make the responses unusual or abnormal. Subjects reported trying to be creative and imaginative ("I put a lot more imagination in it.") Many exaggerated or changed the images they perceived ("Like if I saw a butterfly, I'd say 'horse'."). Others tried to use opposites ("I just thought of thinking of the opposite of what I would say but when looking at the picture, it was

hard and I'm sure some of them [responses] were just what I saw."). Other strategies were to be more "obscure" or "emotional." Two subjects exhibited unique strategies. One "pretended" he was schizophrenic and this appeared to help as he obtained a score of 4 on the Schizophrenia Index. Another subject stated, "I looked at things from different perspectives, like a feminist, like a child with the rabbit, then the airplane as a member of the service. I just looked at it from different standpoints -- an objective standpoint." Most subjects reported that it was difficult to sustain the task because they would "get lost" in the process and forget what they were supposed to do. Most admitted that some of their responses were what they would have given if they had not been asked to fake schizophrenia. One subject stated that as part of his strategy, he gave responses that he saw but would not have given usually ("I thought that what we might disregard, a schizophrenic would make something of."). This subject's strategy is similar to the theory that schizophrenics have difficulty in screening out stimuli. However, according to Exner (1986), while seeing more in the blots than is reported is typical for all subjects, the majority of these responses maintain good form quality. Thus, the strategy to "tell all" or to give responses that would normally be discarded does not appear to be a viable strategy to fake schizophrenia.

As mentioned earlier, there were some subjects who were able to achieve high scores on the Schizophrenia Index. Five of the experimental subjects obtained a score of 4, and one experimental subject obtained a score of 5 on the Schizophrenia Index. Normally, a score of 4 indicates a high probability of schizophrenia being present, and a score of 5 represents almost a certainty of schizophrenia being

present (except in cases of the chemically addicted, the neurologically impaired and those with learning disabilities). None of the control group subjects obtained scores greater than 3 on the Schizophrenia Index.

The Rorschach protocol for the subject who scored 5 on the Schizophrenia Index will be reviewed briefly to investigate how he attempted to fake schizophrenia. This subject is a white male, age 36. He has been hospitalized once many years ago for major depression. First, it should be noted that this subject correctly answered the 10 quiz questions regarding schizophrenia which indicates that he accurately comprehended the narrative regarding the symptoms of this disorder. It is obvious that this subject was positive for those variables comprising the Schizophrenia Index. Therefore, other Rorschach variables will be reviewed in order to see how he attempted to fake. While it is understood that no one variable should be taken out of context for interpretation, it is necessary for this task to look at the variables separately. First, this subject gave 41 total responses (R). This is an exceptionally high number of responses. According to Exner (1986), the average number of responses for adults is 17-27, and the mean number of responses for inpatient schizophrenics is 20.01. Exner (as cited by Maloney, 1987) reports that malingered profiles contain a high number of responses. Therefore, the first "red flag" that this protocol is faked is the high R.

Secondly, if there is a high number of responses, it is expected that the number of Popular (P) responses will likewise be high. P refers to those responses that occur frequently. Specifically, any response that occurs at least 2500 times out of 7500 protocols in

Exner's (1986) sample is considered a P response. However, this subject gave only one Popular response. This is consistent with attempts to fake on the Rorschach (Seamons, Howell, & Carlisle, 1981; Easton & Feigenbaum, 1967; Feldman & Graley, 1954). The extremely low P in this lengthy protocol is likely due to this subject's attempt to avoid common responses and give atypical responses. A low P by itself does not indicate or contraindicate schizophrenia; however, it does reflect an atypical manner of responding and reflects non-conformity.

The third variable to consider is Lambda. Lambda is a ratio that compares the sum of all pure Form (F) responses divided by the sum of the total number of responses (R) minus the pure Form responses ($\text{Sum F} / \text{Sum R} - \text{F}$) (Exner, 1986). A Lambda greater than 1.20 makes a protocol's validity suspect, and this subject obtained a Lambda of 2.15.

Interpretively, Lambda indicates defensiveness by the subject (Exner, 1986). The incidence of pure F (from which Lambda is calculated) is low among acute schizophrenics (Sherman, 1955 reported by Exner, 1986) but is significantly higher among paranoid schizophrenics (Rapaport, Gill, & Schafer, 1946 reported by Exner, 1986). Therefore, a high Lambda may cause an examiner to consider the possibility of paranoid schizophrenia. However, when Lambda is viewed in context with the high number of responses (i.e., a high R will usually increase Lambda) by this subject, the consideration of paranoid schizophrenia decreases.

This subject also gave seven S responses. S refers to the white space or "negative" space of the blots. The mean S among nonpatient adults approaches 2, but the mode is 1 (Exner, 1986). Interpretively, S relates to a form of oppositionality or negativism. However, S can also indicate positive personality attributes, such as self-assertiveness and

a striving for independence when used sparingly (Exner, 1986). According to Rapaport, Gill, and Schafer (1946, reported by Exner, 1986), the highest incidence of S was found among paranoid schizophrenics.

The final variable to be considered is Ab + Art. These are two content categories. Ab refers to Abstraction and is coded for responses which are presented as an abstract representation, such as, "This looks like fear." Art is also a content category involving percepts of paintings, drawings, decorations, etc. Interpretively, Ab + Art refers to the use of intellectualization as a defense. According to Exner (1986), the nonpatient mean for Ab + Art for adults is 1.14, for nonparanoid schizophrenics is 1.33 and for paranoid schizophrenics is 3.22. This subject gave 14 Ab + Art responses. Therefore, in his attempt to fake this subject became overly abstract.

The question remains, then, whether or not this subject's Rorschach protocol would be detected as a malingered profile or would be accepted as reflecting paranoid schizophrenia. While there are some variables which would indicate the latter, it is believed that the number of responses and the Lambda are too high for this protocol not to be suspect. The high number of responses inflates some of the other variables, making a valid interpretation extremely difficult. However, this subject made a valiant attempt to fake schizophrenia.

The five subjects who obtained scores of 4 on the Schizophrenia Index exhibited elevations on some variables in addition to those that comprise the Schizophrenia Index and those variables discussed above. Some of the variables that these protocols have in common are Pairs, Morbid content, and the Special Score Incongruous Combination. The

Pairs determinant is coded for responses in which two identical objects are reported, based on the symmetry of the blot (Exner, 1986). For example, "There's a woman's head on this side, and the same thing over here." An elevation in Pairs or symmetry by fakers was also seen by Feldman and Graley (1954). Pairs responses reflect egocentricity, self-centeredness or self-concern. There was nothing in the narrative on symptoms of schizophrenia to suggest to subjects that an increase in egocentricity was desirable. It may be that all subjects see more pairs but suppress these responses, much like all subjects see more in the blots than they report. In their attempts to fake schizophrenia, perhaps these inhibitions are lowered and subjects report more pairs.

These subjects also exhibited an increase in the number of Morbid (MOR) content responses, e.g. a smashed bug, a dead bear or a bleeding man. The mean for nonpatient adults is 0.7 and the mode is zero. Schizophrenics average approximately one MOR response. The elevation in MOR responses is similar to the results found by Seamons, Howell, Carlisle and Roe (1981) who report an increase in dramatic responses such as blood, gore and mutilation by fakers. It is believed that the increase in MOR responses was caused by the subjects' attempts to make their responses sound dramatic.

The Special Score Incongruous Combination (INCOM) refers to responses involving the condensation of blot details that are inappropriately merged into a single object (Exner, 1986). For example, "A frog with a mustache." Seamons, Howell, Carlisle and Roe (1981) also report elevations for INCOM by fakers. INCOM is one of the six Special Scores that was expected to be elevated by fakers.

Thus, elevations on R, Lambda, S, Ab+Art, Pairs, MOR, INCOM, and low P, in addition to those variables comprising the Schizophrenia Index, represent some of the ways in which the "better" fakers attempted to simulate schizophrenia.

In summary, this study investigated the ability of informed fakers to simulate schizophrenia on the Rorschach. Subjects were randomly assigned to either the control or experimental group. Subjects were screened prior to testing to insure that all were nonschizophrenics. All subjects were administered a background questionnaire and the Quick Test. For the control group, the subject were given a written narrative regarding the symptoms of Alzheimer's disease. They were then administered a short quiz over the contents of the narrative. Finally, the Rorschach was administered using standard instructions. The experimental group was given a written narrative regarding the symptoms of schizophrenia and a quiz over its contents. Experimental subjects were instructed to take the Rorschach like they thought a schizophrenic would respond. They were further instructed to use the information from the narrative to help in their attempts to fake schizophrenia. Twenty subjects were tested in each group. Univariate t-tests and chi square tests were computed for the variables in the Schizophrenia Index and the test used was based on the amount of skewness and kurtosis for each variable. The results indicate that neither the control nor experimental group was able to successfully fake schizophrenia according to Exner's Schizophrenia Index. These results were as expected. However, surprising results were obtained on variables comprising the Schizophrenia Index. First, the experimental group did not perform as previous literature had indicated. It was anticipated that the

experimental group would exhibit illogical thinking and use bizarre, dramatic language. But, they would retain the perceptual accuracy expected of nonschizophrenics. Instead, these subjects obtained lower indices of perceptual accuracy and did not score significantly high on illogical thinking and bizarre language. In like manner, the control group obtained lower scores relating to perceptual accuracy. While the cause of these results is uncertain, it is likely due to the composition of the sample groups. All subjects were college students with a mean age of approximately 24 years. It is speculated that the results are due to nonconformity evidenced by college students as part of their developmental task of establishing their own identities. However, the results may also be artifactual and not easily explained. Therefore, it is recommended that before any firm conclusions are drawn, this study be replicated. It is also recommended that the number of subjects be increased and that a stratified sample be used. This should tend to remove any artifactual influences from the data. Comments made by subjects during the debriefing also suggested ways of improving this study. The subjects reported that, "It's confusing to see how they [schizophrenics] look at things," and "Maybe I would have done it differently if I really knew one [schizophrenic]." Therefore, it is proposed that there are better ways of informing subjects of the symptomatology of schizophrenia. While one group of researchers used an audio tape to inform subjects of the symptoms of schizophrenia (Albert, Fox, & Kahn, 1980), it also should be helpful to play an audio tape of an actual interview with a schizophrenic. Video tapes should also be helpful. But perhaps the best possible training for fakers is to role-play being a schizophrenic, much like the subject who tried to

pretend he was schizophrenic. While this technique would help train subjects regarding the symptoms of schizophrenia, it would also permit them to relax their ego boundaries, and this should enhance their performance. In essence, the subjects would be given permission, and even encouraged, to act "crazy," something that is usually prohibited.

Finally, the results of this study indicate that like the subjects of numerous previous investigators (Fosberg, 1938; Mittman, 1983; Exner, 1982; Seamons, Howell, Carlisle & Roe, 1981; Pettigrew, Tuma, Pickering & Whelton, 1983), experimental subjects were unable to convincingly fake schizophrenia. While a few subjects obtained high scores on the Schizophrenia Index, these protocols are likely to be detected as faked by an experienced examiner. However, these experimental subjects did not perform as expected. Unlike previous studies (cited above), these experimental subjects exhibited poorer perceptual accuracy and did not use dramatic, bizarre language and illogical thinking. Also, the control group exhibited an $X\%$ that was lower than Exner's (1986) nonpatient sample. Because the present subjects were obtained from nonschizophrenic populations and both groups exhibited low $X\%$ values, it suggests that caution should be exercised in interpreting low $X\%$ values, especially in college populations. Replication on another college sample is advised. This study suggests, however, that college students who are informed of the symptoms of schizophrenia are unable to convincingly fake this disorder on the Rorschach.

This study also addressed the question of validity, in particular, construct validity. As stated earlier, construct validity refers to the extent to which a test measures a theoretical construct or trait, and one way to measure this type of validity is to vary treatment

interventions (Groth-Marnat, 1984). The treatment interventions in this study were the instructions to fake schizophrenia or not to fake. Because these subjects were unable to fake schizophrenia, there was a failure of the treatment intervention. Thus, the inability of subjects to fake schizophrenia combined with Exner's evidence of criterion-related validity of the Schizophrenia Index indicates that the Rorschach has construct validity. That is, the Rorschach indicated "normality" in spite of instructions to fake schizophrenia. Since the subjects in this study were "normals," this indicates that the Rorschach measures what it is supposed to measure (i.e., normality).

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APPENDIX A

DEFINITIONS OF VARIABLES IN THE SCHIZOPHRENIA INDEX

X+% (Conventional Form) This variable concerns the perceptual accuracy for the total record. It is calculated: $\text{Sum FQ} + \text{o} / \text{R}$ where FQ=Form Quality, o=ordinary, and R=total number of responses. Form Quality refers to the "goodness of fit" of the response to the area of the blot that was used in forming the response. Exner uses the following criteria for coding Form Quality:

- + Superior - overelaborated The unusually precise articulation of the use of form in a manner that tends to enrich the quality of the response without sacrificing the appropriateness of the form use. The + answer need not be original, but rather unique by the manner in which details are defined and by which the form is used and specified.
- o Ordinary The obvious, easily articulated use of form features to define an object reported frequently by others. The answer is commonplace and easy to see. There is no unusual enrichment of the answer by overelaboration of the form features.
- u Unusual A low-frequency response in which the basic contours involved are not significantly violated. These are uncommon answers that are seen quickly and easily by the observer.
- Minus The distorted, arbitrary, unrealistic use of form in creating a response. The answer is imposed on the blot structure with total, or near total disregard for the structure of the area being used in creating the response. Often arbitrary contours will be created where none exist.

X-% (Distorted Form) This variable concerns the proportion of perceptual distortion that has occurred in the record. It is calculated: $\text{Sum FQ} - / \text{R}$.

M- M refers to human movement responses and involves the kinesthetic activity of human, or of an animal or fictional character in human-like activity. Minus refers to minus Form Quality.

Special Scores. These scores represent the unusual verbalization present in a protocol. They occur when cognitive disarray, or cognitive slippage, is evidenced. This disarray may manifest in three ways: (1) Deviant Verbalization, (2) Inappropriate Combinations, or (3) Inappropriate Logic.

DEVIANT VERBALIZATIONS:

1. Deviant Verbalization (DV)
 - a. Neologism - Involving the use of an incorrect word, or neologism, in place of a correct word that falls well within the subject's verbal capacity. EX: "A woman with a disretheal air about her."
 - b. Redundancy - Involving the odd use of language that cannot be justified in terms of subcultural idioms or limited vocabulary skills, in which the subject identifies twice the nature of the object(s) reported. EX: "The two twin lips of a vagina."
2. Deviant Response (DR)
 - a. Inappropriate Phrases - Involving the inclusion of phrases that are inappropriate or completely irrelevant to the response. EX: "A bird, but I was hoping to see a butterfly."
 - b. Circumstantial Response - Involving answers that are fluid or rambling in which the subject becomes inappropriately elaborative or has marked difficulty in achieving a definition of the object. EX: "I'm not sure what this could be, so filled with passions and psychological drama and thrills and so many tensions. I had to see it twice. Yes, the nose of a horse."

INAPPROPRIATE COMBINATIONS:

1. Incongruous Combinations (INCOM) - Involving the condensation of blot details or images that are inappropriately merged into a single object. EX: "A frog with a mustache."
2. Fabulized Combination (FABCOM) - Involves an implausible relationship that is posited between two or more objects identified in the blot. EX: "Two chickens holding basketballs."
3. Contamination (CONTAM) - This represents two or more impressions that have been fused into a single response in a manner that clearly violates reality. EX: "The face of a bug ox."

INAPPROPRIATE LOGIC (ALOG) - This Special Score is used when the subject, without prompting, uses strained reasoning to justify his or her answer. EX: "This green must be lettuce because it's next to the rabbit."

CONFABULATION (CONFAB) - At times, the subject attends only to a detail of the blot, but generalizes a response from that detail to a larger area or to the entire blot. That is, a subject might focus on a small area of the blot, but upon questioning includes the whole blot. EX: "It's a claw, it's a lobster."

FQu Refers to Form Quality that is unusual (see previous definition of "unusual").

FQ- Refers to Form Quality that is minus (see previous definition of "minus").

WSUM6 Refers to the weighted sum of the six Special Scores. The weights for each Special Score are as follows: DV=1, DR=3, INCOM=2, FABCOM=4, ALOG=5, and CONTAM=7.

APPENDIX B

NARRATIVE ON SCHIZOPHRENIA

Schizophrenia is a disorder that is often misunderstood. Maybe you have the image of a schizophrenic as someone who talks to him/herself, sees things or hears things that others can't see or hear, dresses in bizarre clothing, and collects garbage. Or maybe you think schizophrenia means "split personality." This paper will tell you what schizophrenia is and what it is not. First, it is not a "split personality." Schizophrenia refers to problems in thinking, feeling and relating to others.

Schizophrenics typically have trouble functioning in day-to-day life. They often withdraw from contact with others and their effectiveness as wage-earners, students, homemakers, etc. is impaired. They frequently do not take care of personal hygiene and grooming, and they may engage in unusual practices, such as collecting garbage. Their feelings or emotions are usually impaired. That is, they may not show any emotion and look "flat" all the time. Or, they may show inappropriate emotions, such as laughing in a sad situation.

But the two most significant symptoms of schizophrenia are the unusual way they see things and their errors in thinking.

Schizophrenics hear and see things in a distorted way. They do not see things like normal people do. That is, they have trouble "calling a spade, a spade." It appears that what goes into the senses (sight, hearing, touch, etc.) gets garbled, and the schizophrenic misperceives

or misinterprets the message. In the very extreme case, this is called hallucinations. This means that they see or hear things that are not really there. But, it is important to remember that schizophrenics have difficulty in correctly "seeing" things. They quite often incorrectly identify what they see or hear.

They also have difficulty in making sense of things. They often draw conclusions that are faulty. For example, a schizophrenic sees several people standing in front of a police station and concludes that they all must be policemen. They may also show thinking that is not at all based on what is real. Frequently, they say things that are quite unusual. They may make up their own words for things or they can "lose their train of thought" and ramble on and on without it making much sense. Thus, the second important symptom of schizophrenia is the difficulty they have in thinking accurately, and this often results in very unusual speech.

QUIZ FOR NARRATIVE ON SCHIZOPHRENIA

PLEASE READ EACH QUESTION CAREFULLY, THEN CIRCLE EITHER TRUE OR FALSE.

1. Schizophrenia refers to "split personality." T F
2. Schizophrenia refers to problems in thinking, feeling, and relating to others. T F
3. A schizophrenic sees things differently than a normal person. T F
4. A schizophrenic never says anything unusual. T F
5. A schizophrenic may call a "midget" a "child" because both are short. T F
6. A schizophrenic's ability to think logically is as good as anyone else's. T F
7. If a schizophrenic says he saw a chicken with boxing gloves, on, it is very unlikely that he actually did. T F
8. A schizophrenic might incorrectly identify a simple itch as bugs crawling on her. T F
9. Hallucinations refer to the very accurate way that schizophrenics see the world. T F
10. For the schizophrenic, disturbances in thinking are often reflected in unusual or peculiar speech. T F

APPENDIX C

NARRATIVE ON ALZHEIMER'S DISEASE

Alzheimer's disease is part of a group of illnesses in which the major symptom is a loss of memory. Primarily, recent memory is lost. Recent memory refers to the events between a few minutes ago and several days in the immediate past. Many people experience memory loss from time to time for a number of different reasons. But with Alzheimer's disease, the memory loss is quite severe and is due to changes taking place in the brain. Long-term memory (memory from long ago, such as childhood memories) is also affected. The memory loss is changeable and unpredictable. That is, the person with Alzheimer's disease may not be able to remember something one day and then be able to recall it the next day.

Although memory loss is the primary symptom of Alzheimer's disease, there are other symptoms as well. There is also a loss of intellectual abilities. That means that the Alzheimer's victim is unable to define words and ideas like he or she once could. His judgment may be impaired, and he may have problems in speaking.

There are generally four phases seen in this disease. The first phase is known as the "forgetfulness phase." In this phase, the person seems to forget things more often, and his or her relatives may not even think that anything is wrong. The person with Alzheimer's disease may often forget where he put his glasses or keys and may forget the names of familiar people. He may also begin to have trouble concentrating and

paying attention, such as when watching television. He often seems to have less energy. He also prefers to stick to situations and people who are very familiar to him, and he can become quite upset in new, unfamiliar settings.

In the second phase of Alzheimer's disease, memory losses continue. He may forget words, do the same errand twice, send two or three letters to the same person, etc. He has trouble planning ahead and making decisions.

In the third phase, the "confusional phase," the problems worsen. The person has trouble with numbers -- counting, telling time, keeping track of the checkbook balance. He has trouble thinking and solving problems. He needs several reminders of how to do things, and he may begin to behave unusually.

In the final phase, the Alzheimer's patient is unable to find his way around his house, and he may wander off and get lost. He needs help with all daily activities, such as bathing and dressing, cutting his own meat at meals. He may not recognize himself when looking in the mirror. His memory deteriorates remarkably, and he is unable to tell you the name of the President, the year or his address.

QUIZ FOR NARRATIVE ON ALZHEIMER'S DISEASE

PLEASE READ EACH QUESTION CAREFULLY, THEN CIRCLE EITHER TRUE OR FALSE.

1. Schizophrenia refers to "split personality." T F
2. Schizophrenia refers to problems in thinking, feeling, and relating to others. T F
3. A schizophrenic sees things differently than a normal person. T F
4. A schizophrenic never says anything unusual. T F
5. A schizophrenic may call a "midget" a "child" because both are short. T F
6. A schizophrenic's ability to think logically is as good as anyone else's. T F
7. If a schizophrenic says he saw a chicken with boxing gloves, on, it is very unlikely that he actually did. T F
8. A schizophrenic might incorrectly identify a simple itch as bugs crawling on her. T F
9. Hallucinations refer to the very accurate way that schizophrenics see the world. T F
10. For the schizophrenic, disturbances in thinking are often reflected in unusual or peculiar speech. T F

APPENDIX D
INDIVIDUAL'S CONSENT FOR PARTICIPATION
IN CLINICAL RESEARCH PROJECT

I, _____, voluntarily agree to participate in this study entitled: THE ABILITY OF INFORMED FAKERS TO SIMULATE SCHIZOPHRENIA ON THE RORSCHACH. I understand that the purpose of this project is to study the ability of people to malingering on the Rorschach, a psychological test. This knowledge will ultimately be useful to mental health professionals and others interested in this topic. This project is being conducted by Annette Miles, M.S., as part of the requirements for the degree of Doctor of Philosophy in clinical psychology. The faculty sponsor is Michael J. Simon, Ph.D.

Participants in this study will be given a background questionnaire, a structured interview, a narrative and short quiz on either Alzheimer's disease or schizophrenia, and the Rorschach. Participants will be randomly assigned to either of the two groups. The amount of time to complete this series of instruments will depend upon each subject, but it is anticipated that at least one and one-half hours will be required.

I understand that participation in this study is strictly voluntary. If I wish to withdraw from the study, I may do so at any time during the procedure and I understand that I'll receive no penalties. I further understand that the information obtained from these instruments is to be used strictly for research purposes. Specific information regarding my performance will not be given to any professors and/or instructors. The overall results will be given to the faculty sponsor. However, all individual and personal information will be kept confidential. I understand that all instruments other than this consent form will be identified by number only and that all consent forms will be separated from test information immediately, making it impossible to identify me individually.

If I have any questions or need to report an adverse effect about the research procedures, I will contact the principal investigator, Annette Miles, at 664-4500 Ext. 246 or Dr. Simon at 664-4500 Ext. 212. If I have any questions about my rights as a research subject, I may contact Dr. Simon.

I have read this informed consent document. I understand its content, and I freely consent to participate in this study under the conditions described in this document.

Date

Signature of Research Participant

Date

Signature of Principal Investigator

APPENDIX E
BACKGROUND QUESTIONNAIRE

1. Age: _____
2. Sex: M F (circle one)
3. Race: (check one)
 White
 Black
 Hispanic
 Native American
 Asian
4. How many years of education have you completed? _____
5. What is your occupation? (For students, parent[s] occupation.)

6. Have you ever been hospitalized for emotional or psychiatric problems? Yes _____ No _____
7. Have you ever received therapy or counseling on an outpatient basis for emotional or psychiatric problems? Yes _____ No _____

APPENDIX F

RORSCHACH ADMINISTRATION PROCEDURES

The following procedures are summarized from Exner (1986) with minor modifications. All modifications remain within the boundaries of Exner's administrative guidelines.

Seating

Exner recommends that the examiner and subject be seated side-by-side.

Introducing the Test

Before the Rorschach is administered, the test is introduced by saying, "And now we will be doing the inkblot test; maybe you've heard of it." This statement can be followed, if necessary, with, "It is just some inkblots that I'll show you and ask you what they might be."

If the subject indicates that s/he is still not prepared to take the test, the examiner may make the following statement, "This test is just part of the research project and provides us with some information about the characteristics of a person, or it helps us to understand something about the personality of an individual."

Administration and Instructions

The cards will be stacked face down and will be presented one-by-one, beginning with Card I. The subject will be asked to hold the card. When Card I is handed to the subject, the examiner says, "What might this be?" If the subject responds with, "It's an inkblot," the examiner replies, "That's right. This is the inkblot test, and I

want you to tell me what it might be." This constitutes the response phase.

If on the first card, the subject gives only one response, the examiner says, "If you take your time I am sure that you will find more than one." If a subject delivers six responses to the first blot, the examiner shall intervene and take the blot from the subject.

Subsequently, if the same subject delivers five answers to Card II, the same procedure should be employed, and so on. Otherwise, no interventions will be made.

After the subject has completed the response phase for all 10 cards, the inquiry phase begins. The following statement is to be generally followed as the preface to the Inquiry:

O.K., we've done them all. Now we are going to go back through them. It won't take long. I want you to help me see what you saw. I'm going to read what you said, and then I want you to show me where on the blot you saw it and what there is there that makes it look like that, so that I can see it too. I'd like to see it just like you did, so help me now. Do you understand?

These instructions may be modified slightly. Exner (1986) provides examples of appropriate questions which helps in obtaining pertinent information during the inquiry.

All responses, both in the response and inquiry phases, will be recorded verbatim. The area of the response will be marked on a locator sheet.

APPENDIX G

MEANS, STANDARD DEVIATIONS, SKEWNESS, AND KURTOSIS

Variable	Mean		Standard Deviation		Skewness		Kurtosis	
	Con	Exp	Con	Exp	Con	Exp	Con	Exp
Age	23.90	23.95	9.48	8.58	1.55	1.55	1.03	1.60
SES	2.90	2.80	.72	.89	.15	.92	-.88	.22
IQ	104.05	100.65	10.28	8.62	.90	-.10	.75	-.10
R	19.85	24.55	7.13	9.40	.82	.54	-.05	-.84
P	4.90	4.50	2.27	2.19	.23	.22	-.46	-.67
FQ+	.00	.00	.00	.00	.00	.00	.00	.00
FQo	10.95	10.85	4.24	4.50	.63	.12	-.36	-.82
FQu	4.85	6.50	2.91	3.60	.98	.39	.75	-.45
FQ-	3.60	6.35	2.33	6.05	.57	2.25	.13	6.60
FQ none	.45	.85	.82	1.49	2.05	2.48	4.08	7.04
M-	.30	.75	.57	1.02	1.84	1.88	2.86	4.46
M no form	.00	.00	.00	.00	.00	.00	.00	.00
DV	.15	.15	.37	.49	2.12	3.44	2.78	11.88
INCOM	.50	1.20	.76	2.04	1.19	1.97	-.04	3.00
DR	.00	.00	.00	.00	.40	1.05	2.74	7.40
FABCOM	.10	.20	.31	.41	2.89	1.62	7.04	.70
ALOG	.10	.80	.31	2.44	2.89	3.39	7.04	11.69
CONTAM	.00	.00	.00	.00	.00	.00	.00	.00
WSUM6	2.05	5.65	2.74	8.11	1.12	1.55	.14	1.20
AG	.45	2.80	.76	8.84	2.19	4.34	5.89	19.11
CONFAB	.00	2.00	.00	8.94	.00	4.47	.00	20.00
CP	.05	.05	.22	.22	4.47	4.47	20.00	20.00
MOR	.90	1.75	1.12	1.83	1.22	1.38	1.35	2.20
PER	.50	.15	1.00	.37	2.63	2.12	7.75	2.76
PSV	.30	.60	.66	1.04	2.08	1.54	3.17	1.04

APPENDIX G (Continued)

ZD	-1.02	1.15	6.08	3.76	.46	.92	.03	1.38
EA	6.20	5.92	3.60	3.94	.62	.71	.04	.37
es	6.50	10.50	3.66	4.58	1.66	.02	4.10	.49
D	-.10	-1.30	1.59	1.59	-1.22	-1.10	1.25	1.22
a	4.50	6.35	2.70	4.11	.82	.37	.51	-.89
p	2.45	3.00	2.19	2.29	1.63	.58	3.30	-.09
Ma	2.25	2.50	1.80	1.93	.72	.56	-.07	-.94
Mp	1.25	1.50	1.12	1.47	.46	1.11	-1.08	.48
Pure C	.75	.65	.97	.81	2.11	1.42	6.13	2.38
Afr	.43	.46	.13	.17	.97	1.49	1.11	2.78
Ego	.40	.30	.27	.20	2.79	.43	9.48	-.08
L	.82	1.41	.72	3.27	2.69	4.16	8.63	17.92
X+%	.60	.48	.13	.19	.52	-.09	.15	-.02
F+%	.64	.45	.24	.24	.23	.56	-.81	.05
X-%	.18	.23	.11	.16	.38	1.31	-.83	2.07
Pure H	2.60	2.90	1.82	2.17	.55	1.03	-.84	.38
SCZI	1.70	2.55	.92	1.39	-.21	-.11	-.59	-1.05
DEPI	1.35	1.50	1.09	1.10	.29	.13	-1.12	-1.26
S-CON	4.90	4.95	1.62	1.50	.10	-.84	-.62	1.16
S1*	.85	.90	.37	.31	-2.12	-2.89	2.78	7.04
S2	.45	.45	.51	.51	.22	.22	-2.18	-2.18
S2A**	.40	.45	.50	.51	.44	.22	-2.02	-2.18
S3	.25	.50	.44	.51	1.25	.00	-.50	-2.24
S3A	.00	.30	.00	.47	.00	.94	.00	-1.24
S4	.00	.25	.00	.44	.00	1.25	.00	-.50
S5	.05	.20	.22	.41	4.47	1.62	20.00	.70
S5A	.05	.15	.22	.37	4.47	2.12	20.00	2.78
Narrative	N/A	9.15	N/A	.93	N/A	-.76	N/A	-.39

*S1 = Schizophrenia Index variable number 1.

**S2A = Schizophrenia Index variable number 2, alternative, etc.

VITA

Annette Miles

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE ABILITY OF INFORMED FAKERS TO SIMULATE SCHIZOPHRENIA ON
THE RORSCHACH

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