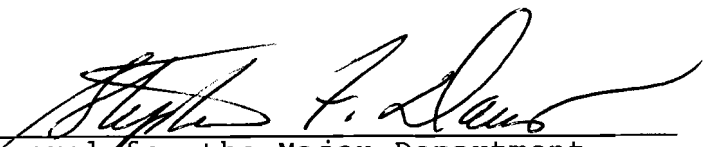


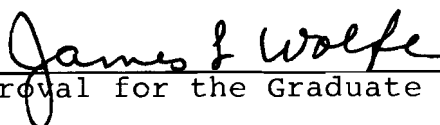
A Comparison Of The M.M.P.I. "Si" Scale
With The Rorschach Psychogram

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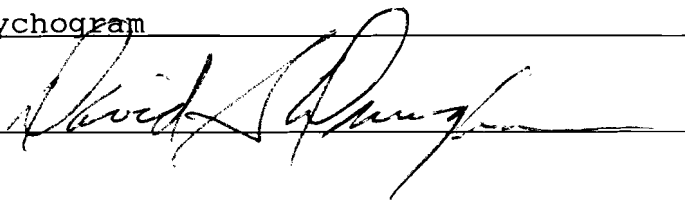
Lucinda B. Anderson for the Master of Science

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In order to compare Klopfer's interpretation of introversion-extroversion on the Rorschach psychogram and the MMPI "Si" Scale, twenty-four college students enrolled in the Personality Theories class at Western State College in Gunnison, Colorado in the Fall of 1988, were administered a group written form of "Si" Scale and an individual Rorschach projective test. Each subject's two scores were recorded and categorized by frequency in a Chi Square contingency table. A statistical analysis of the responses using the Chi Square Technique was made. The results of the study indicated no significance when the MMPI "Si" Scale responses were compared to the same subject's responses shown in the Rorschach psychogram. It was suggested that the MMPI and Rorschach do not measure the same aspects of personality, and the Rorschach not be misused as a tool to measure introversion or extroversion.

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CHAPTER 1
INTRODUCTION

Assessment of personality traits, whether introversive or extratensive, aids in the diagnosis and approach to treatment in clinical psychology settings. Introversive personality traits in a subject imply an individual who "....reworks external reality before reacting to it....reflects the type of personality in which the individual incorporates external stimuli in relation to his/her own personal values, goals, and experience, and then makes decisions in view of such values, goals and personal experience. This person can be hesitant, reflective and slightly on the defensive" ("General Interpretation," 1985). A subject who is extratensive responds to reality as it impinges on him/her "....with a relative lack of restructuring it in the light of his/her own needs and experience. This person is more concerned with how others may want him to be--rather than how he would want himself to be" ("General Interpretation." 1985). The extratensive subject can react to the world by being outgoing, candid, doing all of the popular things expected of

him/her and conforming to social custom and convention. A variety of clinical methods are used in overall assessment which include testing, observation and verbal interaction.

The Rorschach psychogram is used in testing batteries. In the Rorschach, a series of ten cards with one inkblot on each card is shown to the subject. The subject is asked to respond to the card and the responses are recorded by the examiner. Although it is bulky and time-consuming to score, one section of the Rorschach psychogram contains a bar graph on which skewness to the left or right implies an equation with introversion or extratension.

A second commonly used and well respected assessment tool is the Minnesota Multiphasic Personality Inventory (MMPI). The person taking this test answers a series of true-false questions. Drake's "Si" Scale on the MMPI is accepted as a measure of social introversion. After the examiner scores the subject's responses, they are recorded on a psychogram which is the scoring sheet used for the MMPI responses. The subject's responses above the seventy mark are considered noteworthy. High scores suggest that the subject is "...shy, reserved, timid....serious

....reliable and dependable...." (Graham, 1977, p. 61.) Low scores on the "Si" Scale suggest an individual who is "....outgoing, gregarious....interested in power, status, and recognition...." (Graham, 1977, p. 61).

In the article written by Drake (1946), the process behind the development of a MMPI Social Introversion-Extroversion scale was outlined. The Minnesota T-S-E Inventory (Test of Social Extroversion) scores of two groups of female students, with fifty subjects in each group, was used as the criterion. Comparisons were made between the newly-developed MMPI key and the T-S-E social introversion-extroversion scores. The coefficient of correlation was found to be $-.72$ where a high score on the T-S-E indicated introversion. When a following comparison was done with scoring sheets of male subjects, the coefficient of correlation was found to be $-.71$. Drake therefore determined that his newly developed key had equal validity for male and female subjects. The author added that work was being done on similar keys for the Thinking and Emotional I.E. scales, but made no concluding statement regarding the ultimate validity of the social introversion-extroversion key.

Drake and Thiede (1948) studied the activity-participation factor of the Social I.E. Scale of the

MMPI in an experiment using 594 female students from the University of Wisconsin as subjects. Each subject completed an extracurricular information sheet; the activities were divided into six categories, each category received a one or a zero participation point. The subjects also took the MMPI in the card sorting form. Subjects were divided into groups based on the population size of their hometown environment. A comparison of "Si" scores at the high school and university levels was made. The authors found that "...the means for the groups with greater activity-participation were in the extroverted direction..." (p. 555) and that "...only 28% of the activity-participation group reached or exceeded the mean of the other group in the introverted direction" (p. 555). Drake and Thiede concluded that the "Si" Scale of the MMPI was valid when activity-participation was used as a factor in measuring introversion-extroversion.

Gough (1949) did a follow-up study of the work done by Drake (1948) which compared extracurricular activities of high school seniors and their placement on the MMPI "Si" or Social Introversion Scale. In Gough's study, 274 Subjects--147 male and 127 females, were administered a group MMPI and asked to complete a self-

report information sheet on their extracurricular activities. Product-moment calculations were made on male, female, and total figures. The results showed that all of the correlations were statistically significant, where those scoring high on the "Si" Scale --introversion--also participated in fewer outside activities. Gough further used a scatter plot to show that the data were curvilinear and that the product-moment correlations underestimated the relationship between the variables. The author finished by stating that the findings of the study supported the validity of the "Si" scale.

Wheeler, Little, and Lehner (1951) examined the MMPI's individual scales in relation to each other, and further sought the existence of one outstanding factor which would indicate that the MMPI was a screening device or more than one factor which would indicate the relationship between specific diagnoses and specific scales. Twelve scales were examined by factor analysis, but did not include Drake's "Si" Scale. The MMPI group form was administered to 110 neuropsychiatric male patients at a V.A. hospital. The patients ranged in age from 20-63 years and were randomly selected from those tested at the hospital during 1948. A control group was

established from protocols of 112 male college students at U.C.L.A. Thurstone's centroid method of multiple factor analysis was used in the comparison, and Pearson's correlation coefficients for the two groups were made on the raw scores. The authors concluded that the MMPI was an acceptable screening device, although their results did not substantiate their goal of measuring specific clinical diagnoses. The authors stated that differentiation between neuroses and psychoses was possible with the use of the MMPI scales.

Adams, Cooper, and Carrera (1963) examined Klopfer's Rorschach Prognostic Rating Scale in a concurrent validity study using the MMPI. In order to compare the two tests, 36 white male patients from a general medical and surgical hospital were used as subjects. The subjects had a variety of psychiatric diagnoses and educational backgrounds. Each subject was administered the Rorschach according to Klopfer's procedure, the group MMPI, the Welsh A and R, and the Barron Es scales. The Rorschach protocols were scored independently by two raters. Then, the protocols were scored by the raters using Klopfer's Rorschach Prognostic Rating Scale. The total and component scores were intercorrelated with a result that ranged from .93

to 1.00 which suggested high agreement. The Rorschach Prognostic Rating Scale scores were also correlated with the Welsh A and R, and the Barron Es scales. Overall, the number of significant correlations was twice that of expected results. The highest single correlation ($r = .57, p < .001$) was with the "Si" Scale of the MMPI and the weighted "M" on the Rorschach protocol. The authors stressed that the MMPI descriptions of personality for subjects scoring high and low were compared to general statements made after scoring the Rorschach protocols according to Klopfer's method. The authors concluded that the MMPI comparison supported the use of Klopfer's Rorschach Prognostic Rating Scale.

Colligan (1985) presented a detailed development of the MMPI, with special emphasis on the empirical approach used in item selection and categorizing. A short history of the test, including its origin in 1937 with the work of Hathaway and McKinley, was part of the article, along with a descriptive breakdown of each scale. The author stated that a clinical sample and a normal sample of men and women aged 16-65 years old, were used as subjects in the original MMPI scales' development. He added that "Subsequently, scale 0, Si, social introversion-extroversion was developed on a

normal sample of high school and college students. This scale, the only one to be derived from a non-psychiatric sample, was found to be so useful that it was added to the MMPI profile as the last of the ten standard clinical scales" (p. 525). Colligan concluded with the notation that the originators of the MMPI viewed the test as a beginning product which would be improved upon or replaced by better assessment tests in the future.

Beck (1930) described, in general, the claims Rorschach made for his test; gave examples of responses from a "...feebleminded....", "...superior normal....," a "psychotic....," and a "...behavior girl....," (p. 82); and included two comparative case studies. No statistical analysis or experimental investigations were included as part of Beck's article. He concluded by supporting the Rorschach, based on evidence observed in his clinical practice.

Hertz (1934) reviewed the Rorschach's reliability and found that little was written on the issue. Her article examined work by other authors, notably Vernon and the Brush Foundation. The Brush Foundation examined the Rorschach and used a trial testing that revised certain steps, rearranged and changed working materials, demanded uniform administration of directions and a time

limit on the subject's observation of each blot. The test was then administered to 300 junior high school students, statistically analyzed and scored. One hundred records were randomly selected and divided for split-half reliability testing. Although the results of Vernon and the Brush Foundation weren't truly comparable, each indicated that the Rorschach was reliable. Hertz examined further intercorrelations of test factors and presented a detailed summary of her findings. She concluded by stating that "...statistical treatment of the results obtained with the Rorschach test in its modified and standardized form shows the test to be a reliable instrument" (p. 476). A problem arose with the Brush Foundation study. When the administration of the test was standardized by changing and rearranging the working materials and imposing a time limit, it was possible that the inherent nature of the test changed as well. It was no longer the Rorschach. Certain Subject responses that the test elicited might be effected negatively which would ultimately change specified personality traits.

In her article, Hertz (1935), presented an historical summary of the Rorschach. It included a brief biography of Hermann Rorschach, a description of

the Rorschach test, and explanation of what Rorschach expected his test to interpret, and lists of differing authors' views. The lists covered subjects such as reliability, technique, norms, and validity. Hertz approached her historical summary by relating what Rorschach believed about his scale and followed this with the results of the various authors' studies in the areas of intelligence levels, heredity, gender, influence of race, and the age of subjects. The differing authors' approaches reviewed case studies, correlational testing, and test-retest. Hertz concluded her article by giving a detailed list of pros and cons concerning the Rorschach and stated her conviction that the test had a future.

Fosberg (1941) examined the reliability of the Rorschach in four stages. In Stage I, he compared the Rorschach and the Bernreuter Inventory; Stage II was a statistical analysis of the data published by other Rorschach researchers compared to the results of the present study; Stage III showed results of an experimental study with fifty subjects; Stage IV was a special experimental study of sixteen subjects. Tables of reliability factors previously given by researchers were included in the article. One hundred-twenty-nine

subjects, male and female, adults and children, aged 11-56 years old were divided into four groups. Adult subjects were college undergraduates, graduate students, and professors with a minimum of one year of psychology background. The four groups were labeled the Bernreuter Control Group, the Rorschach Control Group, the Main Experimental Group, and the Special Experimental Group. The Rorschach was administered to the four groups, four separate times per group, with four sets of instructions. The first test's instructions included a description of the Rorschach, the second set of instructions encouraged subjects to make a good impression of their personality, the third set of instructions encouraged subjects to make a bad impression of their personality, and lastly, the Rorschach determinants were explained to the subjects and they were encouraged to look for them. Test-retest correlations were calculated on all groups. Results indicated that the Bernreuter Inventory was easily manipulated by the subjects, the Rorschach reliability correlations and test-retest reliability were high. Tables and figures of results were included in the article. The mean test interval for males and females was calculated, as well as the mean age for the

groups. No specific conclusions were listed by the author.

Hertz (1942) began by reviewing the psychological atmosphere in which the Rorschach was created. The author emphasized the fact that "Projective techniques were developed so that today many students of personality no longer rely exclusively upon answers to questions or on minute reactions elicited in the laboratory routine. Nor do they judge the individual solely by comparing him with his fellow" (p. 530). Hertz went on in her survey to examine the importance of standardization in scoring and administration, interpretation, validity of Rorschach concepts, and a support for the use of statistics in examining the Rorschach. The author concluded by stating that energy needed to be expended in the field of psychology toward a better society.

In an article published in the Rorschach Research Exchange, Munroe (1945) reported the need for an efficient Rorschach scoring system, the importance of a skilled examiner during test administration, and the future need for objective ways in which to use the Rorschach to meet specified goals. No experiment was run, or tables and statistics given. The author stated

that the total reliance on the sign method in scoring Rorschach protocols was not recommended. Munroe explained her development and use of a checklist scoring method for the Rorschach protocol. The checklist method was one approach toward quantitative scoring of the Rorschach examined by the author. She also examined the scoring of group-administered Rorschach tests and emphasized the importance of evaluating the protocols holistically. "Holistic interpretation does not mean seeing every isolated item in relation to every other item, but rather consideration of a flexible hierarchy of dynamic patterns" (p. 67). The author closed her article with a statement of encouragement which emphasized discovery and the use of quantitative evaluation of the Rorschach protocols.

In her article, Gustav (1946) investigated the individual form of the Rorschach for "....a quantitative estimate of Rorschach scoring categories...." (p. 258). The author used a three part experiment to discover a scoring inventory which could estimate Rorschach results. Subjects were 130 female college students, aged 16.10 to 25.7 years old. Group A subjects were administered the Guilford-Martin Inventory of Factors, and the individual form of the Rorschach. In Group B,

the tests were administered, but not scored, and used to determine significant relationships with the Rorschach individual test forms. In Group C, the tests were administered and each item was used in a tetrachoric correlation of item by item analysis. Results of Group C were scored by the thirteen scoring keys devised by this study, as well as the second set of results obtained by Group A. A table of the correlations was provided in the article. The author stated that the scoring system which was devised and tested on Group B had a significantly high degree of accuracy scoring Group A. When tested in a new sample, Group C, the positive correlations were limited. The author concluded by suggesting that the clinical usefulness of the Rorschach lay in its ability as a screening device and she emphasized the need for further research.

Cronbach (1949) reviewed statistical methods which had been previously applied to the Rorschach research studies and concluded that "...so widespread are errors and unhappy choices of statistical procedures that few of the conclusions from statistical studies of the Rorschach test can be trusted" (p. 425). The reviewed methods included the use of median and chi-square, normalization of distribution, comparison of mean rank,

ratios and patterns of scores, checklists, correlation of scores and the use of the reliability coefficient. The author encouraged those involved in Rorschach research to choose the best possible statistical tool. He included a ten point guideline to be used in making that choice, and specified point number ten as a call for research to find an "...entirely suitable method for estimating Rorschach reliability...." (p. 426).

Sen (1950) examined the validity of the Rorschach test by factor analysis and analysis of content. In order to do this, 100 Indian men and women, aged 20-25 years old were administered the individual Rorschach, two intelligence tests, and Cattell's test of fluency. The author used Beck's method to obtain the Rorschach results. Each test subject's results were rated by two independent judges, and the Burt and Beck methods. A correlation was set up between the judges' ratings and the intelligence tests. Results indicated that content analysis of the subjects' responses reached higher significance than the Rorschach results. Tables of data were included in the author's article and a factor analysis of the Rorschach categories was part of the experiment. After the factor analysis of categories, a correlation was set up between the factor measurements,

independent ratings, and content-based figures. Again, the author's results suggested that the Rorschach did not reach a significant level. Sen concluded that the results of content analysis were more practical and useable than results of Rorschach testing.

Wysocki (1956) examined the relationship between Rorschach's introversive and extratensive categories of personality and the results exhibited in Rorschach protocols where "...the experience balance proportion, M: Sum C, was calculated for each subject" (p. 42). The author stated that originally Rorschach used movement and color responses to suggest the degree of extratension or introversion. Sen's research was cited as linking content responses rather than movement responses with extratension and introversion. A questionnaire of fifty equally weighted items devised by Neymann and Kohlstedt (1929), and cited in Wysocki (1956), and the reports of educational and military authorities, were the criteria used in the author's study. Group Rorschach tests were administered to 286 adults who were members of the Air Force, Signal Corps, Women's Auxiliary Navy Service, Women's Auxiliary Air Force Service, engineering students, primary school teachers, and students in junior college. The subjects' ages

ranged from 16-46 years. Basically, "...the agreement was too low in both cases for valid assessment of introvert and extravert types by the group Rorschach procedure" (p. 45). The author concluded that his findings did not support Rorschach's original theory of M: sum C, and that the ratio which included form rather than movement gave better results.

Atkinson, Quarrington, and Alp's (1986) article described their study of empirical and conceptual investigations of the Rorschach. One-hundred-twenty articles from forty journals were selected from a sample of Rorschach validation studies. The studies were collected from every fifth year of the Psychological Abstracts, between 1930-1980. A specific criterion for the articles included "...standard, individual administration of all Rorschach plates; comparison groups as part of the study; clinical judgements based solely on the Rorschach; at least ten subjects per sample; the Rorschach not employed as its own criterion; and significance tests in data analysis" (p. 360). A rater, judge, and blind judge were used to code the investigations. The authors stated that the conceptual studies proved more successful at validating the Rorschach inferences than the empirical studies.

Atkinson, Quarrington, and Alp concluded that Rorschach investigations needed to be limited to conceptual studies, and that inadequate research methodology was at fault for the negativity felt toward the Rorschach technique.

Wagner, Alexander, Roos, and Adair (1986) examined internal reliability of the Rorschach. The authors used what Cronbach reported in Wagner, et al, as "...the split yielding the highest correlation ordinarily gives the most nearly comparable halves" (p. 108). Two groups of Rorschach protocols were used: (1) 100 presumably normal pre-medical students enrolled as freshmen at the University of Akron, and (2) 100 subjects who were clinical outpatients. The outpatients were randomly selected from the files of one of the authors and comprised a heterogeneous group. The outpatients were diagnosed with a variety of D.S.M.-III classifications. The diversity of the two samples was seen as a positive factor by the authors. Pre-scored protocols were tabulated and all possible split-half combinations were calculated for each variable. The authors included a table of the results in the article. Maximized reliabilities averaged in the high .70s and this supported Wagner's previous findings. Wagner,

Alexander, Roos, and Adair concluded by promoting the use of the maximization procedure, stating that the projective techniques were "...probably more reliable than previous studies have indicated..." (p. 110). The authors offered solutions to problems found in examining the internal reliability of other projective techniques.

Williams and Lawrence (1954) examined the MMPI protocols, the Wechsler-Bellevue Verbal I.Q.'s, and specific points on the Rorschach of 100 psychiatric patients at Letterman Army Hospital. The patients were selected at random from the files of the Clinical Psychology Section. Thirty-two variables were studied and compared by factor analysis. Five tables of results were included in the article. MMPI scales were shown to be intercorrelated with each other, while the Rorschach variables selected did not correlate with the MMPI clinical scales. Pearson's correlation coefficient and Thurstone's Centroid Method of Factor Analysis were used on the variables. Four factors were obtained and described as: Factor I. Rorschach productivity; Factor II. Negative Loadings of MMPI and Positive Loadings of Rorschach (Bipolar); Factor III. Expressive-Repressive; and Factor IV. General MMPI Dimension of Maladjustment. They concluded by suggesting that the discovery of a

reliable predictor for a Rorschach scale of ego strength was possible and that the results of the MMPI variables were in agreement with previous findings.

Rice, Sternbach, and Penn (1969) examined the Rorschach and MMPI for consensual rather than predictive or concurrently valid judgements. The MMPI profiles, Rorschach protocols, of 100 patients at a large university medical center were selected at random from the psychological testing files. A mixture of inpatient, outpatient, and referral-onlys was obtained. The test protocols were edited and copied or retyped to show only the factors of age, gender, and number of years of education. The next step in the study was that the Rorschach and the MMPI were paired in booklet form and presented to three experienced psychologists. The psychologists were asked to diagnose on that basis; and give an overall diagnosis on the last page of the booklet. A listing of four diagnoses were supplied: neurotic, organic, personality or character disorder, and psychotic. Results of the study listed agreement of diagnosis for the three judges at 76%, 81%, and 88% respectively. The authors focused on the protocols and profiles in which the judges' diagnoses were in disagreement to establish which test weighted the

decision in the final diagnosis. A significant trend was established for the Rorschach impression to predominate in the judges' final decisions. And, yet, results of the individual scores showed that agreement was higher on the MMPI than the Rorschach. When the diagnoses differed, there was a significant tendency for the Rorschach to be seen as an indicator of more pathology than the MMPI. Results suggested that the cautious and concerned clinician would use test results of the Rorschach and MMPI in combination.

There seemed implicit agreement that the MMPI was particularly useful in indicating the degree of control the patient felt over his behavior. The Rorschach generally was taken to indicate a more accurate picture of the depth or extent of psychopathology present (Rice, Sternbach, and Penn, 1969, P. 277).

Smith and Coyle (1969) replicated a study by Holt (1960) in which Rorschach protocols were divided into form level responses of seven types. Holt's seven categories were used as a springboard by the authors to establish two criteria of good form level which they labeled F+% and extended F+%. The scores of twelve white, male college students, who were paid volunteers,

were then set in a Pearson product-moment correlation with MMPI scores processed by computer. Results of the study showed a negative correlation between the total number of Rorschach responses and the extended F+%. The authors suggested that, due to this result, no inferences should be drawn regarding form-level scores on the Rorschach without consideration of the context. They further stated that the study failed to "...replicate Holt's findings in this relatively small group of college students" (p. 6) and concluded that Rorschach form-level scores were not "...related to most MMPI variables within a relatively homogeneous nonpatient group" (p. 6).

In 1975, Wildman and Wildman examined the use of batteries of tests and their "...diagnostic validity of several possible combinations of frequently used diagnostic instruments" (p. 455). Five tests--the Bender Gestalt, House-Tree-Person, MMPI, Thematic Apperception Test, and Rorschach--were administered to ten student nurses and ten female patients at Central State Hospital. Six experienced clinical psychologists judged the protocols. Each judge divided the protocols into a pile for the patients or the student nurses, and were asked to select five protocols which they were

certain belonged to a specific person. The scoring and division was first done on the basis of individual tests, and then on tests done in combinations of the following: Bender Gestalt and HTP, the MMPI, and TAT. The MMPI and the Rorschach were both found to differentiate between the patient and nonpatient at significant levels. The accuracy of predictive power was not increased by combining testing instruments. The authors concluded with a plea for further study of tests in combination.

Kunce and Tamkin (1981) looked at the profiles of 100 psychiatric patients in an acute care hospital who had been tested on the MMPI and the Rorschach. The subjects' MMPI profile similarities were determined and compared to MMPI profiles "...designated as prototypic of social extraversion, thinking introversion and somatization" (p. 6). These basic divisions were then compared in similarity to the Rorschach variables, through a conversion of frequency of response to proportion of total response. Next, MMPI individual scale scores and MMPI personality type scores were correlated to Rorschach proportion scores and compared. Results showed a "...positive association between an introversive thinking personality style and perception

of movement on the Rorschach cards" (p. 7). Information received on color responses on the Rorschach was mixed--with results showing that the structured use of color related to socially reserved behavior, but free use of color did not necessarily relate to outgoing behavior. The individual "Si" Scale did not correlate significantly with the Rorschach variables of color and movement. Further detailed study by the authors included division of the sample into four subgroups separated by age and gender in which their findings were again verified. The authors listed four results of their study which included the linking of color responses to reserved behavior, movement responses to thinking introversion behavior as defined in the MMPI Pt Sc (Thinking Introversion) profile, the low relationship between color responses and extraversive behaviors, and the lack of relationship between movement and color responses on the Rorschach and somatization on the MMPI.

In 1986, Polyson, Peterson, and Marshall studied the Rorschach and MMPI as research tools by using ".... the number of publication references for various tests as a measure of research activity" (p. 476). Their findings did not support the theory that research associated with projective techniques would continue to

decline in the 1970's and 1980's. Rorschach publications were reported to have leveled off, and MMPI publications were reported to have increased since 1974. The authors stated that quantity does not indicate quality of research, and that their data suggested that Rorschach and MMPI tests continued to be popular topics for published research.

The research literature into the reliability, validity, and comparison of the Rorschach and the MMPI was disappointing. The survey of the literature which began with articles from 1929 when the Rorschach test was first found in the literature and continued through the present, included strong problems such as: limited sample size, examiner or subject bias, the use of subjects taken from the literature and the redesigning of the tests themselves. Under the research conditions listed, the results were open to question. Research concerning the quality of the Rorschach was limited. It remains important to establish the quality of the tools which clinicians use to reach what are considered valid and pertinent issues, and to solve core problems.

The problem.

In clinical settings, the use of testing tools is often based on the time needed for administration and scoring rather than the tool's quality in diagnosis and reliability in pinpointing the problem. The Rorschach has suffered as a tool of choice due to this thinking. When the results of the social introversion scale of the MMPI are compared to the results of the psychogram on the Rorschach protocol, is the psychogram an indicator of a subject's personality traits, either introversive or extratensive? Can this relationship be shown to exist in a sample of college students? This is the purpose of my study.

If the present hypothesis is not correct, there will be no significant correlation between the results of the MMPI "Si" Scale and the Rorschach individual test comparison. The alternate to this hypothesis states that there will be a significant correlation between the results of the MMPI "Si" Scale and the Rorschach individual psychogram results.

CHAPTER 2

METHOD

Subjects

The sample consisted of twenty-four students enrolled in the Personality Theories class of the Fall Semester 1988 at Western State College in Gunnison, Colorado. The subjects included male and female students, multi-nationals, and nontraditional students, who ranged in age from 18 to 33 years. Originally, the subjects consisted of thirty-six students in the class. Four students withdrew from the class, and of the remaining twenty-eight students who voluntarily responded to the group MMPI, twenty-four were administered the Rorschach individually by the examiner. The subjects were free to end their participation in the voluntary testing at any time. The subjects were asked to use their social security number as an identifier on their two testing sheets. In this way, privacy was maintained and a means of comparison of the two test results was available. Although there was a small sample size which cannot be expanded to generalized

populations, the subjects were accessible for the project.

Procedure

A written informed consent was administered to those who participated in the study. The subjects read and completed the form, and any questions pertaining to the consent form were answered. After returning the consent forms to the examiner, the subjects were given the Minnesota Multiphasic Personality Inventory "Si" Scale in written form with a cover page of directions. The subjects were allowed one hour in which to respond to the seventy true-false questions which comprised the social introversion scale. In the following week, appointments were made for individual Rorschach test administrations. These appointments extended over a time period of three weeks. During the individual tests, subjects viewed and responded to ten Rorschach cards, presented in order from one to ten. The examiner recorded their responses to the cards with paper and pencil. The examiner presented the Rorschach cards to the subjects twice--presentation and inquiry. Directions to the people tested included an explanation of the procedure and the statement that the subject's

responses were individual, personal and confidential.

CHAPTER 3

RESULTS

In this study, which compared the MMPI "Si" Scale and the Rorschach psychogram protocol, the statistical analysis used was the Chi Square technique. The Chi Square technique dealt with finding out if observed frequencies were different than expected frequencies. The expected frequency of twenty-four subjects would place responses evenly in four categories (six per cell).

Twenty-four subjects participated in the study: 16 females and 8 males. Overall, there were 24 of 28 complete responses (results of two tests), with 8 of 10 males who participated in the study giving complete responses and 16 of the 18 females who participated in the study giving complete responses. Two of the four cells had an observed frequency of less than five responses.

On the individual tests, the MMPI results which were greater than $T = 70$ on the MMPI reporting sheet were considered to be "I" or introversive. The MMPI results which were less than $T = 70$ were considered to

be "E" or extroversive. The Rorschach results that appeared to the left of the center point on the psychogram protocol were listed as "I": or introversive, and the results that appeared to the right of the center point were listed as "E" or extroversive. The determination of introversion and extroversion coincided with the Rorschach description of results of the psychogram, presented in Klopfer and Davidson (1962, p. 147), and the MMPI profile sheet.

Table 1

Chi Square Contingency Table of MMPI vs. Rorschach Responses

		MMPI			N=24 df=1
		I.	E.	Total	
ROR	I.	0 (a)	13 (b)	13	
	E.	3 (c)	8 (d)	11	
Total		3	21	24	

A breakdown of the information presented in Table 1 showed there were no subject responses in the cell

labeled I.I. or MMPI introversive and Rorschach introversive. This would indicate no agreement between the two tests in the area of introversive personality traits. The cell labeled MMPI introversive and Rorschach extroversive contained three responses, which was half the expected number of outcomes or partial agreement on the introversive-extroversive traits. The cell labeled MMPI extroversion and Rorschach extroversion contained eight responses which were two more responses than the expected outcome, which would indicate agreement on identifying extroversive personality traits. The cell labeled Rorschach introversion and MMPI extroversion had thirteen subject responses, seven more than the expected outcome. This result indicated that there was twice the disagreement factor between the two tests than expected when the MMPI stated that personality traits were extroversive and the Rorschach stated the traits were introversive. Since the sample size was small, the computer program applied the Yates correction factor to the results. After the correction factor was applied, the X^2 value was found to be 1.94206. This relationship was found to be insignificant at the .05 level.

CHAPTER 4
DISCUSSION

The establishment of the existence of the personality indicator (introversive/extroversive) in the Rorschach psychogram was not supported. No meaningful relationship was found between the psychogram and the MMPI "Si" scale.

Rorschach's definition of introversion/extroversion, as presented in Klopfer and Davidson (1962, p. 142, 147), dealt with the external stimulation of a Subject rather than the Jungian sense of the terms. Rorschach made the distinction "...between people who are predominantly prompted from within (introverts) and people who are predominantly stimulated from without (extroverts)" (Klopfer and Davidson, 1962, p. 142). Jung defined introversion and extroversion as a mixture within each personality and not as a subject's reaction to an external world. To date, there is nothing in the literature to support Rorschach's views, although this study's results would suggest support for his beliefs.

In this study, when the Rorschach results indicated that a subject's responses were extroversive, the MMPI

stated they were introversive in half of the cases. When the MMPI stated that a subject's responses were extroversive, the Rorschach results indicated that their responses were introversive in twice the expected number of results. A possible explanation for those results was that the MMPI indicated the subject's own beliefs about themselves in their responses. The Rorschach sought an underlying personality system. It cannot be assumed that the Rorschach and the MMPI measure the same aspects of personality. The comparison between the MMPI "Si" Scale and the Rorschach psychogram indicated that the Rorschach psychogram is not an indicator of a subject's personality traits, either introversive or extroversive. The relationship was not shown to exist in this sample of college students.

It was possible that the extroversive parts of a subject's personality were more easily recognized and extracted than the introversive traits. It was possible that the testing did not touch on the introversive traits due to their inherent difficulty in being pinpointed. Another possibility was that the subjects learned to minimize and subdue the introversive parts of their personalities and not report those feelings on self-report inventories. For whatever reason, the

psychogram results, when compared to the MMPI "Si" Scale, suggested a measure of introversive and extroversive personality traits that did not agree with the Jungian definitions.

The results of this study have implications for the use of the Rorschach in clinical settings. Since it cannot be assumed that the two tests--MMPI "Si" Scale and Rorschach psychogram--measure the same aspects of a subject's personality, the use of the two tests in conjunction for a broader subject profile is emphasized. Be wary of relying on one testing device or using the results of the MMPI to support or refute the Rorschach results. It is important not to misuse the Rorschach in clinical settings. The results of this study indicate that the Rorschach psychogram is not an indicator of introversion or extroversion. Previous research would suggest that the Rorschach is a measure of conceptual thinking (Atkinson, Quarrington and Alps, 1986, p. 362) that can differentiate between the patient and nonpatient (Wildman and Wildman, 1975, p. 458). A better application of the Rorschach might be to investigate the intricacies of abnormal psychological thinking and behavior.

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