

AN ABSTRACT OF THE THESIS OF

Frank J. Farinelli for the Master of Science

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Inkblot Test and the Torrance Tests of Creative

Thinking: Unusual Uses. A Preliminary Study

Abstract approved: 

This study investigated the relationship between the Rorschach and the Torrance Tests of Creative Thinking: Unusual Uses. Each test was administered to 39 males and 11 females. Four scores were recorded for each subject: a Rorschach Creativity score (using Holt's Creativity Scale) and three Torrance scores (Originality, Flexibility, and Fluency). Pearson product-moment coefficients were calculated to determine the relationship of the Rorschach score and the three Torrance scores. All of the correlations were statistically significant. The Rorschach Creativity score significantly correlated with originality ($\underline{r} = .63, \underline{p} < .0001$); with flexibility ($\underline{r} = .73, \underline{p} < .0001$); and with fluency ($\underline{r} = .69, \underline{p} < .0001$). This study may contribute to the idea that the Rorschach and the Torrance could be used as a measure of creativity.

The Relationship of Scores on the Rorschach Inkblot
Test and the Torrance Tests of Creative Thinking:
Unusual Uses. A Preliminary Study

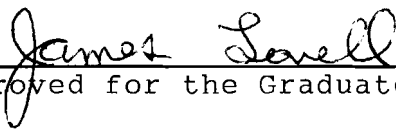
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CHAPTER 1

Introduction

Studies on the Rorschach and creativity are microscopic compared to the vast array of research on the Rorschach in general. Unfortunately, the majority of studies have given credibility to the unfavorable opinion of the Rorschach as stated by Oscar Buros in his introduction to the 1970 Personality Tests and Reviews:

The Rorschach (is the) kingpin of all personality tests judging by the vast amount of material written on it..... This vast amount of writing and research has produced astonishingly little, if any, agreement among psychologists regarding the specific validities of the Rorschach. It is amazing to think that this voluminous research and experimental writing over a period of nearly half a century has not produced a body of knowledge generally accepted by competent psychologists..... It is difficult to understand why the research has been so unproductive. (p. xxxvi)

Oscar Buros is correct in his analysis concerning the largest body of research involving Rorschach interpretation. But these studies focus on determinants

(ratios, whole responses, human movement, animal movement, etc.) with the exclusion of content interpretation. This is also true of the majority of studies involving the Rorschach and creativity which emphasize determinants. However, he is not correct with respect to a small, but significant number of studies involving the content interpretation of creativity.

Content interpretation is not an exclusive procedure. While not ignoring determinants and ratios, content interpretation utilizes scales on which inkblot responses can be scored for a particular characteristic. This allows a comparison between an individual score and that of a group in terms of the degree of that characteristic. However, previous studies involving content interpretation have focused on the process of that characteristic, i.e., creativity.

This study will focus on the person and those characteristics which a creative person may possess. Specifically, it will attempt to determine if the Rorschach and Torrance might be used as a measure of some creative characteristics. Consequently, this study may contribute to the idea that the Rorschach and Torrance could be used as a measure of creativity.

Review of the Literature

In the early 1900's Hermann Rorschach (1942) gave direction to the determinant approach by proposing that inkblot responses could differentiate between creative and non-creative personality types. A creative person, according to Hermann Rorschach, would (1) have the maximum number good form responses (productivity), (2) have the largest number of original responses, (3) have the highest number of organized whole responses, and (4) have the highest number of human movement responses. While Hermann Rorschach gave no statistical data to support these assumptions, most of the subsequent research has been directed toward this determinant approach.

Prados (1944) studied the responses of 20 successful artists. Their ages ranged from 25 to 62 years. The study revealed a high normal amount of responses. Two protocols were below 20, and another two above 100, but the majority fell between 50 to 60 responses. In the majority of cases the F% was high, averaging 39. However, the responses themselves showed good quality and high accuracy with adequate elaboration. Nothing significant could be found in the number of popular or original responses.

Also, he found an overemphasis on whole (W)

and an underemphasis on detail (D). Small details (Dd) and white spaces (S) were generally within normal limits. Similar results were discovered by Steiner (1947), Richter and Winter (1966), and Rawls and Boone (1967).

Prados (1944) also found that human movement exceeded animal movement. Similar results were found by Anderson and Munroe (1948), Harrower and Cox (1943), Richter and Winter (1966), and Steiner (1947). When m (inanimate movement) was used it was within the normal limits.

An attempt to correlate creativity and personality type was conducted by Kincel (1983). He tested 20 subjects with the Jungian Type Survey. Based on this survey the subjects were divided into two groups. The first group consisted of 9 extraverted subjects, 5 females and 5 males. The second group contained 11 introverted subjects, 6 males and 5 females. The criterion for creative capacity was determined by the number of unusual-original responses given to the Rorschach blots. He found that the introverted subjects gave 85 unusual responses as compared to 39 unusual responses given by the extraverted subjects. Their personality type, he concluded, gave them a greater capacity for creativity.

Dudek (1968) used this dispositional approach with the Rorschach psychogram. He hypothesized that people

giving a higher number of M responses (minimum 5) were better equipped to express themselves creatively than those giving low M responses (0-2). He used the TAT, Figure Drawing Test, and the Mosaic Patterns Test to measure a person's ability to express himself creatively. The high M group consisted of 22 subjects. Their mean educational level was 12.7; mean I.Q., 122; and mean age, 33.2. The low M group was comprised of 21 subjects matched as closely as possible to the high M group.

The high M group produced a combined creativity score of 29.2 as compared to 14.8 for the low M group. The distribution of the Rorschach psychogram consisted of 16 introversive, two extratensive, and four ambi-equal subjects. The low M group consisted of one introversive, 11 extratensive, and 9 ambi-equal subjects. The study indicated, however, that only the quantity of M was related to creativity. The quality of M was not correlated to creativity.

Research concerning the relationship between M and creativity is indicative of the contradictory results of the determinant approach. For example, there were many studies that showed a relationship between M and creativity (Anderson and Munroe, 1948; Harrower and Cox, 1943; Hersch, 1962; Prados, 1944; Rawls and Slack, 1968; Richter and Winter, 1966; Steiner, 1947). On the other

hand, there were many studies that did not show a relationship between M and creativity (Cocking, Dana, and Dana, 1969; Griffen, 1958; Rust, 1948; Zubin, Eron, and Schumer, 1965; Roe, 1946a, 1946b, 1946c).

Roe (1946b) illustrated the futility of the determinant approach quite clearly. She studied the Rorschach protocols of 20 highly successful painters. All the painters had won important awards. Eighteen of the 20 listed in Who's Who and had permanent collections in the Metropolitan Museum of Art and the Whitney Museum. Quantitative analysis of the protocols indicated a vast divergence of personalities. Roe stated: "When I first analyzed these records, I was struck by the fact that so few of them could, by any criteria commonly used, be called the records of creative personalities. Since, in fact, all of these men are functioning in society as creative artists, and all have been extremely successful in this function, I felt that independent check of the observation was needed." (Roe, 1946b, p. 89) She sent protocols to Dr. Bruno for blind analysis. He found significant creative ability present in only three protocols.

Baker (1978) tested 77 subjects using the Torrance Tests of Creative Thinking as a criterion measure. The study attempted to measure creativity through the use of

the human movement score (M), the animal movement score (FM), the inanimate movement score (m), and/or, the combined human, animal, and inanimate movement scores. The results showed there was no correlation between the Rorschach scores of M, FM, m, total M on any of the total scores on the Torrance Tests of Creative Thinking.

A review of the literature pertaining to the determinant approach indicates a failure to reliably identify creative individuals (Prados, 1944; Roe, 1946a, 1946b, 1946c; Steiner, 1947; Anderson and Monroe, 1948; Rust, 1948; Zubin, 1954; Griffin, Richter and Winter, 1966; Baker, 1978). While the determinant approach to the Rorschach has produced discouraging results, the conceptual approach, i.e., content interpretation, has gained momentum with consistent results.

Holt (1970), using the conceptual approach, has produced a scoring manual for Rorschach responses. The manual, though unpublished and used only for research purposes, is in its tenth edition. Its purpose is to measure primary and secondary process thinking as related to creativity. It is the basis of numerous studies.

Freud (1905) first suggested this relationship. He believed that thinking was primary when it was wishful and based on subjective reality. It was secondary when it

was rational and based on objective reality. This was not a dichotomous distinction, however, but opposite points on a continuum. According to Freud, all thinking was somewhere between these two points. Theoretically, the less inhibited the thought process, the more primary; and the more primary, the more wishful, fantasy filled and therefore creative.

Kris (1952) carried this concept one step further. While a person may regress to extremely primitive states of neurotic and psychotic thinking, this regression may also serve adaptive ends. These adaptive ends are called "regression in the service of the ego." The ego allows itself to be used rather than be overwhelmed by the primary process. Holt (1960) used the term "adaptive regression" for the same phenomenon. The ego adapts this regression into primary thinking in order to serve its own end of producing an aesthetically pleasing and socially acceptable artistic creation.

Pine and Holt (1960) empirically tested these concepts in a study that achieved amazing correlations. Thirteen male and 14 female college students were selected on the basis of emotional stability and intelligence. Seven tests were administered and a creativity score was computed for each one. The Rorschach, one of the tests, was scored according to the scoring

manual of primary process manifestations (Holt and Havel, 1960). Each Rorschach response was scored according to a four point scale. (It is now a five point scale; Holt, 1970). The rating was based on a composite of statistical infrequency, a quality of richness, and good form level. The responses were then scored for aggressive and libidinal derivatives, anxious content, and bizarre formal qualities. The final ranking for the amount of primary process was based on the proportion of subjects responses that had primary process elements.

A total creativity score was arrived at by summing the scores for each test. Each test was correlated with the amount of expression of primary process, the effectiveness of control over primary process, and the adaptive versus the maladaptive regression.

Correlations for male subjects were exceedingly high. At the .01 level of significance, total creativity correlated .80 for control and .90 for adaptive regression. Also at the .01 level, the Consequences Test (originality) correlated .74 with adaptive regression. Significance at the .05 level (two-tailed test) for Rorschach creativity and control, .27; for Rorschach creativity and adaptive regression, .31.

The female subjects told a different story. Their overall score only correlated .28 with adaptive regression

and .52 with the control score. Pine (1978, p. 247) suggested that "Kris's discussion of the relation of regression in the service of the ego to creativity can be viewed as a broad approximation - an approximation subject to important differences in samples that vary as to age, sex, the absolute level of creativity of the subjects involved, and the nature of the creative production."

In investigating sample differences (Pine, 1962) compared the results from his previous study involving college students (Pine and Holt, 1960) with a new group of unemployed actors. He noted at the outset that the actors appeared less well integrated than the students. The results seemed to confirm his initial impression.

The actors gave more poorly controlled responses than either the male or female students. The scores for amount and control of primary process were negatively correlated in the actors ($\rho = -.25$; $N = 50$) at the .05 level of significance. Additionally, the correlation between the Rorschach scores and the scores of the other tests of creativity were insignificant. There was also no correlation between control scores and adaptive regression scores.

Dudek (1968), however, found positive correlations between primary process thinking and creativity. These

results were consistent with the findings of Myden (1959) and Rogolsky (1966). Dudek (1968) compared a group of successful artists with unsuccessful ones. Testing by means of chi-square showed significant differences. Expression of primary process thinking was 7.3 for successful artists and 4.1 for unsuccessful artists. This was significant at the .01 level (chi-square = 6.9). There was also a significant difference between the two groups with regard to regression content, i.e., successful artists exhibit significantly greater regression content.

When concepts are discussed such as primary process thinking and regression content, a logical question arises with regard to Rorschach responses. What differentiates pathological thinking from creative thinking? Holt wrote:

It is one of mankind's great gifts to be able to abandon reality voluntarily for a little while; to shake free from dead literalism, to re-combine the old familiar elements into new imaginative, amusing or beautiful patterns..... The person who is not asleep and dreaming may therefore fragment and re-combine ideas and images in ways that flout the demands of reality on either of two bases; because he cannot help it due to a temporary or permanent weakness or because he wants to for fun, or for

creative purposes and is able to because he is not too threatened by his unconscious drives (1956, p. 16).

"Threatened" is the key word. Its theoretical ramifications have led to further studies which address the issues of pathological versus creative thinking.

Freud (1924) maintained that thinking which deviates from objective reality, i.e., realistic experience, produces anxiety. However, anxiety will be eliminated if unrealistic experiences are logically integrated in a coherent fashion (Kris, 1952). This integration allows a person to express potentially anxiety arousing experiences in a rational manner. Some people seek and enjoy this integration process (Kris, 1952). Those who enjoy this kind of experience, i.e., creative people, have been studied to determine if they show a high tolerance to unrealistic experience (TUE).

The Rorschach is a perfect medium for people with high TUE because of the unstructured nature of the test. Feirstein (1967) tested 20 college students for TUE. He used the Rorschach, scored with the Holt system, the Art Preference Test, and the Work Association Test. On the Rorschach, integration was positively correlated with TUE ($\underline{r} = .46$, $p \leftarrow .05$, two tailed). Preference for abstract art (Art Preference Test) showed negative

correlation to total TUE ($\underline{r} = .-11$). However, there was a positive correlation between the preference for fantastic art and total TUE ($\underline{r} = .49$, $\underline{p} < .025$). On the Word Association test the correlations between shift score and total TUE was $\underline{r} = .62$, $\underline{p} < .01$. There was also a positive correlation between the number of unusual associations and total TUE ($\underline{r} = .52$, $\underline{p} < .01$).

TUE is similar to the concepts of "ego-close" and "ego-distant" as developed by H. M. Voth (1962). Voth and Mayman (1963) suggested "that because the ego-distant individual has a greater capacity to detach attention from external circumstances and less dependence on external stimuli, he has a greater capacity to turn his attention inward, thus being free to experience private thoughts and fantasies..... the more 'reality distant' a person is, the more vivid, rich, and compelling are the fantasies and imagery he experiences" (p. 371). Using the Holt system for scoring manifestations, the Rorschach and the Torrance Tests of Creative Thinking (Form B, 1966) were administered to 47 college students to measure these concepts.

The results indicated that individuals with ego-distant personality characteristics would produce more primary process thinking. The total fluency for the Rorschach correlated $.44$, $\underline{p} < .001$ with autokinetic length

and .58, $p < .001$ for contradiction of reality.

Silverman (1963) in a study comparing the Rorschach responses of schizophrenic patients with those of neurotic patients found significant correlation between thought disturbance and aggressive imagery. His study was evidential of the fact that creative thinking was not the same as, and could be differentiated from pathological thinking.

Primary process expression has significantly correlated with creativity (Dudek, 1968; Pine and Holt, 1960; Rogolsky, 1966; Silverman, 1965; Feirstein, 1967). The Holt system of scoring manifestations has been used in all of the studies.

Holt (1970) presented data indicating that the mean creativity rating (Cr) was useably valid. A correlation of .43 ($p < .01$) was obtained with clinical ratings of Murray's needs for Construction (creative) and Understanding. It was also significantly related to two factors of the Brick Uses Test, experimentally independent measures of creativity: Flexibility, $r = .54$, $p < .01$; Fluency, $r = .41$, $p < .01$.

However, in previous studies, the creativity rating given each Rorschach response was subsequently contaminated by the scoring for primary process thinking. This study will focus exclusively on Holt's (1970)

creativity scale and it's relationship to three independent measures of creativity: originality, flexibility, and fluency.

RORSCHACH

Responses to the Rorschach will be rated for creativity. The rating system was developed by Holt (1970) and involves originality based on statistical infrequency of the response. The sensitive use of determinants, appropriate elaboration, a quality of richness and good form level are also considered. The scale is a five-point one, the most original and/or "rich" responses rated 5, which popular responses, unless extensively elaborated, are rated 1. The average creativity score for each Rorschach will be used to determine the degree of correlation with the criterion measure.

TORRANCE TESTS OF CREATIVE THINKING: UNUSUAL USES

The Unusual Uses Test is a cognitive measure of creativity which is believed to assess at least three abilities related to creativity. This instrument will form the criterion measure for Holt's Creativity Scale.

The Unusual Uses Test is a fairly direct modification of Guilford's "Brick Uses Test" which can be scored for

"ideational fluency," "flexibility," and "originality." A relationship between fluency of ideas and creativity was hypothesized by Guilford when he invented the test, noting "everything else being equal, the creative person can call up a relatively large number of ideas per unit of time" (1951). Thus the Torrance version of the test is scored for ideational fluency by counting the number of relevant responses produced in a ten-minute time period.

Guilford operationally defined originality as the degree of "cleverness" shown in a response to a test as determined by raters. He hypothesized a close relationship between cleverness and creativity. A similar concept is used in the Unusual Uses Test to measure the originality of responses. A response is said to show "creative strength" if it is "characterized by being beyond what is learned, practical, habitual, and away from the obvious and commonplace" (Torrance, 1974). Originality on the Torrance is determined by the "creative strength" of the response. The scale is a three-point one (0-2). Explicit examples of responses are given in the manual. Most responses not listed in the manual are given the maximum two points.

Guilford also hypothesized a relationship between flexibility of mental operations and creativity. One

type of flexibility, the spontaneous shifting of mental sets, was tested through the Brick Uses Test, which was scored for flexibility "by the number of classes or families of uses given" (1951). The higher the number of classes, the greater the ability to shift mental sets. Mental flexibility is scored on the Unusual Uses Test by categorizing the uses listed by a subject, then counting the number of categories used. The test manual contains a list of 28 possible categories to guide the scorer.

CHAPTER 2

METHOD

Subjects

The sample for this study consisted of 50 subjects who were tested by graduate students enrolled in Projective Techniques: Rorschach, (PY 845). The testing occurred during the spring of 1988.

The sample included 11 females and 39 males. At the time of testing, the females' range in age was from 18 to 68 years. The mean chronological age was 31 years. The males' range in age was from 12 to 60 years. The mean chronological age was 27 years.

The subjects signed a statement explaining the reason for this study and the testing procedures. Confidentiality was observed, and the subjects were identified only by age and sex. Names were not listed. Additionally, an application for the approval to use human subjects was submitted to Emporia State University's Review Board for Treatment of Human Subjects, and was subsequently approved.

Variables

In this study there were four variables, all of which were score data.

Variable 1: Each subject has a Creativity score on the Rorschach.

Variable 2: Each subject has a score for the area of Originality on the Torrance.

Variable 3: Each subject has a score for the area of Flexibility on the Torrance.

Variable 4: Each subject has a score for the area of Fluency on the Torrance.

Materials

Each subject was administered the Rorschach Inkblot Test and the Torrance Tests of Creative Thinking: Unusual Uses. The precise directions were followed in the respective test manual.

Procedure

Each subject was individually administered the Rorschach and the Torrance to obtain appropriate scores for each test. Tests were administered by clinical

psychology students in the exact manner described in the respective test manuals. To prevent experimenter bias, the author of this study did not administer any of the tests involved in this study. Each Rorschach and Torrance was numbered from 1 to 50 to correspond with its appropriate subject.

The Torrance tests were scored by two independent raters. The raters scored each test for originality, flexibility, and fluency. The tests contained no demographic information pertaining to the subjects. They were simply numbered from 1 to 50 to correspond to its appropriate Rorschach.

Each Rorschach was scored for an average creativity score by this author. However, this author had no knowledge of any of the Torrance scores.

Statistical Design

The procedure described above produced four scores for each subject; one score obtained from administering the Rorschach and three scores obtained from administering the Torrance. Group means and standard deviations were determined for each variable. The Pearson product-moment correlation was used to estimate the relationship of the Rorschach scores with each of the three scores obtained from the Torrance.

CHAPTER 3

RESULTS

Four scores were obtained from administering the Rorschach Inkblot Test and the Torrance Tests of Creative Thinking: Unusual Uses to 50 subjects (39 males, 11 females). The means, the standard deviations, and the ranges of the obtained scores are presented in Table 1.

Table 1

Descriptive Statistics for Creativity Scores on the Rorschach and Mental Abilities Scores on the Torrance

TEST	<u>M</u>	<u>SD</u>	<u>Range</u>
Rorschach			
Average Creativity	1.80	0.69	1-3.60
Torrance			
Originality	10.44	9.68	0-57
Flexibility	9.44	6.29	1-44
Fluency	12.56	9.52	1-57

Pearson product-moment coefficients were computed for inter-rater reliability on the Unusual Uses Test. The inter-rater reliability was originality, .99; flexibility, .97; and fluency, .97.

Pearson product-moment coefficients were computed to determine the relationships between the Rorschach creativity scores and each of the three mental ability scores obtained from the Torrance. Table 2 provides the summary of the correlations. All of the correlations were statistically significant ($p < .0001$).

Table 2

Correlations of Scores on the Rorschach and the Torrance

Tests	<u>r</u>
Unusual Uses: Originality -Rorschach	.638
Unusual Uses: Flexibility -Rorschach	.738
Unusual Uses: Fluency -Rorschach	.692

Note. All of the r values achieved statistical significance ($p < .0001$).

CHAPTER 4

DISCUSSION

There is a significant correlation between creativity, as measured by Holt's creativity scale, and three mental abilities, as measured by the Torrance. Creativity for the Rorschach significantly correlated with originality ($\underline{r} = .63, \underline{p} < .0001$); with flexibility ($\underline{r} = .73, \underline{p} < .0001$); and with fluency ($\underline{r} = .69, \underline{p} < .0001$). The significant correlation of the Rorschach with three independent measures of creativity may contribute to its use (Rorschach) as a possible measure of creativity.

Perhaps one of the more important contributions of this study is the validation of Holt's creativity scale as a measure distinct from the concept of primary process thinking. Previous studies have found that primary process expressions have significantly correlated with creativity (Dudek, 1968; Myden, 1959; Pine and Holt, 1960; Rogolsky, 1966; Feirstein, 1967). But in each of these studies the creativity score was only a small percentage of the total score. The total score included

a creativity score, a score for the amount of primary process expression, a score for the effectiveness of control over primary process expression, and a score for the adaptive versus the maladaptive regression.

Consequently, the creativity score, in its purest form, was contaminated by the scoring for primary process thinking. The creativity score in this study was the total score, not a percentage. The validity of Holt's scale, as used in this study, may lead future research to attempt to identify different characteristics of a creative person. This might be accomplished through the use of criterion measures other than the Torrance.

Additionally, because of the disparity of male and female subjects, a correlational comparison was not attempted. Further studies may want to address this issue. It also may be useful to compare the creativity scores of children with those of adults.

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