

**A STUDY OF THE RELATIONSHIP OF THE SIMILES TEST
AND THE TORRANCE TESTS OF CREATIVE THINKING**

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AND THE TORRANCE TESTS OF CREATIVE THINKING

An Abstract
Presented to the
Graduate and Research Council of
Austin Peay State University

In Partial Fulfillment
for the Requirements for the Degree
Master of Arts

by
Holly Ruth Merkison
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ABSTRACT

The twofold purpose of the present study was to determine the degree of relationship between the scores on the Torrance Test of Creative Thinking (TTCT) and scores on the Similes Test, and to determine the intercorrelations of the Similes and TTCT Verbal Form A.

The subjects were 53 undergraduate students enrolled in various psychology classes during the Summer of 1987, Fall of 1988, and the Winter of 1988 at Austin Peay State University, Clarksville, Tennessee. The instruments were administered in group settings.

The Pearson product-moment correlation technique was used in the analysis of the data. Significant correlations were obtained between the Similes Form I and the scores on the TTCT Verbal Flexibility and Verbal Originality.

Similes Form I and Form II were correlated .573, which was significant at the .001 level.

Intercorrelations for the Verbal Form A of the Torrance Tests of Creative Thinking were obtained.

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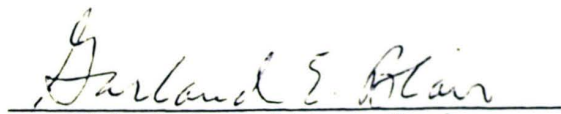
To the Graduate and Research Council:

I am submitting herewith a Thesis written by Holly Ruth Merkison entitled "A Study of the Relationship of the Similes Test and the Torrance Tests of Creative Thinking." I have examined the final copy of this paper for form and content, and I recommend that it be accepted in partial fulfillment of the requirements for the degree Master of Arts, with a major in Clinical Psychology.

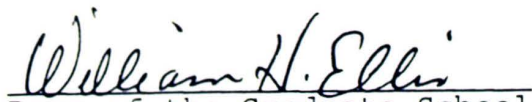

Major Professor

We have read this thesis and
recommend its acceptance:


Second Committee Member


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Accepted for the Graduate and
Research Council:


Dean of the Graduate School

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CHAPTER 1

Introduction to the Problem

Since the time of Plato, philosophers, artists, educators, psychologists, and other professionals have attempted to explain creativity (Rothenberg, 1976). In 1950, J. P. Guilford's presidential address to the American Psychological Association was an impetus to creativity research. He stated less than .2 percent of the literature was devoted to creativity, therefore, emphasizing and recognizing a need for increasing research in the dynamics of creativity and increasing creative performance (Guilford, 1959).

Research in creativity began to blossom during the 1960s. Backtold and Werner (1970) estimated that by 1967 there were approximately 500 doctoral dissertations relating to creativity. Since 1967, there has been a dramatic increase of studies, articles, books, and conferences on creativity (Isaksen, Stein, Hills, & Gryskieniez, 1984).

Creativity is derived from the Latin Creare: to make, and the Greek Krainein: to fulfill (Young, 1985). Creativity is a multifaceted phenomenon and arriving at an accurate definition is difficult. Common concepts

that are prominent in the definition of creativity are novelty, innovation, originality, and spontaneity. Definitions of creativity range from the notion that creativity "is simple problem-solving to conceiving it as the full realization and expression of all an individual's unique potentialities" (MacKinnon, 1978, p. 46). Some authors contend that creativity is the ability to bring something new into existence, such as a product, while others believe creativity is a process, a kind of person, or set of conditions.

Torrance (1974) defined creativity as diverting from conformity and as requiring innovative behavior rather than habitual behavior. Some researchers believe that a creative contribution must be true, general, and surprising in view of what existed at the time of discovery (Selye, 1967). Gornick (1985) describes a creative person as one who ruminates continuously on the nature of life, then experiences repeated relief and excitement when an insight comes, and is intent on working out the idea. Some researchers infer that the term "creative" be given to those who possess a rare or particular kind of ability, while other researchers believe the term should be applied to all essentially healthy individuals (Torrance, 1974).

Freud viewed creativity as a behavioral manifestation of sublimation in which the person directs unconscious

impulses to socially acceptable behaviors; therefore producing a creative product (Bloomberg, 1973). Jung (1966) saw creativity as coming from the unconscious and combining with the conscious until a more satisfied, complete stage is fulfilled in which individuation is the product. Fromm (1958) contended creativity is experienced when one reaches inner maturity; it requires flexibility between rational and emotional, objective and subjective experiences. Maslow (1959) perceived the creative process as one in which a person integrates and resolves dichotomies and fuses primary and secondary processes. Primary processes come from the unconscious, and is the source of new discovery, novelty, and ideas which continue to prosper. Secondary processes are the rational, logical productivity demonstrated by efficient, well adjusted successful people.

Torrance (1974), aware of the diverse definitions of creativity, focused on factors affecting creative growth. He defined creativity as a:

process of becoming sensitive to problems, deficiencies, missing elements, disharmonies and similar things; identifying the difficulties; searching for solutions, making guesses, or formulating hypothesis about the deficiencies, testing and retesting these hypotheses and possibly modifying and retesting them; and

finally communicating the results (p. 8).

Ausubel (1963) objected to this definition because it does not distinguish between creativity as a highly particularized and substantive capacity and as a generalized constellation of intellectual abilities, personality variables, and problem-solving traits.

Another objection to Torrance's definition is that it does not distinguish between creative problem-solving and other types of problem solving. Newell, Shaw, and Simon (1962) contend that problem-solving is creative when one or more of the following conditions are met:

1. The product of the thinking has novelty and value;
2. The thinking is unconventional, in a sense that it required modification or rejection of previously accepted ideas;
3. The thinking requires high motivation and persistence, taking place either over a considerable span of time, i.e., continuously or intermittently, or at high intensity; and,
4. The problem as initially posed was vague and undefined so that part of the task was to formulate the problem itself.

Torrance (1974) devised the Torrance Test of Creative Thinking (TTCT), which samples a wide range of abilities in the field of creative thinking. The TTCT consists of ten sub-tests which are grouped into figural

and verbal batteries. The verbal battery contains seven activities which require the subject to think in terms of possibilities. The figural battery contains three tasks which stimulate the subject to be original, flexible, and elaborate. The TTCT Manual (1974) cites the results of several studies of scorer reliability indicating a range of inter-score correlations from .86 to .99. Studies on alternate form reliability with intervals of one to two weeks yielded coefficients ranging from .71 to .93. Generally, the verbal scores appear to show higher reliabilities than the figural scores. The current study utilized Verbal Form A.

The Torrance Manual (1974) contends that to ensure content validity, a consistent and deliberate effort was made to base the test stimuli, test tasks, instructions and scoring procedures on the best theory and research available. Analyses of the lives of indisputably eminent and creative people, the nature of performance regarded as creative, research and theory concerning the functioning of the human mind, were considered in making decisions regarding the selection of test task. A diligent attempt was made to keep the test tasks free of technical or subject matter content.

Generally, there is little evidence of a relationship between the Torrance Tests and everyday life criteria of creative achievement. Anastasi (1968) contends

that on going longitudinal studies cited in the manual should contribute toward predictive validation. Torrance, Tan, and Allman (1970) conducted a long range, i.e., eight years, predictive validity study of the TTCT in a sample of 114 junior elementary education majors. The measure of verbal originality differentiated the subjects on 69 creative behaviors at the .05 level or better. A composite index of creative teaching behavior was devised and found to correlate .62 with the originality score and .57 with the total creativity score on the TTCT.

In 1971, a 12 year follow-up of the 1959 University of Minnesota high school population was conducted (Torrance, 1972). The data collected were almost identical to the data collected in 1966 from the class of 1960. Completed questionnaires were obtained from 236 of the original 392 subjects, providing rich data concerning the creative behavior of young people. The correlation between the creativity predictors and the criterion variables of Quantity and Quality of Creative Achievement was .51, significant at the .01 level.

Schaefer (1971) viewed creativity as the ability to see resemblances and/or make comparisons between two dissimilar objects such as a simile or metaphor. He considered a metaphor or simile amenable to measurement. He, therefore, devised the Similes Test to identify poetic or literary talent.

Stumberg (1928) was one of the first to demonstrate the value of a metaphorical thinking test in differentiating creative and noncreative people. The Similes Test was one of ten tests that were employed to discriminate two groups of subjects, one possessing and the other lacking poetic talent. Stumberg found that of the ten tests, the Similes and Controlled Association tests significantly differentiated the two groups.

Pearson and Maddi (1966) devised a multi-choice format of the Similes Test, the Similes Preference Inventory. The test purports to measure the subject's preferences for variety or novelty.

The present research employed the Similes Test Form I and II, which uses an open-ended format. The test consists of ten simile items in which the subject is allowed to complete the simile in anyway she/he chooses, with space for three different responses.

Schaefer (1971) in the Similes Test Manual cites normative data and scorer reliability indicating a range of inter-scorer correlations from .93 to .98. The Similes Test Manual (1974) cites a study of alternate form reliability yielded a coefficient of .60 ($p < .01$, 63 df). Anastasi and Schaefer (1969) found that the Similes I correlated .31 ($p < .05$, 50 df) with a life history inventory designed to measure creative achievement in the writing field.

Schaefer (1970) conducted a validity study in which fifth grade students were selected on the basis of their creative work in class. The groups were similar in academic achievement but differed on production of creative work in the classroom. Each group was administered the Similes I, Torrance Incomplete Figures and Unusual Uses Tests, and a specially prepared Creative Attitude Survey. The results suggested that the creative group scored significantly higher than the control group on two of the four tests in the battery: Similes I ($t = 2.31$, $p < .05$) and Unusual Uses ($t = 2.36$, $p < .05$). Pearson and Maddi (1966) conducted a study with 70 subjects, and the results suggested the Similes II appears to be tapping the factor of verbal creativity. In an unpublished thesis, Okon (1985) found no correlation between the scores on the figural subtest of the TTCT and the two forms of the Similes Test. However, a significant correlation was found between the two forms of the Similes Test ($r = .403$, $p < .01$).

Yamamoto (1964) encouraged researchers to obtain inter-relationships between current creativity tests, produce more studies on reliability and validity of creativity tests, and provide more data on normative distribution of creative quality. The current research focuses on determining the relationship between the two creativity tests, the TTCT Verbal Form A and the Similes Test Form I and Form II.

CHAPTER 2

Method

The Sample

The sample consisted of 53 volunteer undergraduate students from various psychology courses from Summer 1987 to Winter 1988 at Austin Peay State University, Clarksville, Tennessee. There were 35 females and 18 males within the age range of 18-55, with a mean age of 25.4 years. The subjects were 15 freshmen, 16 sophomores, 10 juniors, and 12 seniors. There were 43 white and 10 nonwhite participants.

Description of the Instruments

The TTCT test booklet, Thinking Creatively with Words is composed of seven subtests. The Verbal Form A was used in the present study.

In Thinking Creatively with Words, the first three activities utilize a provocative picture to which the subject responds by (1) writing all the questions one needs to ask to find out what is happening; (2) listing possible causes of the action depicted; and (3) listing possible consequences of the action. Activity 4 invites the subject to list ways of improving a toy elephant so that children will have more fun playing with it.

Activity 5 asks the subject to list unusual uses of cardboard boxes. Activity 6 requires the subject to ask unusual questions that could be asked about boxes. Activity 7 asks the subject to list all the consequences of a situation, if an improbable situation were to come true. The battery yields a total score in each of three traits: fluency, flexibility, and originality. Weighting of scores is provided in the manual for each category.

The Similes Test booklet, Form I and II, consists of ten statements to which the subjects were required to give original responses, with space for three different responses. An original response is defined as one that is both novel (unusual, fresh) and of genuine merit (apt, meaningful). The responses that show greater degree of originality are assigned higher scores. The score weighting is given in the manual and a complete scoring guide is provided.

Procedure

Testing was administered in groups of two to seven people. In each group, the subjects were allowed to choose their seat. During the introduction, the purpose of the study and the testing procedure was explained.

Similes Form I booklets were distributed. The directions were read aloud by the experimenter while the subjects read silently from the test booklet. The subjects were allowed 15 minutes to complete the task. Upon

completion, the Similes Form I booklets were collected. The TTCT, Thinking Creatively with Words, Verbal Form A was distributed. The directions were read by the experimenter while the subjects read them silently. Time limits of each subtest was enforced as stated by the testing manual. The TTCT total test time was 45 minutes. The TTCT testing booklets were collected. Subjects were allowed to take a five minute break. Similes Form II booklets were distributed. Directions were read aloud by the experimenter while the subjects read them silently. The subjects were allowed 15 minutes to complete the test. The total testing time for the three tests was 1 hour and 15 minutes.

CHAPTER 3

Results

The Pearson product-moment technique was used to compute the correlation coefficients. A correlation coefficient of .573 between Similes Form I and Similes Form II was significant at the .001 level. Similes Form I and Verbal Fluency did not significantly correlate. A correlation of .344 was obtained between Verbal Flexibility and Similes I at the .05 level. Verbal Originality and Similes I correlated .378 at the .01 level (Table 1). Verbal Fluency, Verbal Flexibility, and Verbal Originality did not significantly correlate with the Similes Test Form II (Table 2). Means and Standard Deviations were as follows: Similes I $\bar{x} = 68.660$, S.D. = 15.709; Similes II $\bar{x} = 70.774$, S.D. = 14.104; Verbal Fluency $\bar{x} = 91.717$, S.D. = 27.188; Verbal Flexibility $\bar{x} = 39.094$, S.D. = 15.709; Verbal Originality $\bar{x} = 95.283$, S.D. = 33.609 (Table 3).

Intercorrelations between the three measures of the TTCT were significantly correlated. Verbal Flexibility and Verbal Fluency yielded a correlation coefficient of .813, Verbal Fluency and Verbal Originality correlated .762. An r of .686 was obtained between Verbal Flexibility and Verbal Originality. All intercorrelations were significant at the .001 level (Table 4).

TABLE 1
Correlation Between the TTCT Verbal Form A, and
Form I of Similes Test of Creativity

Item	r	Significance
Verbal fluency	.198	N.S.
Verbal flexibility	.344	.05
Verbal originality	.378	.01

TABLE 2

Correlation Between the TTCT Verbal Form A, and
Form II of Similes Test of Creativity

Item	r	Significance
Verbal fluency	.139	N.S.
Verbal flexibility	.210	N.S.
Verbal originality	.237	N.S.

Correlation between Similes I and II ($r = .573$, $p < .001$)

TABLE 3
Means and Standard Deviations

Item	Mean	SD
Similes I	68.660	15.709
Similes II	70.774	14.104
Verbal fluency	91.717	27.188
Verbal flexibility	39.094	15.709
Verbal originality	95.283	33.609

TABLE 4

Intercorrelations Among Three Measures Derived from Verbal
Form A of the Torrance Test of Creative Thinking

Measure	Verbal Flexibility	Verbal Originality
Verbal fluency	.813 *	.762 *
Verbal flexibility		.686 *

* .001 level

CHAPTER 4

Discussion

Given that the two instruments used in the present study purport to measure creativity, it appeared plausible to assume that there would be a positive and significant correlation between the scores derived from those instruments. All correlation coefficients except two were nonsignificant. Similes Form I scores correlated significantly with those on the TTCT Verbal Flexibility. Similes Form I scores and those derived from Verbal Originality were significantly correlated.

The results of the statistical analysis of the data suggest the Similes II and TTCT are not measuring the same aspect of creativity. These findings contradict the findings of Pearson and Maddi (1966), which found that the Similes II was correlated with the three verbal tests--Ask Questions, Unusual Uses, and Just Suppose. Perhaps the answer to the puzzling problem is to be found in the definition of the specific type of creativity being measured. Schaefer (1971) used the term metaphorical thinking as being one aspect of creativity, whereas Torrance (1974) encompasses flexibility, fluency, and originality in the definition of creativity.

A significant correlation was found between Forms I and II of the Similes Test, thus indicating the two forms are to some extent measuring the same type of creativity. However, the .57 coefficient means that the variance is about .32. The low common variance could account for the lack of correlation between the Similes II and the TTCT. Perhaps the Similes II is not measuring the same type of creativity as the TTCT.

A comparison of Torrance's (1974) intercorrelations and the present study reveals interesting similarities. For instance, the Torrance study shows a correlation of .81 between Verbal Flexibility and Verbal Fluency. In the present study a correlation of .813 was obtained. Torrance found a correlation of .69 between Verbal Originality and Verbal Fluency. The present study reveals an r of .76. Torrance reported a coefficient of .71 between Verbal Originality and Verbal Flexibility. A coefficient of .68 was found between these two variables in the present study. The correlation coefficients in the Torrance study achieved significance at the .05 level or higher. The coefficients in the present study were significant at the .001 level.

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