A STUDY OF THE CORRELATION BETWEEN SCORES ON THE TORRANCE TESTS OF CREATIVE THINKING AND SCORES ON FORMS I AND II OF THE SIMILES TEST OF CREATIVITY

AUGUSTINE UDUAK OKON

A STUDY OF THE CORRELATION BETWEEN SCORES ON THE TORRANCE TESTS OF CREATIVE THINKING AND SCORES ON FORMS I AND II OF THE SIMILES TEST OF CREATIVITY

A Research Paper

Presented to

the Graduate Council of

Austin Peay State University

In Partial Fulfillment of

the Requirements for the Degree

Master of Science

---

by

Augustine Uduak Okon

April, 1985

To the Graduate Council:

I am submitting herewith a Research Paper written by Augustine Uduak Okon entitled "A Study of the Correlation between Scores on the Torrance Tests of Creative Thinking and Scores on Forms I and II of the Similes Test of Creativity." I recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Science with a major in Guidance and Counseling.

John D Martin
Major Professor

Accepted for the
Graduate Council:

William H Ellis
Dean of the Graduate School

ACKNOWLEDGEMENTS

The author wishes to express sincere appreciation to Dr. John D. Martin, Professor of Psychology, Austin Peay State University, who suggested the problem, and who guided, advised and supported him in various ways during the course of study.

Appreciation is extended to Dr. Garland Blair and Dr. Susan Kupisch, Department of Psychology, for their comments and support.

The author wishes to express a very special and sincere gratitude and appreciation to Dr. Linda Rudolph, Chairperson, Department of Psychology, Austin Peay State University, without whose help, support and guidance his successful completion of the program would have been impossible.

A most gracious appreciation is also extended to Mrs. Martha Woodall who did all the typing and whose ready smiles made life a lot easier around the Department.

The contributions of the students who served as subjects are also hereby acknowledged.

TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION TO THE PROBLEM

Creativity has been described as humankind's most valuable resource in coping with life's stresses (Torrance, 1962). Guilford (1959) believed that the people of this country, as well as others, began to recognize a need for increasing creative performance and for the understanding of the underlying dynamics of creativity itself.

Creativity is a difficult concept to define; there are almost as many definitions of creativity as there are researchers in the area. Nevertheless, concepts such as curiosity, imagination, discovery, innovation, and invention feature prominently in most definitions of creativity.

Some definitions of creativity were derived in terms of a product (discovery and invention); others in terms of a process, a kind of person, or a set of conditions. Some writers feel that a creative contribution or behavior must be true, general, and surprising in view of what existed at the time of discovery (Selye, 1962). Some researchers believe that the term "creative" should be given only to those who possess very rare or particular kinds of ability, while at the same time, there are those who apply the term to essentially all healthy individuals. A survey of the literature yielded various definitions by researchers in the area.

Murray (1959a) said that creativity is the formation of new and consequential patterns of activity, and that it is also the centrally determining capacity of nature, more especially human nature. Freud viewed creative persons, particularly artists, as having an unusual capacity to arrive at sublimation (Klein, 1971). The creative process, thus, originates from inside the individual and the creative product reflects unconscious images which have been processed into socially acceptable forms by the ego (Freud, 1958a; Taylor, 1975).

Getzels and Jackson (1962) summarized Freud's position as follows:

1. Creativity has its origin in conflict, and the unconscious forces motivating the creative "solution" are akin to the unconscious forces motivating the neurotic "solution."

2. The psychic function of creative behavior is the discharge of pent-up emotion resulting from conflict until a balance is attained.

3. Creative thought originates from the elaboration of the "freely rising" fantasies and ideas related to daydreaming and childhood play.

4. The creative person accepts these "freely rising" ideas; the noncreative person inhibits them.

5. It is when the unconscious processes become, so to speak, ego syntonic, that we have the occasion for creative achievements.

6. The role of childhood experience in creative production is emphasized, and creative behavior is seen as a continuation and substitute for childhood play.

As did Freud, Jung (1966) saw creativity as springing from the unconscious. It was his view that the creative process, so far as we are able to follow it at all, consists in the unconscious activation of an archetypal image and in expanding and modelling this image into the end product. Jung (1933) essentially postulated two kinds or processes of creativity. First, there is a psychological type which deals with materials drawn from the realm of human consciousness and experience. There is, in addition, the "visionary" type of creativity which stems from the unconscious.

For Rank (1932) creativity is a construct central to the understanding of healthy human behavior. He saw creativeness as being responsible for artistic production of life experience. That is to say that lived experience can only be understood as the expression of volitional creative impulse.

Alfred Adler theorized that the individual possesses a creative power to shape his or her own life (Ansbacher & Ansbacher, 1956). Adler saw the creative self as being the yeast that acts upon the facts of the world and in the process transforms those facts into a personality that is subjective, dynamic, unified, personal, and uniquely stylized. The creative self gives meaning to life; it creates the goal as well as the means to the goal. The creative self is the active

principle of human life (Hall & Lindzey, 1970).

Maslow (1963) felt that the concept of creativeness and the concept of the healthy, self-actualizing, fully human person seem to be coming closer and closer together, and may perhaps turn out to be the same. Maslow (1958) divided creativity into two categories: the primary and secondary creativity. Primary creativeness is that which comes out of the unconscious, and it is the source of new discovery, of real novelty, of ideas which depart from what exist at this point. Secondary is the rational, logical productivity demonstrated by capable, well adjusted successful people.

Fromm (1955) sees creativity as stemming from people's basic need for transcendence. He theorized that in the process of creation humankind transcends him or herself as a creature, raises him or herself beyond the passivity and accidentalness of his or her existence into the domain of purposefulness and freedom. In a person's need for transcendence lies one of the roots for love as well as for art, religion, and material production.

On the basis of an analysis of the diverse ways of defining creativity and the requirements of a definition for keeping a program of research focused on factors affecting creative growth in context, Torrance (1966) 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.

Motamedi (1982) argued that "creativity requires becoming intimate with the phenomenon, remaining attentive to the occurrences, and staying free to learn, unlearn and relearn" (p. 85). Whiteside (1981) was of the view that "those who create must be willing and able to tear down existing ideas and structures to make way for the new and the untried. They must abandon tradition with its certainties, in favor of innovation, with its uncertainties. Conscious thought must surrender to the dark matrix of the unconscious where inspiration is conceived and nurtured" (p. 190).

Newell, Shaw, and Simon (1962) state that problem-solving may be called creative when one or more of the following conditions are met:

1. The outcome of the thinking has novelty and value;

2. The thinking is original in a sense that modification or rejection of previously accepted ideas becomes necessary;

3. The thinking requires high motivation and persistence, and takes place either over a long span of time (continuously or intermittently) or at high intensity; and

4. The problem as initially formulated was vague and ambiguous so that part of the task was to formulate the problem itself.

Simpson (1962) described creative ability as the potential which one manifests by one's power to break away from the usual trend of thoughts into an altogether different pattern of thought.

An extensive survey of the literature indicated that contemporary researchers and writers in the field of creativity still fall back on the definitions of creativity used by earlier authorities in the field, and this is reflected in the definitions of creativity cited in the present paper. It could be deduced, therefore, that the definition of creativity has not changed significantly over the years.

The above definitions of creativity seem to suggest that the importance of the contributions of creative individuals to the progress of humankind cannot be over-emphasized. Whiteside (1981) argued that because creative individuals are brave, all humankind becomes a bit braver; because they struggle to achieve fulfillment, the integrity of the species is enhanced. Their vision, so disturbingly acute, permits the rest of us to see more clearly a reality that is always present but, for most of us, obscured by ego-induced myopia.

Discussion of the Validity and Reliability of the two Tests

Torrance (1966) devised the Torrance Test of Creative Thinking (TTCT) which samples a rather wide range of abilities in a universe of creative thinking abilities. The TTCT is composed of ten sub-tests which are grouped into figural and

verbal batteries. The TTCT manual (1966) cites the results of several studies of scorer reliability indicating a range of inter-scorer correlations from .76 to .99. Studies on alternate-form reliabilities with intervals of one to two weeks yield coefficients ranging from 0.70 to 0.90. In general, the verbal scores show higher reliabilities than the figural scores (Torrance, 1966).

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. Analysis 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. An assiduous attempt was made to keep the test tasks free of technical or subject matter content (Torrance, 1966).

In general, there is little evidence of a relationship between the Torrance Tests and everyday life criteria of creative achievement. On-going longitudinal studies, cited in the manual, should contribute toward this type of validation (Anastasi, 1968). Torrance, Tan, and Allman (1970) conducted a long-range (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.

The 12-year follow-up of the 1959 University of Minnesota high school population was conducted in 1971 (Torrance, 1971). The data collected were almost identical to those secured 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 (Quantity and Quality of Creative Achievement) was .51, significant at better than the .01 level.

Stumberg (1928) was among the first researchers to demonstrate the value of a similes test in differentiating creative and non-creative individuals. The Similes Test was one of a series of 10 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 in the battery, only the Similes and Controlled Association tests significantly differentiated the two groups.

In a more recent article, Pearson and Maddi (1966) report the construction of a similes test that has a multiple-choice rather than open-ended format. This test, entitled the Similes Preference Inventory, is designed to increase the subject's preference for variety or novelty.

In contrast to the multiple-choice format of the Similes Preference Inventory, the similes test that was employed

in the present research uses the open-ended format in which the subject completes the simile in any way he/she wishes, with space provided for three different responses.

Anastasi and Schaefer (1969) found that Similes I correlated .31 ($p < .05$, 50 df) with a Biographical Inventory score designed to measure creative achievement in the writing field. Gardner (1963) found only moderate correlation of the similes test with measures of academic achievement; he thus argued that general intellectual ability is a necessary but not sufficient condition for creative achievement.

Schaefer (1970) conducted a validity study with two groups, each of which consisted of ten fifth graders; one group was selected on the basis of their creative work in class and the other group selected for their lack of creativity. The two groups were administered Similes I, Torrance Incomplete Figures and Unusual Uses tests, and a specially prepared Creative Attitudes Survey. The results indicated that the creative group scored significantly higher than the control group on two of the four tests in the battery, namely: Similes I ($t = 2.31$, $p < .05$) and Unusual Uses ($t = 2.36$, $p < .05$). From the above findings, Schaefer argued that the similes test has proven to be a valid instrument relative to a criterion of creative achievement in the classroom.

Chapter 2

METHOD

The Sample

The sample consisted of 40 undergraduate students enrolled in adolescent psychology during the Fall Quarter, 1984, at Austin Peay State University, Clarksville, Tennessee. There were 6 males and 34 females who participated in the present research and they all did so voluntarily. The sample consisted of freshmen, sophomores, juniors, and seniors. They ranged in age from 17 to 40 with a mean age of 22.70.

Description of the Instruments

The TTCT is composed of ten subtests which are grouped into a figural and verbal battery. The first battery is entitled Thinking Creatively with Pictures; the second, Thinking Creatively with Words. The Figural Form A was used in the present study.

Thinking Creatively with Pictures consists of three activities:

1. Picture Construction--subjects were required to start from a darkly colored egg shaped figure and draw an unusual picture "that tells an interesting and exciting story."

2. Picture Completion--This activity provides incomplete figures which subjects were asked to add lines to and sketch some interesting objects or pictures and make them tell as

complete and as interesting a story as possible.

3. Lines--This activity provides pairs of straight lines. Subjects were asked to see how many objects or pictures they could make from the pairs of straight lines, and they were asked to make their picture tell as complete and as interesting a story as possible. Four total scores are obtained: Fluency, Flexibility, Originality, and Elaboration. The manuals accompanying the Torrance battery provide detailed scoring guides with many examples.

The Similes Test is composed of Forms I and II. The two forms consist of statements to which subjects were required to give original responses. An original response is defined as one that is both novel (unusual, fresh) and of genuine merit (apt, meaningful). Responses that show greater degree of originality are assigned higher scores. The score weighting is given in the manual which also contains a complete scoring guide.

Administration and Scoring

Both the TTCT and the Similes Test were administered to the subjects in groups by this researcher during the Fall Quarter, 1984, at Austin Peay State University, Clarksville, Tennessee. Each test was scored according to its directions manual and scoring guide.

Chapter 3

RESULTS

The Pearson product moment technique was used to compute the correlation coefficients. The correlation between Similes Forms I and II was significant ($r = .4033$, $p < .01$). The correlations between TTCT and Similes Forms I and II are shown in Tables 1 and 2 respectively. In Table 3 are given the means and standard deviations.

Table 1

Correlation Between the TTCT Figural Form A, and Form I of Similes Tests of Creativity

Item	r	Significance
Figural fluency	-0.1419	N.S.
Figural flexibility	-0.0253	N.S.
Figural originality	0.0073	N.S.
Figural elaboration	-0.057	N.S.

Table 2

Correlation Between the TTCT Figural Form A, and Form II of Similes Tests of Creativity

Item	r	Significance
Figural fluency	0.041	N.S.
Figural flexibility	0.038	N.S.
Figural originality	0.033	N.S.
Figural elaboration	0.022	N.S.

Correlation between Similes I & II

($r = .403$, $p < .01$)

Table 3

Means and Standard Deviation

Item	Mean	SD
Similes I	60.75	10.09
Similes II	70.175	12.934
Figural fluency	20.775	6.359
Figural flexibility	17.65	5.177
Figural originality	25.475	8.956
Figural elaboration	51.2	28.02

Chapter 4

DISCUSSION

It appeared plausible to assume that creativity could be expressed in both figural and verbal productions. Another but related assumption was that a significant correlation would be found between the scores on the figural subtest of the Torrance Test of Creative Thinking and the scores on the two forms of Similes Test of Creativity. However, no significant correlation was obtained by the present researcher.

The results of the statistical analysis of the data of this study seem to suggest that there are many facets of creativity, and that they are likely to be manifested in different ways. It is then possible that the figural subtest of the Torrance Test of Creative Thinking and the Similes Test of Creativity are measuring different aspects of creativity.

The results of the present study agree with that of an earlier study conducted by Pearson and Maddi (1966). In that study they found that Similes II did not correlate with the Torrance Test of Creative Thinking, figural form A. They, therefore, concluded that the Similes Test appears to be tapping the factor of verbal creativity.

There was, nevertheless, a significant correlation between forms I and II of the Similes Test of Creativity, thus indicating that the two forms of the Similes Test are measuring the same aspect of creativity.

REFERENCES

Ansbacher, H. L. & Ansbacher, R. R., Eds. (1956). The individual psychology of Alfred Adler. NYC: Basic Books.

Anastasi, A. (1968). Psychological testing. London: The Macmillan Company.

Anastasi, A. & Schaefer, C. E. (1969). Biographical correlates of artistic and literary creativity in adolescent girls. Journal of Applied Psychology, 53, 267-273.

Freud, S. (1958a). Formulations on the two principles of mental functioning (1911), Standard Edition, Vol. 12.

Fromm, E. (1955). The sane society. NYC: Holt, Rinehart.

Getzels, J. W. & Jackson, P. W. (1962). Creativity and intelligence. NYC: John Wiley.

Guilford, J. P. (1959). Personality. New York: McGraw-Hill Book Co., Inc.

Hall, C. S. & Lindzey, G. (1970). Theories of personality, Second Edition, NYC: John Wiley.

Jung, C. G. (1933). Modern man in search of a soul. NYC: Harcourt, Brace.

Jung, C. G. (1966). On the relation of analytical psychology to poetry. The spirit in man, art and literature, Vol. 15. The collected works of C. G. Jung. NYC: Bollingen Foundations.

Klein, R. H. (1971). Creativity of psychopathology: A

theoretical model. Journal of Humanistic Psychology, 11, 1, 40-52.

Maslow, A. H. (1958). Emotional blocks to creativity. In The further reaches of human nature. NYC: Viking Press.

Maslow, A. H. (1963). The creative attitude. In The further reaches of human nature. NYC: Viking Press.

Motamedi, K. (1982). Extending the concept of creativity. Journal of Creative Behavior, 16, 75-86.

Murray, H. A. (1959a). Preparation for the scaffold of a comprehensive system. In Koch, S. (ed.) Psychology: A study of a science, Vol. 3. NYC: McGraw Hill.

Newell, A. J., Shaw, J. C. & Simon, H. A. (1962). The processes of creative thinking. In H. E. Gruger, G. Terrell, & M. Wertheimer (eds.) Contemporary approaches to creative thinking. New York: Atherton Press.

Pearson, Ph. H. & Maddi, S. R. (1966). The similes preference inventory: Development of a structured measure of the tendency toward variety. Journal of Consulting Psychology, 30, 301-308.

Rank, O. (1932). Art and artist. NYC: Alfred Knopt.

Schaefer, C. E. (1970). The similes test: A new measure of metaphorical thinking. Proceedings, 78th Annual Convention, APA, 169-170.

Selye, H. (1962). The gift for basic research. In G. Z. F. Bereday & J. A. Lauwreys (eds.) The gifted child: The yearbook of education. NY: Harcourt, Brace and Jovanovich.

Simpson, R. M. (1962). Creative imagination. American Journal of Psychology, 33, 234-243.

Stumberg, D. (1928). Biographical correlates of artistic and literary creativity in adolescent girls. Journal of Applied Psychology, 53, 267-273.

Taylor, I. A. (1975). A retrospective view of creativity investigation. In I. A. Taylor & J. Getzels (eds.) Perspective in creativity. Chicago: Aldine.

Torrance, E. P. (1962). Guiding creative talent. Englewood, NY: Prentice-Hall, Inc.

Torrance, E. P. (1966). Torrance tests of creative thinking: Norms technical manual. Princeton, N.J.: Personnel Press.

Torrance, E. P. (1971). Long-range predictive studies and international applications of the Torrance tests of creative thinking. Paper presented at the XVII International Congress of Applied Psychology, Liege, Belgium.

Torrance, E. P., Tan, C. A., Allman, T. (1970). Verbal originality and teacher behavior: A predictive validity study. Journal of Teacher Education, 21, 335-341.

Whiteside, M. (1981). Rare beasts in sheepfold. Journal of Creative Behavior, 15, 189-199.