

A STUDY OF THE COMPARABILITY OF TWO  
INSTRUMENTS DESIGNED TO MEASURE  
ORIGINALITY IN PRESCHOOL  
CHILDREN

By

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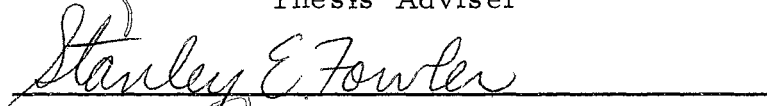
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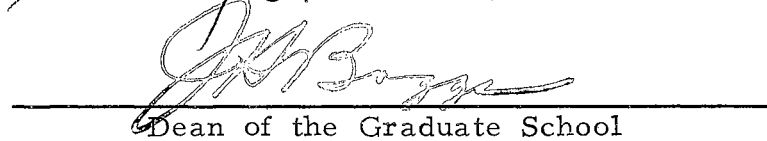
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## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Purpose . . . . .	1
Problem . . . . .	1
Procedure . . . . .	2
II. REVIEW OF LITERATURE . . . . .	4
Introduction . . . . .	4
Ways of Measuring Originality . . . . .	5
Originality Tests for Adolescents . . . . .	5
Originality Tests for Elementary School Children . . . . .	7
Originality Tests for Preschool Children . . . . .	9
Implications for the Present Research . . . . .	11
III. METHOD AND PROCEDURE . . . . .	13
Subjects . . . . .	13
Development of the Research Instrument . . . . .	14
Research Design . . . . .	14
Recommended Analysis . . . . .	15
IV. RESULTS . . . . .	16
Reliability of the Instrument . . . . .	17
Sex Differences in Originality . . . . .	18
Age Differences in Originality . . . . .	19
Comparison of the Two Instruments . . . . .	20
Rank Order of Scores . . . . .	20
Changes in Scores from First to Second Test . . . . .	20
Distribution of Scores . . . . .	22
Item Analysis . . . . .	22
Summary . . . . .	24
V. SUMMARY AND RECOMMENDATIONS . . . . .	26

Chapter	Page
Recommendations . . . . .	27
SELECTED BIBLIOGRAPHY . . . . .	29
APPENDIX A . . . . .	30
APPENDIX B . . . . .	34

## LIST OF TABLES

Table	Page
I. Number of Children, by Sex, Scoring High, Medium and Low on Form-B of a Research Task Designed to Measure Originality in Preschool Children . . . . .	18
II. Number of Children, by Age, Scoring High, Medium and Low on Form-B of a Research Task Designed to Measure Originality in Preschool Children . . . . .	19
III. Medians and Ranges of Scores Obtained in Two Test Sequences . . . . .	21
IV. Distribution of Scores Obtained on Form-A and Form-B of the Originality Instrument . . . . .	22
V. Total Number of Plus-Responses for Individual Items on Form-A and Form-B of the Originality Instrument . . . . .	23
VI. Descriptive Data for Individual Children Participating in the Development of a Research Instrument (Form-B) Designed to Measure the Originality of Preschool Children . . . . .	31
VII. Descriptive Data for Individual Children, Given a Test-Retest Sequence A-B, in a Study of the Comparability of Two Instruments Designed to Measure the Originality of Preschool Children .	32
VIII. Descriptive Data for Individual Children, Given a Test-Retest Sequence B-A, in a Study of the Comparability of Two Instruments Designed to Measure the Originality of Preschool Children .	33

## CHAPTER I

### INTRODUCTION

#### Purpose

The purpose of this research was to compare two research instruments designed to measure originality in preschool children. One instrument developed by Cronquist (1964) and a similar instrument developed by the writer were used in a test-retest study which provided the data needed for a comparison of the two instruments.

#### Problem

During recent years increased attention has been focused on creative ability, and many attempts have been made to identify creative talent and to increase understanding of the development of creativity. Both creative expression and creative learning have been explored in a variety of ways, and many of these studies have focused on divergent thinking. In contrast to this, the usual intelligence test is concerned with convergent thinking which is now recognized as testing only a part of a child's mental ability. A measure of both divergent and convergent thinking is needed to give a more complete picture of a child's mental ability.

Early efforts to study creativity were focused on adults and

older children. Recently, attempts have been made to study creative ability, or creative potential, in young children. The problems involved in these studies are many, much more than with older children. The child's difficulty in communication and the adult's difficulty in seeing the child's point of view are among the problems with which the experimenter must cope when working with young children. In spite of these problems a few instruments have been developed and are suitable for use in the study of the creative potential of young children.

Now longitudinal studies are needed to increase understanding of the development of creative ability. The few instruments available for use with young children can be used, but more are needed, particularly instruments suitable for test-retest research.

One instrument for the measurement of originality was developed by Cronquist (1964) and has proved to be suitable for use with young children. However, the use of this instrument in a test-retest study resulted in gains which could be the result of practice, therefore, another form of the originality instrument, comparable to the first is needed. The development of this alternate form of the originality instrument is the purpose of the present research.

#### Procedure

The following steps were involved in the present research:

- (1) a survey of existing literature to gain an understanding of the characteristics of original people and to get acquainted with the types of instruments that have been used to measure originality



and to find what methods are most effective for use with preschool children; (2) development of an originality research instrument (Form B) comparable to the instrument developed by Cronquist (Form A), (3) administration of the two forms of the originality instrument in a test-retest design, (4) analysis of the data and (5) interpretation of the results and recommendations.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

Originality is the ability to produce uncommon responses and to make unusual or unconventional associations. Barron (1963) has defined originality as the ability to respond both in an adaptive and an unusual manner. This implies that an original response is both uncommon and applicable to reality. Originality is an aspect of mental ability in that original ideas are both intelligent and divergent.

Individuals who are highly original have many characteristics in common. Drawing from a variety of theoretical and research reports, one can describe the original or creative person in the following ways: (1) The original person is able to produce divergent ideas. He is able to break out of the mold, and get off the beaten path. (2) The original person is an independent thinker. (3) The original person is highly flexible. He uses a variety of approaches in problem solving. He sees more in a situation than do most people and is able to redefine and reorganize what he sees. He is able to shift the function of familiar objects, and see something well known in a new context. This makes his thinking productive rather than reproductive. (4) The original person has unusual fluency.

He produces a great variety of ideas. (5) The original person breaks away from that which is easily recognized and becomes preoccupied with a problem. (6) The original person is self confident. He seems to prefer the difficult and the complex. (7) The original person is sensitive and "open" to his environment, and therefore, he is able to take advantage of the opportunities it offers. (8) The original person is curious and full of questions. He seems to have an ever-growing desire to acquire knowledge and to understand. (9) The original person has broad interest; he is versatile and is not easily bored. (10) The original person is self-directed rather than other-directed, and is free to be a nonconformist. (11) The original person can tolerate disorder. He is able to disregard the irrelevant and lift a new order out of the disorder with which he may be confronted.

#### Ways of Measuring Originality

Originality, as a characteristic of creative ability, has been studied in adults, adolescents and elementary school children. Recently, attempts have been made to measure this ability in preschool children. (The present study is planned as a contribution in this area.) The research done with adolescents and children will be reviewed inasmuch as it is most relevant to the present study.

#### Originality Test for Adolescents

Getzels and Jackson (1962) developed a battery of creativity tests for use in assessing this ability in high school students.

These were (1) a Word Association Test, (2) a Uses of Things Test, (3) a Hidden Shapes Test, (4) a Fables Test, and (5) a Make-Up Problems Test.

The Word Association Test consisted of 25 words, such as arm, cap, fair, punch, and tender. Each word had multiple meanings, and the subject was told to write as many definitions as he could for these rather common stimulus words. For example, "arm" could be defined as the arm of a chair, part of a man's body, and to supply with weapons. Successful performance on this test required the subject to shift his frame of reference within an organized structure.

The Uses of Things Test consisted of the names of five common objects, for which the subject was to enumerate as many uses as possible. Each object was commonly associated with a stereotyped function, and the subject's originality was indicated by the uniqueness and variety of the uses he named. The objects were a brick, a paper clip, a toothpick, a pencil, and a sheet of paper.

The Hidden Shapes Test consisted of a series of simple and complex geometric figures. The subject was required to find the figure conscientious exactness and appeared to tap the ability to perceive essentials quickly.

The Fables Test consisted of short fables for which the last line was missing. The subjects were to compose three possible endings for the stories, one of which should be moralistic, one humorous,

and one sad. This test was dependent upon the subject's ability to bring an incomplete situation to a suitable close and to shift frames of reference rather rapidly. The appropriateness and the relatedness of the subject's responses were considered in the scoring.

The Make-Up Problems Test consisted of a series of complex paragraphs, each containing many numerical statements about activities such as buying a house or building a swimming pool. The subjects were required to think of as many different problems as possible that could be solved with the information presented in each paragraph. Each paragraph contained far more information than was necessary for the solution of one problem.

These five tests, with the exception of the Hidden Shapes Test, were highly dependent upon verbal ability, and for this reason in particular, they are not suitable for young children.

#### Originality Tests for Elementary School Children

The most extensively used tests of creative ability, suitable for elementary school children, are those which have been developed by Torrance (1962) and his associates. The battery is known as the Minnesota Test of Creative Thinking, and consists of verbal and non-verbal tests. The non-verbal tests are more relevant for younger children, and therefore, are described in detail here. These tests are (1) the Incomplete Figures Task, (2) the Picture Construction Task, (3) the Circles and Squares Task, and (4) the Creative Design Task.

The Incomplete Figures Task consists of a series of stimulus figures, incomplete line drawings, which the children complete by sketching some object or design. For this task the children are encouraged to think of something which would be different from anyone else's idea. The scoring of the completed drawings is based on the uncommonness of the responses.

The Picture Construction Task is somewhat similar to the Incomplete Figures Task. The children are given pieces of colored gummed paper cut in three shapes: a triangle, a kidney and a tear drop. Using each as the basis for a picture, they glue it on paper and add lines with pencil or crayon to finish their picture. As in the previous task they are instructed to think of something which no one else in the class would think of, and their pictures are scored for uncommonness of the responses.

The Circles and Squares Task is similar to the Picture Completion Task in that the child is to draw pictures which have a circle or a square as a basic part. Two printed forms, one with 35 one-inch squares and the other with 42 one-inch circles, are given to the child with the instructions that he make as many objects as he can. His responses are scored for fluency and flexibility.

The Creative Designs Task offers the child an opportunity to create pictures and designs out of colored circles and strips, adding other accessories with pencil or crayon. The scoring of this task is to be perfected.

The Minnesota Test of Creative Thinking includes other tasks which are dependent upon verbal ability. However, inasmuch as verbal tasks are less appropriate than non-verbal for preschool children, they will not be described.

#### Originality Tests for Preschool Children

Cronquist (1964) developed an instrument for assessing the originality of preschool children. Until the development of her instrument, little research had been done in the area of creativity at the preschool level. Cronquist's instrument proved to be valid and reliable; and the need for a second (comparable) form of the instrument was indicated when test-retest research was attempted. (The present research was a response to this particular need.)

Cronquist's (1964) instrument consisted of different shaped pieces of styrofoam, which the child could handle as he talked to the experimenter about them. The design of the instrument was in keeping with criteria which were clarified during pilot work. The criteria were:

1. The materials used should be of inherent interest to preschool children.
2. A warm-up session should precede the administration of the instrument in order that the child fully understand what is expected and be able to work to the best of his ability.
3. The design should provide opportunity for a method of scoring which would permit the evaluation of one child's responses without comparing him with other children.

4. The actual scoring should be objective, as far as possible, rather than being dependent on judges' opinions.
5. The total number of possible responses should be sufficient to provide opportunity for discrimination among children of varying degrees of originality. (Cronquist, 1964 p. 14-15)

The warm-up session consisted of six pieces of styrofoam, each a different shape. The child demonstrated his ability to do the task by naming at least four different ideas suggested by any of these pieces.

The originality instrument itself, consisted of two identical sets of ten different styrofoam forms, one set painted red and the other blue. These were presented to the child one pair at a time, with the child holding one piece and the experimenter holding the other. The child was asked to state what his piece might be or what it looked like; and after he responded he was asked to state what the other piece might be. When the child had responded to all ten pair of styrofoam forms, the entire set was again presented. This time the child was given the opposite color, the color he did not hold during the first administration. This method of presenting the forms offered the child four opportunities to respond to each form. Some children repeated one answer and other children responded with as many as four different answers.

Each child's score on the instrument was a simple numerical count of the different responses he gave. The child who was not



very original might give the same response each time a particular form was shown to him, with the result that he would have a low score. On the other hand the child who was original might give as many as forty different responses.

Cronquist demonstrated the reliability of her instrument by a split-half correlation ( $\rho = +0.932$ ;  $p < .01$ ), the validity by comparing the children's scores with teacher's judgments of their originality, ( $\chi^2 = 22.75$ ,  $p < .001$ ).

Cronquist's instrument was used to retest a number of preschool children. These children retained their relative position in the group when retested, i.e., children who scored high on the first test scored high on the second; but practice effect was indicated by a general increase in all scores on the retest. This practice effect suggested the need for another instrument of similar design which might be used in test-retest research.

#### Implications for the Present Research

Inasmuch as the instrument developed by Cronquist (1964) was valid and reliable, her method of developing the instrument (e.g., selecting the best form and other pilot work) should be followed in the development of the second instrument. The criteria which she clarified should be accepted as the criteria for the second instrument.

A test-retest design should be used in comparing the Cronquist

form and the new form of the originality instrument. This is advisable because retest with the Cronquist instrument resulted in higher scores, indicating practice effects.

## CHAPTER III

### METHOD AND PROCEDURE

This chapter will include the following: a description of the subjects who participated in the research; a discussion of the pilot work involved in the development of the second originality instrument, and a description of the second instrument; the research design for comparing the two originality instruments, Form-A and Form-B; and recommendations for the analysis of the data.

#### Subjects

The subjects used in this research were 36 girls and 36 boys ranging in age from four years to five years and eleven months. With few exceptions, the children were from nursery schools and kindergartens. Of the total group, 48 four and five year old children took part in the development of the Form-B originality instrument; and 48 five year old children took part in the test-retest comparison of Forms A and B of the originality instrument. For each of these studies; the children were equally distributed throughout the age range. No children who participated in the pilot work were included in the final study.

## Development of the Research Instrument

The criteria for the research instrument and the directions for scoring were the same as those recommended by Cronquist (1964). The directions for administration and sample score sheets are presented in Appendix B.

The selection of the pieces for the Form-B instrument was made by testing 15 styrofoam forms, different from those used by Cronquist. These forms were administered to approximately 30 pre-school children in order to determine which would be most suitable for the research instrument. The ten forms for which the children gave the greatest variety of responses were then selected.

Two identical sets of these ten new forms were constructed. One set was painted yellow and the other green. These forms are pictured on the sample score sheet in Appendix B. The warm-up session as Cronquist described it was accepted for the new instrument.

## Research Design

A comparison of originality instruments, Forms A and B, involved the administration of the two instruments in test-retest research to 48 children five years of age. Half of these children were tested with Form-A and then Form-B, and the other half were tested with Form-B and then Form-A, with a time interval of

approximately three months between the administration of the two forms.

Form-B instrument was administered to an additional 24 children, four years of age, to provide data for the following analyses: reliability, sex differences and age differences.

#### Recommended Analysis

The analysis of the data will include (1) a test of the reliability of the new instrument, (2) a descriptive analysis of age and sex differences, and (3) an analysis comparing Form-A and Form-B, i.e., the form developed by Cronquist (1964) and the form developed in the present study. These criteria are described in the Review of Literature, Chapter II.

## CHAPTER IV

### RESULTS

A research instrument for the measurement of originality in preschool children, similar to the instrument developed by Cronquist (1964), was administered to 48 children, four and five years old. These data were analyzed to determine the reliability (internal consistency) of the instrument, and age differences and sex differences in originality.

The two instruments, Form-A developed by Cronquist and Form-B developed by the writer, were then administered in a test-retest design to 48 children, five years old. Half of these children were tested with Form-A and then Form-B and the other half were tested with Form-B and then Form-A. These data were then analyzed to determine (1) whether the rank of the children on the two tests was the same; (2) whether the changes in scores from the first to the second test were the same regardless of the test sequence; and (3) whether the distribution of scores was comparable for the two tests. The two forms of the test were then compared in an item analysis.

The scores for individual children are presented in Tables VI, VII, and VIII, Appendix A.

## Reliability of the Instrument

The reliability of the instrument was determined by a split-half correlation. The reader will recall that the children responded four times to each item in the test. On the score sheet, (Appendix B) these four responses are recorded in columns A, B, C, and D. The sums of the alternate responses in these columns are used in the split-half analysis. Specifically, the sum of the odd responses in columns A + B and the even responses in columns C + D was correlated with the sum of the even responses in columns A + B and the odd responses in columns C + D. This scoring is illustrated on the sample score sheets in Appendix B.

A split-half analysis, using the Spearman-Brown formula, yielded a correlation of +0.913 ( $p < .01$ ), indicating that the instrument has reliable internal consistency. All Form-B tests, a total of 72, were used in this analysis.

## Sex Differences in Originality

The numbers of boys and girls who scored high (25-37), medium (16-24), and low (10-15) on the originality task are presented in Table I. A Chi-square analysis of these data indicated that there were no sex differences in the responses of these children to the originality task Form-B.

TABLE I

NUMBER OF CHILDREN, BY SEX, SCORING HIGH, MEDIUM AND LOW ON FORM-B OF A RESEARCH TASK DESIGNED TO MEASURE ORIGINALITY IN PRESCHOOL CHILDREN

	Boys	Girls	Total
High Scores (25-37)	6	6	12
Medium Scores (16-24)	12	12	24
Low Scores (10-15)	6	6	12
Total	24	24	48

Chi-square = 0.48; not significant



### Age Differences in Originality

The number of children in each of two age groups who scored high (25-37), medium (16-24), and low (10-15) on the originality task is presented in Table II. A Chi-square analysis of these data indicated that there were no age differences in the responses given by the two groups.

TABLE II

NUMBER OF CHILDREN, BY AGE, SCORING HIGH, MEDIUM  
AND LOW ON FORM-B OF A RESEARCH TASK DESIGNED  
TO MEASURE ORIGINALITY IN PRESCHOOL CHILDREN

(Ages are expressed in years and months)

	Age Groups	
	4-0 to 4-11	5-0 to 5-11
High Scores (25-37)	7	5
Medium Scores (16-24)	11	13
Low Scores (9-15)	6	6
Total	24	24

Chi-square = 0.48; not significant

### Comparison of the Two Instruments

If the two originality instruments, Forms A and B, were comparable, then (1) the rank order of the children should be the same on both tests, (2) any changes in scores from the first to the second test should be the same regardless of the test sequence, and (3) the range and distribution of scores should be the same for both tests.

#### Rank Order of Scores

If Form-A and Form-B of the originality instrument are comparable, the child who ranks high on one test should rank high on the other. A Spearman rank order correlation for the scores of the children who were given test sequence A-B, yielded a coefficient of +0.69, significant at the .001 level; however, the correlation for the scores obtained in test sequence B-A yielded a coefficient of +0.28, which was not statistically significant.

The two forms of the originality instrument cannot be accepted as comparable.

#### Changes in Scores from First to Second Test

If Form-A and Form-B of the originality instrument are comparable, changes in scores from the first to the second test should be the same regardless of the sequence in which the two forms were administered. The median change in score for test sequence A-B was -02, and the median change in score for test sequence B-A was

= +08. An analysis of the changes in test scores indicated that the changes which occurred in the B-A test sequence were significantly larger than the changes which occurred in the A-B sequence. (Mann-Whitney U Test,  $U = 88.5$ ;  $p < .0001$ )

The medians and ranges of the scores and the changes in scores which occurred in the two test sequences, are presented in Table III.

TABLE III

MEDIANS AND RANGES OF SCORES OBTAINED  
IN TWO TEST SEQUENCES (N=48)

Test Sequence	First Test		Second Test		Change*	
	Median	Range	Median	Range	Median	Range
A - B	28	16-37	26	10-35	-02	-14 to +06
B - A	20	10-34	27	16-39	+08	-10 to +25

\*Mann-Whitney U Test,  $U = 88.5$ ;  $p < .0001$ .

### Distribution of Scores

If Form-A and Form-B of the originality instrument are comparable, the distribution of the scores for Form-A should be the same as the distribution for Form-B. An analysis, using the Mann-Whitney U Test, indicated that the two distributions of scores are not the same. The medians and ranges of the two distributions are presented in Table IV.

TABLE IV

DISTRIBUTION OF SCORES OBTAINED ON FORM-A  
AND FORM-B OF THE ORIGINALITY INSTRUMENT  
(N = 48)

	N	Median	Range
Form-A	48	28	16-39
Form-B	48	22	10-35

Mann-Whitney U Test,  $U = 720$ ;  $p < .001$ .

### Item Analysis

The three separate analyses used in the comparison of the two forms of the originality instrument, showed that the Forms-A and B were not comparable. In general, children received higher scores

on Form-A than on Form-B. An item analysis of the individual styrofoam forms in the two tests was done in order to determine whether another arrangement of the forms would produce two comparable tests.

For the item analysis, each styrofoam form in the two tests was weighted in terms of the total number of responses for which the children received credit. For example, the scores of 48 children totaled 144 plus-responses for this item. The weighted scores for the individual items in Form-A and Form-B of the originality test are presented in Table V.

TABLE V  
TOTAL NUMBER OF PLUS-RESPONSES FOR INDIVIDUAL  
ITEMS ON FORM-A AND FORM-B OF THE ORIGIN-  
ALITY INSTRUMENT (N=48)

Form-A		Form-B	
Item	Responses	Item	Responses
A-1	144	B-1	118
A-2	143	B-2	103
A-3	125	B-3	119
A-4	148	B-4	103
A-5	118	B-5	109
A-6	139	B-6	101
A-7	129	B-7	101
A-8	112	B-8	108
A-9	124	B-9	101
A-10	127	B-10	109

An examination of the number of plus-responses for the individual items on the originality tests, shows that eight of the Form-A items were weighted more than any item on Form-B. This suggests the possibility of two comparable forms of the test being constructed if each new test consisted of five items from Form-A and five items from Form-B.

### Summary

A research instrument for the measurement of originality, Form-B was administered to 48 preschool children, ranging in age from four years to five years eleven months. Adequate internal consistency of the instrument was indicated by the results of a split-half correlation. No sex differences and no age differences were found in the responses of the children to the task.

Two similar originality instruments, Form-A developed by Cronquist (1964) and Form-B developed by the writer, were administered to 48 five-year-old children in a test-retest design. Statistical analyses indicated that the two tests were not the same. The changes in scores from first to second test were significantly greater when Form-B was the first test administered; and in general, the scores obtained on Form-A were higher than the scores obtained on Form-B.

An item analysis was done in order to determine whether a rearrangement of the styrofoam forms would produce two comparable

originality tests. The fact that the weighted scores for most items on Form-A were much higher than the weighted scores for Form-B items, suggested the possibility of constructing two new tests, each with five items from Form-A and five from Form-B.

## CHAPTER V

### SUMMARY AND RECOMMENDATIONS

The purpose of this research was to compare two research instruments designed to measure originality in preschool children. One research instrument, Form-A by Cronquist (1964), was available; and a second instrument, Form-B, was developed by the writer. The subjects were 72 children, boys and girls ranging in age from four years to five years eleven months.

The general design of both originality instruments was the same. Six white styrofoam forms were used in a warm-up session during which the child was encouraged to manipulate and talk about the forms. The research instrument itself was composed of two identical sets of ten different forms. In the Form-A instrument, the forms were painted red and blue; and in the Form-B instrument, the forms were painted green and yellow. These forms were presented to each child one pair at a time, and his originality score was a simple count of the number of different responses he gave during the test.

The Form-B instrument was administered to 48 children, four and five years old. Analysis of these data indicated that the instrument was reliable, i.e., had internal consistency. Neither sex



differences nor age differences in originality were indicated by the responses of these children.

The two instruments, Form-A and Form-B, were then administered in a test-retest design to 48 children, five-years-old. Half of these children were tested first with Form-A, and the other half were tested first with Form-B. Statistical analysis of the test-retest data indicated that the two instruments were not comparable. The rank order of the children on the two tests was not the same; the changes in scores from the first to the second test were significantly greater when Form-B was the first test administered; and in general, the scores obtained on Form-A were higher than the scores obtained on Form-B.

An item analysis was done in order to determine whether a rearrangement of the styrofoam forms would produce two comparable originality tests. The fact that the weighted scores for most items on Form-A were much higher than the weighted scores for Form-B items, suggests the possibility of constructing two new tests, each with five items from Form-A and five from Form-B.

#### Recommendations

In studies of creative ability, two comparable research instruments for the measurement of originality are needed for test-retest research with preschool children. In view of the findings of the present study, it is recommended that Form-A and Form-B, as they

now exist, be administered to a larger group of children and that an item analysis again be done. The two instruments could then be revised, possibly by using five forms from the present Form-A and five from Form-B. In this way two new forms of comparable value could be constructed.

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APPENDIX A

TABLE VI

DESCRIPTIVE DATA FOR INDIVIDUAL CHILDREN PARTICIPATING IN  
THE DEVELOPMENT OF A RESEARCH INSTRUMENT (FORM-B)  
DESIGNED TO MEASURE THE ORIGINALITY  
OF PRESCHOOL CHILDREN (N=48)

Boys			Girls		
Code Number	Age*	Originality Score	Code Number	Age*	Originality Score
M-1121	5-11	26	F-1118	5-11	22
M-1105	5-11	22	F-1141	5-11	12
M-1119	5-10	31	F-1142	5-11	17
M-1122	5-10	34	F-1164	5-7	23
M-1143	5-7	13	F-1147	5-7	11
M-1167	5-6	27	F-1103	5-6	18
M-1169	5-5	23	F-1115	5-5	10
M-1166	5-5	24	F-1168	5-5	23
M-1146	5-5	20	F-1145	5-4	11
M-1106	5-5	20	F-1165	5-3	34
M-1107	5-3	16	F-1104	5-2	16
M-1108	5-3	11	F-1102	5-1	21
M-1140	4-11	27	F-1157	4-11	25
M-1116	4-11	12	F-1149	4-10	37
M-1158	4-11	26	F-1129	4-9	30
M-1150	4-9	22	F-1153	4-6	21
M-1151	4-8	16	F-1110	4-6	19
M-1163	4-8	16	F-1160	4-6	20
M-1148	4-5	21	F-1185	4-3	27
M-1152	4-5	19	F-1137	4-3	15
M-1144	4-4	24	F-1156	4-3	27
M-1155	4-0	11	F-1161	4-2	10
M-1170	4-0	10	F-1143	4-0	15
M-1159	4-0	24	F-1162	4-0	18

\*Age in years and months at the time of first test.

TABLE VII

DESCRIPTIVE DATA FOR INDIVIDUAL CHILDREN, GIVEN A TEST-RETEST SEQUENCE A-B, IN A STUDY OF THE COMPARABILITY OF TWO INSTRUMENTS DESIGNED TO MEASURE THE ORIGINALITY OF PRESCHOOL CHILDREN. (N=24)

Sex and Code No.	Age*	Interval Between Test (in months) Sequence A-B	Originality Scores		Change in Score 1st to 2nd Test
			Form-A	Form-B	
M-1109	5-9	3.1	26	26	00
M-1133	5-8	3.9	26	28	02
M-1123	5-8	4.4	34	35	01
M-1126	5-6	3.8	30	28	-02
M-1130	5-6	3.8	27	30	03
M-1124	5-6	3.8	24	10	-14
M-1111	5-4	3.8	25	17	-08
M-1127	5-4	3.9	29	18	-11
M-1138	5-4	3.9	17	12	-05
M-1112	5-1	3.9	37	34	-03
M-1136	5-1	3.5	16	14	-02
M-1135	5-0	3.9	28	34	06
F-1139	5-11	3.9	20	22	02
F-1125	5-9	3.8	18	18	00
F-1154	5-9	4.2	21	29	08
F-1117	5-8	3.8	30	28	-02
F-1128	5-7	3.8	33	26	-07
F-1131	5-7	3.9	31	18	-13
F-1132	5-5	3.9	29	24	-05
F-1134	5-4	3.8	23	16	-07
F-1114	5-3	3.5	33	35	02
F-1186	5-2	4.0	29	28	-01
F-1113	5-2	4.0	37	34	-03
F-1120	5-1	3.9	21	15	-06

\*Age in years and months at the time of first test.

TABLE VIII

DESCRIPTIVE DATA FOR INDIVIDUAL CHILDREN, GIVEN A TEST-RETEST SEQUENCE B-A, IN A STUDY OF THE COMPARABILITY OF TWO INSTRUMENTS DESIGNED TO MEASURE THE ORIGINALITY OF PRESCHOOL CHILDREN. (N=24)

Sex and Code No.	Age*	Interval Between Test (in months) Sequence A-B	Originality Scores		Change in Score 1st to 2nd Test
			Form-A	Form-B	
M-1121	5-11	4.0	22	26	-04
M-1105	5-11	4.5	35	22	13
M-1119	5-10	4.0	21	31	-10
M-1122	5-10	4.5	31	34	-03
M-1143	5-7	3.3	20	13	07
M-1167	5-6	3.7	39	27	12
M-1169	5-5	3.7	22	23	-01
M-1166	5-5	3.7	35	24	11
M-1146	5-5	3.3	30	20	10
M-1106	5-5	3.5	22	20	02
M-1107	5-3	3.5	32	16	16
M-1108	5-3	1.1	29	11	18
F-1118	5-11	3.9	26	22	04
F-1141	5-11	2.7	24	12	12
F-1142	5-11	3.3	26	17	09
F-1164	5-7	3.7	39	23	16
F-1147	5-7	3.3	18	11	07
F-1103	5-6	3.5	17	18	-01
F-1115	5-5	3.7	35	10	25
F-1168	5-5	3.7	29	17	12
F-1145	5-4	3.3	16	11	05
F-1165	5-3	3.7	34	34	00
F-1104	5-2	3.5	26	16	10
F-1102	5-1	3.5	28	21	07

\*Age in years and months at the time of first test.

APPENDIX B



### Administration of the Originality Instrument

All six white forms are placed on the table in front of the child. The child is encouraged to manipulate them and to talk about them. He is asked, "Do you see a piece that looks like something, or could we make it into something?" When the child responds, the experimenter agrees with his comment, whatever it is, and encourages him to talk about another form. If the child does not respond, the experimenter picks up one of the forms and ask what that particular piece might be. If the child still does not respond, the experimenter makes a suggestion in the form of a question, e.g., "Do you think it could be a window?" If the child gives the same response for different shapes, his response is accepted, but he is asked to think of something else that it could be. For example, if the child said that two different pieces could be a door, the experimenter would say, "Yes, it certainly could be a door, but we already have one door. Can you think of something else that it could be?" After the child has responded to each of the six forms, the experimenter praises him by saying, "Good, you thought of something different for all those pieces." No child is considered ready for the research task unless he can respond with at least four different ideas during the warm-up session.

The research instrument is administered by showing the child one pair of identically shaped pieces at a time. When he is shown

the first pair, he is given his choice of the color he prefers, (yellow or green). The one he chooses is then placed on the table in front of him and the other is placed in front of the experimenter. The child is then asked what his piece might be or what it looks like. After he responds, he is then asked what the other piece might be.

When all ten pair of styrofoam forms have been shown to the child, the entire set is again presented. This time the child is given the opposite color, the one he did not choose during the first administration; and the forms are presented in different positions if possible, e. g., sideways, upside down.

## DIRECTIONS FOR SCORING ORIGINALITY TEST

- A. Score the responses in the order in which the child gave them, columns A and B together and then columns C and D together.  
1A - 1B - 2A - 2B - 3A - 3B, etc.
- B. Mark each response either + for credit or - for no credit.  
Mark a response +, if it is different from all previous responses.  
When in doubt, give the child credit.
- C. Categories of objects
1. A child may name objects which are similar in category.  
The child receives credit for each different type of object in the category.
  2. A child may name the category and then name a specific object in the category.  
Ex: ball (+), rubber ball (+), base ball (+)
- D. Examples of no credit
1. A child does not receive credit when he combines two previous responses for which he has received credit.  
Ex: tree (+), cookie (+), tree cookie (-)
  2. A child does not receive credit when he names an object a second time altering it with a minor adjective.  
Ex: ball (+), big ball (-), half ball (-)  
Ex: duck (+), part of a duck (-)  
Ex: egg (+), round egg (-), cracked egg (-)  
Ex: red ball (+), blue ball (-)
  3. The child receives no credit for a play on words.  
Ex: Kigless (-), Pigless (-), Sigless (-)  
Ex: Rigco (-), Sig-co (-)
- E. Some children look about the room for ideas. This is noted on the score sheet. For such responses, the child receives credit if there is a possible relationship between the response and the test form.

Name Child 2  
 Date of Birth 4-16-60  
 Code 2

Sex M  
 Age 3-7  
 Date 12-4-63




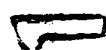






SPLIT-HALF SCORES

Odd A B + even C D = 6  
 Odd C D + even A B = 5

FORM A

TOTAL

11

	A. Blue	B. Red	C. Red	D. Blue
1. 	block +	block -	block -	block -
2. 	bridge +	bridge -	bridge -	bridge -
3. 	block +	block -	block -	block -
4. 	block -	tree +	tie +	tie -
5. 	boat +	boat -	boat -	boat -
6. 	block -	tree -	block house +	block -
7. 	tear +	tear -	tear -	tear -
8. 	ball +	ball -	ball -	ball -
9. 	girl +	girl -	snowman +	snowman -
10. 	car +	car -	block -	block -

Name Child - M-1135 Sex M

Date of Birth 12-17-59 Age 5-3

Code M-1135 Date 4-16-65

SPLIT-HALF SCORES











Odd A B + even C D = 17

Odd C D + even A B = 17

FORM B

TOTAL

**34**

		A. <u>Green</u>	B. <u>Yellow</u>	C. <u>Yellow</u>	D. <u>Green</u>
1.		door +	hole +	Chimney +	stone +
2.		doughnut +	doughnut -	tire +	hole -
3.		rocking bed +	Cage +	sheet +	table +
4.		wheel +	Ball +	bird +	hat +
5.		pie +	ice cream cone +	bread +	airplane +
6.		bridge +	bridge -	bike +	car +
7.		snowman +	house +	box +	man
8.		boat +	boat -	dairy creme +	dairy creme -
9.		hatchet +	hatchet -	shoe shine stand +	whistle +
10.		horn +	horse shoe +	lamp +	knife +

VITA

Wilma Jean McFalls Holt

Candidate for the Degree of  
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