

CREATIVITY IN EARLY CHILDHOOD: A STUDY OF
THE RELATIONSHIP BETWEEN ORIGINALITY
AND CONFORMITY-NONCONFORMITY

By

BEVERLY LANE TALLENT
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University of Arkansas

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Thesis Approved:


Thesis Adviser




Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Purpose

The present study is part of a larger creativity research project which is attempting to increase our understanding of young children in order that we may enable them to live more creatively. The specific focus of this study is on the relationship between two characteristics of the creative person. Two instruments developed in the larger creativity research project were chosen for use in the study. One is a test of originality, and the other is a test of conforming and nonconforming behavior. The use of these two instruments makes it possible to study the relationship between an intellectual and a motivational characteristic which may help to identify potentially creative children in early childhood.

Problem

In the 1950's, a foundation was laid for the tremendous expansion of creativity research which has continued up to the present time. In the early studies attention was focused on highly creative adults, and they were usually identified as creative by their products or their work; but regardless of how these adults were identified, they seemed to have many personality characteristics in common. They expressed original ideas and displayed flexibility in their behavior. They

were sensitive to problems, and they had a good sense of humor. They maintained balance between group-centeredness and self-centeredness. They were not compulsive or obsessive in their need for certainty, safety, acceptance, order, and security. They were willing to be different or nonconforming, and they seemed to enjoy the challenge of a calculated risk.

During the early years of creativity research, a distinction was made between potential creativity and functional creativity, and at the same time, attempts were made to categorize the characteristics of the creative person as intellectual and motivational.

Lowenfield (1959) referred to the untapped creative resources of the individual as potential creativity and to that part of his creativeness which the individual uses in his work and actions as functional creativity. Whether or not one believes that every child is born with creative potential, few would deny that the expression of creative ability has been stifled in many individuals. This gives rise to the question of whether creative potential can be identified before there has been creative achievement. Golovin (1963) expressed the belief that the only identification possible at an early stage of an individual's development is his creative facility rather than his creative ability. Such identification seems necessary if the stifling of creative ability is to be avoided. (Starkweather, 1966, page 1).

The characteristics of the creative person were categorized by Taylor (1959) as intellectual and motivational. The intellectual characteristics were those which seemed to be the valid indicators of creative ability, whereas the motivational characteristics were those which facilitated the expression of creative ability or operated as obstacles to creativity.

Originality and adaptive flexibility are two of the intellectual characteristics of creative people. Originality is probably the broadest of the traits that make for creativity. It includes such

abilities as the capacity to produce unusual ideas, and to solve problems and use things or situations in unusual ways. (Kneller, 1965). A four-year-old showed originality when he used an aluminum pie pan for his steering wheel for his airplane. Adaptive flexibility has been defined as the ability to adapt to change, to be free in thought, and to use a variety of approaches in order to solve problems. (Torrance, 1963). A seven-year-old showed adaptive flexibility when she could not find her knitting needles and used pick-up-sticks instead.

Freedom to be a nonconformist and willingness to take a calculated risk are two of the motivational characteristics of creative people. Freedom to be a nonconformist has been defined as a willingness to be different. This freedom is evident in the behavior of the creative person who may conform or not of his own free will. He may appear to be unconventional, but in spite of this unconventionality, he is sufficiently attuned to the ideas of others not to lose touch with the thinking of his society. The unconventional behavior of the creative person occurs in the course of his being creative and not as a goal in itself. (Kneller, 1965). Willingness to take a calculated risk has been defined as the ability to enjoy activities in which the risk is neither too great, as when success depends on luck, nor too easy, as when success is assured. The creative person enjoys doing things which are difficult, but he is not compulsively determined to attempt only the difficult. He has the freedom to take either road, the difficult or the easy, depending upon which would most effectively lead him to his goal. (Starkweather, 1965).

The relationships among various personality characteristics have been examined in research studies of creative adults.

Guilford (1957) found significant correlations between measures of traits of temperament and motivation (motivational characteristics) and measures of factors of ability within the area of creative performing (intellectual characteristics); e.g., impulsiveness and ascendance are related to ideational fluency; tolerance of ambiguity and less need for discipline and orderliness are related to originality. Taylor (1959) expressed the "hunch" that certain of the intellectual components may underlie certain motivational forces in the creative person. Similarly, Torrance (1962) hypothesized that individuals develop certain attitudes which facilitate creative growth and others which operate as obstacles to creativity; and Getzels and Jackson (1962) stated that "general cognitive style and general motivational structure are inextricably related and can be separated only for analytic purposes." (p. 28). These theoretical discussions and research reports suggest that the identification of motivational characteristics may provide the means for identifying young children who are potentially creative. In other words, it may be possible to identify the creative child by his psychological freedom, his willingness to try the difficult, and his freedom to use conforming or non-conforming behavior, for example. (Starkweather, 1966, page 2).

In research done with school age children, the relationships found among motivational and intellectual characteristics give additional support to the contention that certain motivational characteristics are essential for the expression of creative ability.

Torrance (1962) and Getzels and Jackson (1962) developed instruments for the measurement of characteristics which are indicative of creative ability or essential for its expression, and used these instruments in the study of school age children and adolescents. Torrance as a result of his findings, postulated that restrictions on manipulativeness and curiosity, overemphasis on sex roles, overemphasis on prevention, and premature attempts to eliminate fantasy are special blocks to creativity. Each of these can be seen as a restriction which curtails the child's freedom. Similarly, this need for freedom in the creative process has been indicated by Getzels and Jackson in their comparison of highly intelligent and highly creative adolescents. The highly creative were more stimulus-free and less categorical;

they had an internal locus of evaluation rather than depending upon the evaluative judgment of others; and they were able "to toy with elements and concepts" and "to make the given problematic." (Starkweather, 1966, page 2).

Creativity research with children of preschool age has been extremely limited. Special instruments are needed for use with young children, and until recently, the only research instruments available were those developed for use with older children and adults. In the creativity research program at Oklahoma State University, several instruments have been developed specifically for use with preschool children. Several of these instruments are designed to measure the intellectual and motivational characteristics which may identify creative children, and others are designed to measure qualities such as social relations and masculinity-femininity which may be related to creative expression.

Two of the research instruments developed at Oklahoma State University were chosen for use in the present study. One was a test of originality, and the other was a test of conforming and nonconforming behavior. The use of these two instruments made it possible to study the relationship between an intellectual and a motivational characteristic which may identify potentially creative children in early childhood. To this extent, the present study is seen as a contribution to our understanding of creativity as it develops in the early years.

CHAPTER II

REVIEW OF THE LITERATURE

An overview of the creativity research done with young children at Oklahoma State University is presented in this chapter. Such an overview is appropriate inasmuch as several instruments have been developed for use with young children, and a systematic study of the relationships among intellectual and motivational characteristics is now possible. In this chapter, two introductory studies which served as a basis for later research are discussed; development of specific research instruments is described; and the relationships which have been found among various characteristics are discussed. Implications for the present research are also presented.

Introductory Studies

The creativity research at Oklahoma State University began with a study of the conscientious effort of first grade children and a study of preschool children's freedom to express themselves in a play situation. These two early studies have served as a basis for later creativity research.

Conscientious Effort

Interest in characteristics related to creativity was expressed by Tether (1961) in her study of the conscientious effort of children

in the first grade. As a first grade teacher, Tether had noticed that certain of her children (1) tended to be more persistent than others, (2) appeared to be more independent than others, and (3) seemed to take more calculated risks than others. She believed that these qualities were related to the attitudes of the parents or to the child rearing practices that were used by the parents; and therefore, she chose to measure the three qualities of conscientious effort mentioned above and to study their relationship to parental attitudes. For her study she used simple situations designed specifically for the children in her first grade classroom.

The characteristic of persistence was determined by the child's response to a rather tedious coloring task, a red and blue checkerboard. When the coloring was partially done, the child was told that he did not have to finish. He was rated for persistence according to whether he (1) left the coloring task without completing it, (2) left the coloring task and then returned to complete it, or (3) refused to leave the task until he had completed it.

The characteristic of independence was measured with inlay puzzles. Each child worked two of these, and his independence was determined by the extent to which he requested help or accepted offers of help while completing the puzzles.

The children's willingness to take a calculated risk was measured by a reading task. The task consisted of sentences constructed from the reading material being used by the children at the time the task was administered. Pairs of sentences, one more difficult than the other, were presented to each child and he chose the sentence that he wanted to read aloud to his group. The task was administered during

the regular reading classes, and each child had many opportunities to choose to read either an easy or a difficult sentence when it was his turn. The number of difficult sentences chosen by each child was used as the indication of his willingness to take a calculated risk.

The parental attitudes with which Tether was concerned were those having to do with the demands and restrictions which parents place on their children. She used two known questionnaires to measure these attitudes. One was the Winterbottom questionnaire, which measured demands and restrictions related to independence training; and the other was a part of the Parental Attitude Research Instrument, which measured demands for conformity and achievement. Tether was concerned only with maternal attitudes, and she interviewed the mothers individually when they came to school for parent-teacher conferences.

Tether found significant sex differences in independence and in level of aspiration (willingness to take a calculated risk). She found that (1) the boys showed significantly more independence than the girls, and (2) the boys showed a tendency toward a higher level of aspiration than the girls. Tether also found significant relationships between maternal attitudes and these two characteristics, independence and level of aspiration. In relation to level of aspiration, the maternal attitudes toward girls were different from the maternal attitudes toward boys. (1) The mothers of girls showing a high level of aspiration used more restrictions and made more demands than did the mothers of girls showing a low level of aspiration. (2) The mothers of boys showing a high level of aspiration used fewer restrictions than did the mothers of boys showing a low level of aspiration. In the analysis of the relationship between independence

and maternal attitudes, the findings for the girls were rather unexpected. The mothers of the more dependent girls, those who accepted help frequently, judged their girls to be more independent than did the mothers of the girls who actually were independent.

The Tether's research was an exploratory study and was intentionally broad in scope. The results of the study did show certain tendencies and relationships which suggest areas for more intensive study and which have implications for creativity research. Two of the characteristics in which Tether was interested, independence and willingness to take a calculated risk, are considered motivational characteristics of the creative person and may influence creative expression. The third characteristic in which she was interested, persistence, may also be a motivational characteristic of the creative person.

Freedom to Express

Azbill (1961) was interested in finding out whether she could identify highly creative children by the freedom with which they expressed themselves in exploring and manipulating objects in their environment. She was also interested in determining whether this freedom of expression, which she accepted as a pervasive characteristic of creative ability, was independent of intellectual ability.

Azbill designed an experimental situation in which each child played by himself with a series of simple toys. The toys were ones which could be put to a number of uses, and many of them were toys with which the children had had little or no previous experience, e.g., wax discs and a pan of water, pipe cleaners and cork balls

(beads). Each child's freedom of expression was measured in terms of the variety of ways he played with the toys. Each child's intellectual ability was measured with the Stanford-Binet Intelligence Test.

Azbill studied the relationship between creative ability and intellectual ability by comparing children's freedom of expression with their intelligence test scores. Creative ability has been defined as a nonintellectual variable, and freedom of expression has been accepted as a necessary characteristic for creativity; therefore, the relationship between these two sets of scores should indicate whether creative ability is actually independent of intellectual ability. Azbill found a significant negative correlation between creativity (freedom to express) and intellectual ability, indicating that these two abilities are independent of each other at least in early childhood.

The play behavior of the children who participated in the Azbill study resulted in a wide range of scores, indicating that some children were extremely inhibited and others were extremely free when playing by themselves. The fact that these children were of preschool age indicates that the encouragement and the stifling of freedom of expression occur during the preschool years. The findings do not indicate that a child with a high freedom score on the research instrument is a child who is free in all situations.

Development of Research Instruments

The studies of conscientious effort and psychological freedom (freedom to express) were followed by the development of instruments for the measurement of specific characteristics, motivational and

intellectual, which are related to creative ability in older children and adults. The hope was, and still is, that the measurement of these characteristics will provide the means for identifying the young child who is potentially creative.

Conformity-Nonconformity

The creative person is willing to be different; he may conform or not of his own free will. It follows that an instrument designed to measure this characteristic should provide the child with an opportunity to make a choice in a situation in which he can follow a model or respond freely according to his own preferences. In keeping with this requirement, a set of form boards was designed for measuring young children's freedom to use conforming and nonconforming behavior in an impersonal situation, and a color-preference test was designed for use in the measurement of social conformity, i.e., conformity to parents or to friends. (Starkweather, 1964).

The conformity-nonconformity tests were designed to meet the following criteria:

(a) The compulsive quality and the conforming quality of a child's behavior must be measured independently. The child who is a compulsive nonconformist is just as rigid as the child who is a compulsive conformist. (b) The tests must be adjustable in order that the opportunity to conform be of similar potency for all children. Conforming behavior is common when a child has an opportunity to conform to persons he likes, whereas the reverse is true in the case of persons he dislikes. Similarly, conforming behavior is to be expected when it involves the choice of a preferred object. (Starkweather, in Goldsmith, 1970, p. 52).

Impersonal Conformity.- The Starkweather Form Boards Test consists of four form boards, picturing scenes familiar to most

children of preschool age. These include a tree, a house, a playground, and a barnyard. The boards and picture pieces are colored, and the opportunity to conform is provided by black and white line drawings placed behind each form board.

In the Tree Form Board, (Figure 1, page 62), a line drawing of a rabbit is shown at the base of the tree. To complete this part of the picture, the child chooses between a rabbit and flowers. If he chooses the rabbit, he is following the model; but is he conforming or is he showing a preference for the rabbit? This is a question we cannot answer until the child has a second session with the form boards, approximately one week later. At that time the child again chooses between the rabbit and the flowers, but the line drawing is of the flowers. The underlying assumption is that the child who really prefers the rabbit will choose the rabbit during both sessions if he is free to use conforming and nonconforming behavior; but the child who is a conformist will choose the rabbit only when the line drawing of the rabbit is shown, and the nonconformist will choose the rabbit only when the line drawing of the flowers is shown.

The two sessions with the form boards provide the child with 80 choices between paired picture pieces. The conforming child will, for the most part, choose the picture which corresponds to the line drawings. The child who is free will choose the pieces he prefers, with the result that his choices will correspond to the line drawings approximately fifty per cent of the time. The nonconformist, on the other hand, will choose the picture pieces that do not match the line drawings.

The scoring is a matter of subtracting the number of nonconforming responses from the number of conforming responses. This provides a range of D-scores, or difference scores, from +80 (complete conformity) to -80 (complete nonconformity). (Starkweather, 1968, p. 76).

The validity of the Starkweather Form Boards Test was determined by administering the form boards without the line drawings, i.e., without the opportunity to conform, to a control group of children. The responses of these children were compared to the responses of children who saw the line drawings as they completed the form boards. A Chi-square analysis showed the scores for the two groups to be

significantly different in the expected direction. The D-scores for the children in the experimental group were higher than the D-scores for the children in the control group. ($\chi^2 = 30.573$; $p < .001$). The form boards do provide a valid measure of young children's conforming behavior in an impersonal situation.

The reliability (internal consistency) of the Starkweather Form Boards Test was determined by an analysis of the children's picture preferences. For example, a child who chose the rabbit both times that it was presented, preferred the picture of the rabbit to that of the flowers. The number of picture preferences shown by individual children ranged from zero to 39. The score of zero was earned by a child who conformed throughout the test, and the score of 39 was earned by a child who, with one exception, definitely preferred one picture in each pair. A split-half correlation, corrected by the Spearman-Brown formula, yielded a coefficient of +0.896 ($p < .01$). The Form Boards Test was accepted as reliable.

The Starkweather Form Boards Test was one of the instruments chosen for use in the present research. A detailed description of the instrument is presented in Appendix B.

Social Conformity. - The study of conforming and nonconforming behavior in a social situation began with the use of placecards at the nursery school luncheon tables. Each noon one child distributed identical placecards for the other children at his table and then chose one for himself, the same color as the others or of a different color. The research appeared to be sound; but the children were not sitting with their friends during lunch and were not necessarily being

offered their favorite colors. In addition, the project was too time consuming.

The problems which occurred in the above research were solved by shifting from the use of placecards as a color-preference test to the construction of small picture booklets.

Each child constructed a small picture booklet of colored pages, choosing each page by making a color selection when there was an opportunity to conform to parents or to friends. For example, two identical pages (e.g., the picture of a cow on a red page) were placed before the child and he was told that one was for his mother and the other for his father. He was then given his choice of a page identical to those for his parents or a page of a different color (e.g., the picture of a cow on a blue page). In this task the tendency to conform or not is influenced by the child's actual color preferences; therefore, color preferences are determined in a pretest, and care is taken to offer each child colors which he likes and colors which he dislikes when giving him an opportunity to conform. (Starkweather, 1968, p. 78).

As with the form boards test of impersonal conformity, the validity of the color-preference test was determined by comparing the responses of matched control and experimental groups of children. A Chi-square analysis showed the scores for the two groups to be significantly different in the expected direction. ($\chi^2 = 8.260$; $p < .01$). The color-preference test (Starkweather Social Conformity Test) does provide a valid measure of social conformity.

The reliability (internal consistency) of the color-preference test was determined by an analysis of the responses of the children when they had an opportunity to conform to parents. The number of responses made by each child during the first and last half of the test were used in this analysis. A split-half correlation, corrected by the Spearman-Brown formula, yielded a coefficient of +0.779 ($p < .01$). The Starkweather Social Conformity Test was accepted as reliable.

Willingness to Try the Difficult

Another characteristic of the creative person is a willingness to try difficult tasks, to accept the challenge of a calculated risk. The creative person is not compulsively determined to attempt only the difficult, but rather is free to take the difficult road when that would enable him to achieve his goal or to take the easy road when that would most effectively lead to his goal.

Starkweather (1966) developed three instruments for use in the measurement of preschool children's willingness to try difficult tasks.

These were (1) a buttoning task, based on fine motor coordination, (2) a puzzles task, based on the ability to see visual relationships, and (3) a target game, based on gross motor coordination. The general design of the three instruments was the same, and each was accepted as having face validity. As presented to the child, each instrument consisted of a set of five tasks graded in difficulty, and an adjustment was possible so that each child was offered easy and difficult tasks relative to his own ability.

In the game which the child played, the levels of difficulty were presented in pairs and the child chose the one that he wanted to do. In the manner of a paired-comparison test, each level of difficulty was paired with every other level, and the order of presentation was such that the child started with the easier tasks and was gradually introduced to those which were more difficult. The scoring was a measure of the level of difficulty at which the child chose to play the game. (Starkweather, 1966, p. 47).

Of the three instruments designed to measure young children's willingness to try difficult tasks, the target game proved to be the most satisfactory and the most discriminating. All children enjoyed the game and wide individual differences were demonstrated in their willingness to try the difficult.

The Starkweather Target Game is designed so that the levels of difficulty for each child are provided by a range of target distances.

Each child's actual ability is determined in a pretest, and the range of distances are adjusted so that the child, as he plays the game, makes choices between target distances that are easy and difficult relative to his own ability. The target itself is box-shaped and responds somewhat like a jack-in-a-box. When the bull's eye at the front of the target is hit, the lid opens and a surprise picture appears. The picture can be removed; and when it has been seen by the child, it is replaced by another picture. Success and failure are obvious to the child, and the surprise picture is a motivating force. These are unique advantages which are present in the target game, but which are not present in either the puzzles or the buttoning task.

The scoring for the target game takes into consideration the skill with which the child actually plays the game, thereby offering a more refined adjustment for ability than is possible in the pretest alone. The score ($B+D-S$) is figured from the number of balls the child uses (B), and the number of times he chooses the difficult (D) in relation to the number of successes (S) he experiences while playing the game.

The Starkweather Target Game is accepted as having face validity. Beyond this, a comparison of children's performances on all three instruments, the target game, the buttoning task, and the puzzles, suggest that willingness to try difficult tasks is a characteristic which is fairly consistent from one situation to another. This is accepted as further evidence of the validity of the instrument.

The reliability of the target game was determined by analyzing the consistency with which easy and difficult target distances were

chosen by the children. A split-half correlation, corrected by the Spearman-Brown formula, yielded a coefficient of +0.876 ($p < .01$).

The target game was accepted as reliable.

Originality

Originality has frequently been referred to as a valid indicator of creative ability. If you have original ideas, you are considered creative.

The study of preschool children's originality began with an exploratory use of materials designed for older subjects. This served to indicate problem areas and to provide clues for the way in which an appropriate instrument might be developed. Specific problems were posed by the method of scoring and by the stimulus materials.

Statistical infrequency, as usually applied to the scoring of originality tasks, compares one child's responses to those of other children. By this method, the child who has a pet name for an object will profit inasmuch as his response will not be duplicated by another child, and yet his ideas may not be more original than those of other children. This scoring problem was solved by comparing each child with himself rather than with other children. In other words, each response of a given child was compared to all other responses made by that child; and then the child who gave the greatest variety of responses was judged to be the most original.

Line drawings, frequently used in the study of originality, were impractical because young children want to handle the materials about which they are talking. Simple three-dimensional objects were needed; and styrofoam, which can be cut into various shapes, served this purpose. (Starkweather, 1966, p. 7).

The final instrument, the Starkweather Originality Test, consists of a pretest or warm-up session in which the experimenter encourages the child to think of different responses for eight three-dimensional forms, and the test proper during which the child's responses are accepted without question even though he may repeat the same ideas

several times. The pretest consists of eight plastic foam pieces, two each of four different shapes; and the test proper consists of 40 pieces, four each of ten different shapes.

The scoring of the Originality Test is an adaptation of the statistical infrequency method. Each response made by a given child is compared to all other responses made by him and not to the responses made by other children. Each child's originality score is then a simple count of the number of different responses that he gives during the test.

The validity of the Starkweather Originality Test was demonstrated by comparing teacher's judgments of children's originality to the children's test scores. This was done as a paired-comparisons test. The children's names were presented in pairs and the teachers were asked to indicate which of the two children was the more original. A Chi-square analysis indicated a statistically significant agreement between the teacher's judgments and the children's scores. ($\chi^2 = 22.752; p < .001$).

The validity of the originality test was also demonstrated by comparing the originality scores of 13 children with their freedom of expression. The freedom scores were determined by the variety of each child's play responses when given an opportunity to play alone with a series of simple toys. A rank order correlation indicated a statistically significant agreement between these two sets of scores ($\rho = +0.687; p < .05$). The test was accepted as valid.

The reliability of the originality test was determined by a split-half correlation. The sums of alternate responses were used in this analysis. The correlation coefficient, corrected by the

Spearman-Brown formula, was +0.932 ($p < .01$). The test was accepted as reliable.

The originality test requires verbal responses; nevertheless, the originality scores are independent of verbal ability. This was demonstrated by an analysis of originality scores and scores earned on the Peabody Picture Vocabulary Test. The product-moment correlation coefficient was +0.073 (n.s.). The originality test was accepted as independent of verbal ability.

The Starkweather Originality Test was one of the instruments chosen for use in the present research. Two comparable forms of the test are available, Form A and Form B, and both were used in the data gathering. A detailed description of the instrument is presented in Appendix C.

Curiosity

The creative person has an inquiring mind. He is curious; he has the capacity to wonder and he tends to seek novel percepts. Curiosity is usually accepted as an intellectual characteristic of the creative person.

When the study of curiosity was first initiated, children's exploratory behavior was observed as they played with a box designed to arouse curiosity. The box had four compartments in which there were objects for the children to explore and manipulate. The children's responses to the box were interesting. Some of them opened the four compartments quickly, one after the other, giving what seemed to be superficial attention to the contents; while other children explored the contents of one compartment the entire time

they were being observed. No objective way of measuring the children's curiosity could be devised, and therefore, the curiosity box was abandoned.

Many attempts were made to design an instrument which could be used to measure young children's curiosity, and finally a simple game that measured children's preference for the novel was accepted as a test of curiosity. The instrument consisted of a series of paired designs, one familiar and the other novel. During the administration, the child first became familiar with several black-on-white designs by talking about them. These were then removed and he was offered his choice between a familiar and a novel design, both of which were on colored paper. This procedure was repeated and the child constructed a booklet of the designs that he chose. The scoring was a simple numerical count of the number of novel designs chosen.

The curiosity test, as designed, measured only a child's preference for the novel. This quality is a part of curiosity, but when considered alone, it provides too narrow a focus for a satisfactory test of curiosity.

Flexibility

Another characteristic of the creative person is flexibility, or more specifically, mental flexibility. This is the ability to adapt to new situations when a change in behavior is required or the ability to back off and look at something from a new angle.

The test which was designed to measure flexibility consists of three training tasks during which the child learns certain "correct" responses (based on the concepts of shape, size, and brightness) and

two reversal shift tasks in which he is required to abandon the learned responses in order to adapt to new situations. For example, when the child learns that "round" is the correct response in the game he is playing, a new game is introduced in which "square" is the correct response. The child's flexibility is indicated by the ease with which he is able to adapt, that is, the ease with which he is able to make the reversal shift.

The Flexibility Test is a complex and cumbersome instrument. It is in its infancy, and neither reliability nor validity has been established. Use of the test thus far has been promising and refinement is warranted.

Independence

Independence is another characteristic of the creative person. Here the reference is to behavioral or instrumental independence, and not to emotional independence.

Behavioral independence is exhibited when a child initiates his own activities and copes with difficulties without seeking help. . . . In this context, instrumental independence is considered a positive quality. However, when instrumental independence is compulsive and the child cannot permit himself to accept help even in difficult situations, instrumental independence is a negative quality. . . . Creativity theory suggests that free rather than compulsive behavior is necessary for creative expression; therefore, neither the compulsively dependent nor the compulsively independent person has the freedom necessary for optimum creative living. (Patton, 1969, p. 2).

When the study of independence was initiated, the Keister puzzle box (Keister, 1937) was adapted for use as an independence test. The puzzle box was a shallow box containing wooden cutouts of familiar objects, and only when these pieces were placed flat in

the box, could the lid be closed. The puzzle box was extremely difficult for young children and it provided a situation in which they needed help to complete the task. As an independence test, the puzzle box was administered just as Tether (1961) had administered inlay puzzles. As each child worked with the puzzle box, he was offered help at regular intervals and he was also given help each time he requested it. His independence score was indicated by the number of times that he actually accepted help. The puzzle box test, as a measure of behavioral independence, was used by Griffin (1966), White (1967), and Baxter (1968).

A major problem with the puzzle box test was that it did not provide the child with experiences of success after he was offered help; therefore, he had no way of knowing that he had actually received genuine help. In an attempt to overcome this problem, two new types of independence tests were developed and compared. One was a set of inlay puzzles, graded in difficulty (Smith, 1969), and the other was a set of small puzzle boxes, graded in difficulty (Patton, 1969). At the same time, a pictorial questionnaire was developed as a validation instrument.

The design of the Puzzles Independence Test and the Puzzle Box Independence Test were similar, but because of young children's familiarity with inlay puzzles in general, the Puzzles Independence Test proved to be the less satisfactory of the two and was abandoned as a research instrument.

The Puzzle Box Independence Test consists of a set of small flat boxes, each containing from two to five puzzle pieces. Administration of the test begins with a demonstration during which the child is told

that he will be given help with the puzzle boxes whenever he wants to be helped. For the test proper, the puzzle boxes are then presented in an order which makes it possible for the child to start with an easy box which provides an experience of quick success and to end with an easy box which again provides an experience of quick success. The order of presentation for the total series of boxes is such that for the first four puzzle boxes the difficulty for the child gradually increases, and for the last four puzzle boxes the difficulty gradually decreases.

The scoring of the Puzzle Box Independence Test is a measure of the relationship between the difficulty of the task for the child and the amount of help he accepts in completing the task. For each puzzle box, independence can be specifically measured in terms of (a) the number of pieces in the puzzle box, (b) the number of pieces the child picks up to put into the box, which includes a count of those he removes and replaces, and (c) the number of times the child accepts help. Each child's independence score is determined by the relationship between the level of difficulty at which he chooses to work and the extent to which he accepts help. The formula is as follows: independence equals the mean level of difficulty at which the child chooses to work divided by the mean amount of help that he accepts.

The Puzzle Box Independence Test was designed so that it had face validity.

The puzzle boxes offered the children a situation in which they were faced with a difficult task and had the option of working alone or accepting help. In such a situation, a child who preferred to work by himself was behaviorally more independent than a child who accepted help. Nevertheless,

the puzzle boxes were only one type of situation and may or may not have revealed the independence that a child might show in his everyday activities. (Patton, 1969, p. 41).

In order to obtain a more general picture of instrumentally independent behavior, a pictorial questionnaire, which offered children choices between dependent and independent situations in everyday activities, was administered as a validation test. A Spearman rank order correlation indicated no significant relationship between the independence test scores and the Pictorial Questionnaire scores; however, the results of a Mann-Whitney U test indicated that the children who were high-scoring on the independence test scored significantly higher on the questionnaire than did the children who were low-scoring on the independence test. ($U=63.5$; $p<.05$).

The reliability (internal consistency) of the Puzzle Box Independence Test was determined by a split-half analysis. The correlation coefficient, corrected by the Spearman-Brown formula, was $+0.70$ ($p<.01$). The test was accepted as reliable.

Use of the Puzzle Box Independence Test thus far has been most promising; however, more extensive validation and additional refinement of the instrument are recommended.

Masculinity-Femininity

The study of masculinity-femininity is a logical part of creativity research. Some writers have stated that highly creative men are less masculine than their peers and highly creative women are less feminine than their peers. (Barron, 1957; Roe, 1959; Torrance, 1962). One explanation of this finding is that creative expression

requires both sensitivity and independence; and in our culture, sensitivity is a feminine quality and independence is a masculine quality. Sex differences in creative expression have also been found among school age children. Boys excel in certain creative activities, and girls excel in others. (Torrance, 1963).

A masculinity-femininity test, the Starkweather M-F Test, has been developed for use with preschool children. This test measures masculine and feminine preferences and is designed so that the evaluation of what is masculine and what is feminine is based on the actual choices of the children being tested. The assumption underlying this design is that the behavior of boys is boy-behavior (masculine) and the behavior of girls is girl-behavior (feminine).

The materials for the Starkweather M-F Test include a picture booklet of 20 to 24 pages and individually mounted pictures, identical to those used in the test booklet. On each page there are three pictures (gummed seals) which are arbitrarily selected as masculine, feminine, and neutral. This placement of masculine and feminine pictures on each page is done for the purpose of maximizing the power of the test to discriminate between the preferences of boys and girls. The pictures themselves are commercially produced gummed seals and are selected to include a variety of objects such as animals, cars, babies, flowers, cowboys, and Mother Goose figures. As each child is shown the booklet, page by page, he chooses the picture on each page that he prefers and he is given an identical picture to keep.

The scoring of the Starkweather M-F Test provides a measure of masculinity-femininity which is based on the actual choices of

the children themselves rather than being based on the judgments of adults.

Each picture in the M-F Test booklet is assigned a score, a masculine or feminine value, which is determined by the specific choices of all the children in the study. For example, a picture chosen by a majority of the boys and by few of the girls is weighted heavily as masculine. The M-F score for an individual child is then figured by adding the masculine and feminine values of all the pictures he has chosen. (Starkweather, in Goldsmith, 1970, p. 45).

The elimination of the bias of adult judgments in the scoring of the M-F Test is a unique achievement which has not been possible when researchers have used other measuring devices.

The Starkweather M-F Test was accepted as having face validity inasmuch as it was designed to discriminate between the preferences of boys and girls; nevertheless, specific validation of the test seemed advisable and was undertaken by McKinzie (1968).

For the most part, where young children are concerned, masculinity and femininity are judged on the basis of behavior and appearance. For example, adults judge a girl to be a tomboy if her preferred activities, games, toys, playmates, and clothing are more "appropriate" for boys than for girls. The rather common acceptance of judgments such as this suggested the possibility of designing a validation test which would measure masculinity and femininity as culturally defined. The validity of the M-F Test would be assured if the test scores, free of adult bias, were in agreement with the cultural expectations for young boys and girls.

A validation test booklet was constructed similar in design to the M-F Test booklet. It consisted of 15 pages of clothing and 15 pages of toys and activities. Each page contained three pictures which were arbitrarily chosen as masculine, feminine, and neutral. The booklet was shown to 20 middle-class adults (10 men and 10 women) who were asked to indicate the most masculine and the most feminine picture on each page. The validation booklet was then shown to 20 middle-class children (10 boys and 10 girls). Each child was asked to play a game of "Let's pretend" during which the experimenter told a story as the child made his choices. (Starkweather, in Goldsmith, 1970, p. 46).

The method of scoring the validation test was the same as the method of scoring the M-F Test. Assigned scores for each picture in the validation booklet were calculated for the adults and for the children. There was extremely high agreement between these two sets of scores. There were 90 individual pictures in the booklet, and the adults and children agreed on the masculine, feminine, or neutral rating of 86 of these.

In order to answer the question of whether the Starkweather M-F Test actually measures masculinity and femininity, the children's scores derived from their choices of pictures in the validation booklet, which were in agreement with cultural expectations, were compared to their M-F Test scores. A Spearman rank order correlation was used for this analysis. The correlation coefficient was +0.914, significant beyond the .01 level. In view of these results, the Starkweather M-F Test for preschool children was accepted as a valid measure of masculinity and femininity.

The reliability (internal consistency) of the Starkweather M-F Test was determined by a split-half analysis. The correlation coefficient, corrected by the Spearman-Brown formula, was +0.936 ($p < .001$). The M-F Test was accepted as reliable.

Social Relations

Social relations has been defined by Adams (1967) as a concept which refers either to the interaction of two or more individuals or to the influence of one individual upon another.

Traditionally, the concept has been subdivided into fairly major categories of behavior. Four categories are frequently used: (1) behavior that is influenced by the presence

and/or the behavior of other persons (e.g., various forms of behavior subsumed under the label of "social reinforcement"); (2) behavior that is aimed at influencing other people (e.g., a child's dominant behavior in a free-play situation, or "showing off" antics when company visits the home); (3) behavior associated with and peculiar to membership in identifiable groups (e.g., interaction patterns as affected by group size, group composition, use of materials, physical facilities and the like); and (4) behavior that is directed or controlled by organized society and its institutions (e.g., family, church, school). (Adams, 1967, page 397).

In studies of the sociometric status or the social value of young children, the major focus has been on the first two of these categories.

The influence of social relations on creative expression has indicated the need to include this variable in any study of the development of creative ability.

The way in which an individual experiences social relationships is an essential factor in the nurturance or stifling of creative behavior. Some writers, e.g., Maslow (1959) and Erikson (1963), believe the basic needs for physical care, affection, security, and self-esteem must be met before creative behavior can emerge. Disagreement with this belief occurs when creative behavior is thought of narrowly in terms of creative genius and creative product-producing. For instance, Haimowitz (1966) points out that an enormous number of outstandingly creative persons in science, art, and politics did not have their needs cared for in childhood. He cites examples of creative genius which flowered in spite of the damage of broken homes, poverty, and lack of parental love. This evidence gives rise to the belief that some individuals are creative in order to compensate for their losses. This writer maintains that such creativity does not occur in a vacuum, but that in order for the creative person to be able to function as he does, other people must recognize and react to him at crucial times, and also that unless the creative person communicates with others, he is not recognized as being creative. (Moffatt, 1969, pages 9-10).

Until recently, sociometric tests for young children have merely been measures of popularity. Most of the tests have been designed to measure a child's desirability as an associate in group activities and have been based on the assumption that an individual

wants to be near a person he likes. These tests have usually been interviews in which the child is asked with whom he would like to do certain things. Recently, a change in design was introduced, and tests were developed which measured a child's disposition for evoking altruistic responses in others. Here the underlying assumption is that an individual wants to benefit a person he likes, and the tests are designed so that each child chooses friends to whom he gives gifts. The mechanics of this is handled by having the child place each gift in an envelope designated for the chosen child. A major advantage of this design is that action is taken immediately; and for the child, it is obvious that his choices matter.

An initial problem in any sociometric test is that of determining the number of choices or rejections the children will be permitted to make. To solve this problem, Starkweather (1962) designed a three-choice sociometric test in which every child chose three friends, and a paired-comparisons test in which every child made a choice in each of all possible pairs of children in his group. In the paired-comparisons test, each choice necessarily involved the selection of one child and the rejection of the other. The paired-comparisons test was sufficiently rigorous to serve as a criterion of validity for the three-choice sociometric test administered to the same children. Both of these tests were based on the assumption that an individual wants to benefit a person he likes, and both were picture sociometric tests, i.e., the child saw pictures of all the children in his group as he was making his choices.

Three different methods of scoring the three-choice sociometric test were studied in order to determine which method provided the

most accurate measure for young children. All three methods gave results which correlated significantly with the results of the paired-comparisons test; and a 2-1-1 method of weighting, in which two points were given for each first choice, provided the most accurate measure of sociometric status for the children. On the basis of this research, the three-choice sociometric test, which is shorter and more easily administered than the paired-comparisons test, was accepted as sufficiently accurate for use with young children.

A comparison of two sociometric tests was made by Underwood (1962) and Sims (1963). One test was based on the assumption that an individual wants to be near a person he likes, and the other was based on the assumption that an individual wants to benefit a person he likes. In the Underwood study, the problem of distinguishing these two aspects of social relations became apparent. For example, if a child chose someone to go with him on a special excursion, he was choosing someone he wanted to be near, but at the same time, he was benefitting the other child. For the Sims study, these two aspects of social relations were more clearly identified. In one test, the child chose children whom he wanted to benefit, i.e., children to whom he wanted to give his gifts. In the other test, the children chosen were to benefit the child who chose them; for example, the chosen child helped the subject child make a collage or a May basket which was then kept by the subject child. A major finding in the Sims study was that young children who had known each other for one month had formed measurable social relationships, but they did not distinguish between the two aspects of social relations until they had known each other for several months.

The development of a sociometric test which was more than a measure of children's popularity began with a study of reciprocal sociometric choices (Curd, 1967). In subsequent research, a social relations test evolved which was designed so that each child's value within his peer group was measured in terms of the extent to which his gift-giving was reciprocated by the children whom he chose. This test, now identified as the Starkweather Social Relations Test, combines a picture interview technique with gift-giving. A photograph of the peer group is seen by each child as he makes his choices, and the scoring indicates the relationship between the child's choices of other children and their choice of him.

In the administration of the Starkweather Social Relations Test, the child is given his choice of several possible gifts with the understanding that the one he chooses is his to keep. For example, he may choose one of several balloons or marbles or small plastic toys, such as animals or automobiles. Three gifts identical to the one chosen by the child for himself are then placed on the table before him. A photograph of the peer group is then shown to the child and he is asked to name or point to three friends to whom he wants the gifts to be given. As the child makes his choices, he helps to place the gifts in pre-labelled envelopes designated as belonging to the children he has chosen. This procedure of gift-giving is repeated until the child has chosen friends for four different gifts, making a total of 12 choices.

The scoring of the social relations test is designed to show the relationship between the child's choices of other children and their choice of him. For example, Child F-1316 was chosen by five of the

seven children whom she chose. Each of these relationships is expressed as a weighted score to show the return that this child received on her investment, and the sum of these weighted scores is then divided by the total number of children chosen by her. The social relations score for this child is figured as follows:

$$\frac{1/1 + 1/1 + 1/3 + 2/1 + 2/3 + 0/2 + 0/1}{7} =$$

$$\frac{1.00 + 1.00 + 0.33 + 2.00 + 0.67 + 0.00 + 0.00}{7} = \frac{5.00}{7} = 0.71$$

Child F-1316 chose seven different children, and in turn, five of them chose her. She chose these children a total of 12 times, but she was chosen by them only nine times and therefore did not receive a complete return on her investment in them. This is indicated by her score of 0.71. Possible scores on the social relations test range from 0.00 to 4.00. A score of 0.00, which is not uncommon, would be earned by a child who received no return on his investment in other children; i.e., no child to whom he gave a gift would have chosen him in return. A score of 4.00, which is highly improbable, would be earned by a child who received maximum return on his investment in other children; i.e., he would have given his gifts to 12 different children and each would have chosen him four times in return. Thus far, in the testing of several hundred children, the highest score has been 1.89, which was earned by a child who considered everyone his friend and who, in return, was considered a very special friend by almost everyone in his peer group.

The Starkweather Social Relations Test is basically a three-choice test, and the validity of such a test has been demonstrated in a

comparison of scores earned on a paired-comparisons test and scores earned on a three-choice test. A Spearman rank order correlation yielded a coefficient of +0.830 ($p < .01$).

Relationships Among Characteristics

Instruments have been developed for the measurement of characteristics related to creativity in early childhood, and a few studies have been conducted in which the relationships among these studies have been examined. The findings of these studies have been only suggestive, but they have definitely opened the door for future research.

In an early study of children's willingness to try difficult tasks, Pendergraft (1965) studied the relationship between mothers' goals for their children and the children's goals for themselves. The Starkweather Target Game was used in this study. For boys and girls, regardless of age, the mothers set higher goals for the children than the children set for themselves; that is, the mothers made the game more difficult for the children than the children made it for themselves.

The masculinity-femininity of preschool children has been studied in relation to independence, socioeconomic status, and conformity to parents. White (1967) studied the relationship between independence and masculinity-femininity. She found no relationship between independence and masculinity, but she did find a relationship between independence and femininity. The more independent girls were the more feminine, and the less independent girls were the less feminine. McKinzie (1968) studied the

relationship between socioeconomic status and masculinity-femininity. Her major finding was that middle-class girls showed a change from low femininity at age three to marked femininity at age four; whereas the lower-class girls showed the reverse of this, a shift from marked femininity at age three to low femininity at age four. Similar socioeconomic differences were found by Marx (1969). Marx was interested in socioeconomic differences in masculinity-femininity and in young children's conformity to their mothers. She found that the more masculine boys were more influenced by the opportunity to conform than were the less masculine boys. A similar relationship was true for the four-year-old lower-class girls; the more feminine girls were more influenced by the opportunity to conform than were the less feminine girls. Goldsmith (1970) studied the relationship between masculinity-femininity and preschool children's conformity to their fathers and to their mothers. Her major finding was that boys who are conforming toward both parents were significantly less masculine than other boys, that is, less masculine than boys who were conforming to just one parent or to neither.

Patton (1969) studied the relationship between independence and impersonal conformity, both of which are motivational characteristics of creativity. She found no significant relationship between the two, indicating that the instruments she used were measuring characteristics that are independent of each other.

The social value or social acceptance of preschool children has been studied in relation to various aspects of creative ability. Sims (1963) was interested in children's social value to the group and their creativity as indicated by their freedom of expression in

play. She found that children who were the most creative and children who were the least creative tended to be isolates; however, the most creative children seemed to be happy in their isolate status, whereas the least creative children were dissatisfied and attempted in various ways to gain acceptance in the group. Moffatt (1969) investigated the relationship between the social acceptance of preschool children by their peer groups and two characteristics of creativity, namely, originality and flexibility. Her major finding was a negative relationship between flexibility and social acceptance. In the pre-kindergarten group in particular, the children who scored high in flexibility scored low in social relations, and the children who scored low in flexibility scored high in social relations. This finding seems to indicate that the more rigid or perhaps the more predictable of the pre-kindergarten children were the more accepted in their social group.

Implications for the Present Research

In the creativity research program at Oklahoma State University, instruments have been developed specifically for use with preschool children. Several of these instruments are designed to measure the intellectual and motivational characteristics which may identify creative children, and others are designed to measure qualities such as social relations and masculinity-femininity which may be related to creative expression. As these instruments have been developed and refined, the relationships among some of the characteristics have been studied; however, no systematic research has been undertaken. Now that a number of valid and reliable instruments are available

for creativity research with young children, a program of research can be initiated in which the relationships among intellectual and motivational characteristics are studied.

The two instruments chosen for use in the present research, the Starkweather Originality Test and the Starkweather Form Boards Test, make it possible to study the relationship between an intellectual characteristic, originality, and a motivational characteristic, freedom to use conforming and nonconforming behavior. Originality is accepted as a valid indicator of creative ability, and freedom to use conforming and nonconforming behavior is accepted as a characteristic which facilitates the expression of creative ability. An analysis of the relationship between these two characteristics should contribute to our understanding of the development of creative ability in early childhood.

CHAPTER III

METHOD AND PROCEDURE

The present research was a study of creative ability in early childhood. The specific purpose was to investigate the relationship between an intellectual and a motivational characteristic of the creative person. The intellectual characteristic chosen was originality, which is usually accepted as a valid indicator of creative ability. The motivational characteristic chosen was conformity-nonconformity or the freedom to use conforming and nonconforming behavior, which may facilitate or inhibit the expression of creative ability. The data were gathered cooperatively with other researchers as part of a larger creativity program, a study of the creativity profiles of preschool children.

In this chapter the children who participated in the study are described, the instruments for measuring originality and conformity-nonconformity are presented, and recommendations are made for the analysis of the data.

Subjects

The subjects who participated in this study were 125 preschool children, 62 boys and 63 girls. The ages of the children ranged from three years no months to six years four months. The children were in attendance at the Oklahoma State University Child Development

Laboratories, and private nursery schools and kindergartens in Oklahoma City and Stillwater, Oklahoma. The distribution of subjects by age and sex is presented in Table I. Descriptive data and test scores for individual children are presented in Appendix A, Tables V and VI.

Research Instruments

The two instruments chosen for use in the present research, the Starkweather Originality Test and the Starkweather Form Boards Test, made it possible to study the relationship between an intellectual characteristic, originality, and a motivational characteristic, freedom to use conforming and nonconforming behavior. The interval between the tests was less than one month for approximately 100 of the 125 subjects. Only in eight cases did the interval between tests exceed two months.

Originality

The Starkweather Originality Test was selected as the instrument for the measurement of children's originality. This test consists of three-dimensional abstract forms made of plastic foam. There are 40 of the forms, four each of ten different shapes. The child responds to each form, one at a time, telling what each piece might be. The scoring is a simple numerical count of the number of different responses each child gives, and the high scores indicate the more original children. A complete description of this test, its administration and scoring, is presented in Appendix C.

TABLE I

DISTRIBUTION OF SUBJECTS BY AGE AND SEX
(N = 125)

Age Group	Boys	Girls	Total
Five-year-olds (5:0 - 6:4)	26	26	51
Four-year-olds (4:4 - 4:11)	21	26	47
Three-year-olds (3:0 - 4:3)	15	12	27
Total (3:0 - 6:4)	62	63	125

Conformity-Nonconformity

The Starkweather Form Boards Test was selected as the instrument for the measurement of children's freedom to use conforming and nonconforming behavior. The test is designed to measure a child's tendency to conform in an impersonal situation. It consists of four form boards, picturing scenes familiar to most children of preschool age, e.g., a tree, a house, a playground, and a barnyard. The child chooses between paired picture pieces in completing each form board, and he is instructed to choose the picture pieces that he prefers. The opportunity to conform is provided by black and white line drawings visible in each hole of the form board, and the child may or may not follow this model. The scoring of the test indicates the relationship between the child's conforming and nonconforming responses. High positive scores are earned by the more conforming children, and high negative scores are earned by the more nonconforming children. A complete description of this test, its administration and scoring, is presented in Appendix B.

Analysis of Data

The data are analyzed for age and sex differences in originality and in conformity-nonconformity. The Kruskal-Wallis analysis of variance and the Mann-Whitney U Test are used for these analyses.

The relationship between originality and conformity-nonconformity is analyzed. The Spearman rank order correlation is used for this analysis.

CHAPTER IV

RESULTS

The purpose of this research was to study the relationship between two characteristics of the creative person, namely, originality and freedom to use conforming and nonconforming behavior. The data analyses presented in this chapter include an analysis of sex and age differences for each characteristic measured, and an analysis of the relationship between these two characteristics. The distribution of originality scores, by sex and age, is presented in Table II; and the distribution of conformity scores, by sex and age, is presented in Table III.

Sex Differences

The Mann-Whitney U Test was used to analyze the originality and conformity scores for sex differences. The responses of the boys and girls were comparable for both characteristics. No sex differences were significant.

Age Differences

The Kruskal-Wallis analysis of variance was used for the analysis of age differences. For the conformity scores, no age differences were significant. For the originality scores, no age differences were significant for the girls, but age differences were significant

TABLE II
 DISTRIBUTION OF ORIGINALITY SCORES
 (N = 125)

Age Group	N	Median	Range
Five-year-olds			
Boys	26	25.0	9 - 37
Girls	25	21.0	3 - 38
Total	51	24.0	3 - 38
Four-year-olds			
Boys	21	20.0	8 - 36
Girls	26	21.0	8 - 35
Total	47	21.0	8 - 36
Three-year-olds			
Boys	15	16.0	9 - 31
Girls	12	19.5	11 - 36
Total	27	17.0	9 - 36
Total			
Boys	62	20.5	8 - 37
Girls	63	21.0	3 - 38
Total	125	21.0	3 - 38

TABLE III
 DISTRIBUTION OF CONFORMITY SCORES
 (N = 125)

Age Group	N	Median	Range
Five-year-olds			
Boys	26	14	0 - 80
Girls	25	16	0 - 76
Total	51	14	0 - 80
Four-year-olds			
Boys	21	28	0 - 78
Girls	26	37	0 - 80
Total	47	30	0 - 80
Three-year-olds			
Boys	15	24	2 - 68
Girls	12	20	2 - 78
Total	27	24	2 - 78
Total			
Boys	62	20	0 - 80
Girls	63	20	0 - 80
Total	125	20	0 - 80

for the boys. The median originality scores for the boys in the three age groups ranged from a score of 15 for the three-year-olds to a score of 25 for the five-year-olds. The older boys earned significantly higher originality scores than did the younger boys ($H=6.798$; $p<.05$).

Relationship between Originality and Conformity-Nonconformity

Spearman rank order correlations were used in the analysis of the relationship between the children's originality and their freedom to use conforming and nonconforming behavior. Correlation coefficients and median scores for the originality and the conformity-nonconformity tests are presented in Table IV. For children in the three-year-old and four-year-old groups and for boys in the five-year-old group, there was no significant relationship between originality and conformity-nonconformity. However, for the girls in the five-year-old group, there was a significant correlation between the two characteristics. The girls who scored high in originality showed freedom to use conforming and nonconforming behavior in their responses to the form boards test, whereas the girls who scored low in originality showed a lack of this freedom ($\rho = 0.426$; $p<.05$).

Summary

The major findings related to the purpose of this research are as follows:

1. There were no sex differences in originality or in conformity-nonconformity.
2. There were no age differences in conformity-nonconformity.

TABLE IV
 SPEARMAN RANK ORDER CORRELATIONS BETWEEN
 ORIGINALITY AND CONFORMITY SCORES
 (N = 125)

	N	Median Scores		rho	p
		Originality	Conformity		
Five-year-olds					
Boys	26	25	14	0.230	n.s.
Girls	25	21	16	0.426	<.05
Total	51	24	14	0.329	<.02
Four-year-olds					
Boys	21	20	28	0.287	n.s.
Girls	26	21	37	0.008	n.s.
Total	47	21	30	0.067	n.s.
Three-year-olds					
Boys	15	16	24	-0.077	n.s.
Girls	12	19.5	20	-0.287	n.s.
Total	27	17	24	-0.134	n.s.
Total					
Boys	62	20.5	20	0.071	n.s.
Girls	63	21	20	0.165	n.s.

3. For the girls, there were no age differences in originality.

4. For the boys, there was a significant age difference in originality. The older boys earned higher originality scores than did the younger boys.

5. There was no significant relationship between originality and conformity-nonconformity except for the five-year-old girls. For this group, a significant positive relationship existed between the two characteristics. The girls who scored high in originality were free to use conforming and nonconforming behavior, whereas the girls who scored low in originality lacked this freedom.

CHAPTER V

SUMMARY AND IMPLICATIONS

The present research was a study of creative ability in early childhood. The specific purpose was to investigate the relationship between an intellectual and a motivational characteristic of the creative person. The intellectual characteristic chosen was originality, which is usually accepted as a valid indicator of creative ability. The motivational characteristic chosen was conformity-nonconformity, or the freedom to use conforming and nonconforming behavior, which may facilitate or inhibit the expression of creative ability.

The subjects who participated in this study were 125 preschool children, 62 boys and 63 girls, ranging in age from three years no months to six years four months. The children were in attendance at the Oklahoma State University Child Development Laboratories, and private nursery schools and kindergartens in Oklahoma City and Stillwater, Oklahoma.

Two research instruments, developed as a part of the creativity research program at Oklahoma State University and designed for use with preschool children, were selected for this study. The children's originality was measured with the Starkweather Originality Test and the children's freedom to use conforming and nonconforming behavior in an impersonal situation was measured with the Starkweather Form

Boards Test. The originality test consists of three-dimensional abstract forms which the child responds to, one at a time, telling what each piece might be. The scoring is a simple numerical count of the number of different responses each child gives, with high scores indicating the more original children. The form boards test consists of four form boards, picturing scenes familiar to most children of preschool age. The child chooses between paired picture pieces in completing each form board, and he is instructed to choose the picture pieces that he prefers. The opportunity to conform is provided by black and white line drawings visible in each hole of the form board, and the child may or may not follow the model. The scoring of the test indicates the relationship between the child's conforming and nonconforming responses. High positive scores are earned by the more conforming children, and high negative scores are earned by the more nonconforming children.

The data gathered in this research were analyzed for age and sex differences and for the relationship between originality and conformity-nonconformity. The major findings were as follows:

- (1) There were no sex differences in originality or in conformity-nonconformity.
- (2) There were no age differences in conformity-nonconformity.
- (3) For the girls, there were no age differences in originality.
- (4) For the boys, there was a significant age difference in originality. The older boys earned higher originality scores than did the younger boys.
- (5) There was no significant relationship between originality and conformity-nonconformity except for the five-year-old girls. For this group, a significant positive relationship existed between the two characteristics. The girls who scored high

in originality were free to use conforming and nonconforming behavior, whereas, the girls who scored low in originality lacked this freedom.

Implications

The ultimate goal of creativity research is to discover the forces that encourage or hinder the development of creative ability. These forces may be found in any situation in which a change in creative ability is observed; for whenever a change does occur, there must be a reason for that change.

A few researchers have reported a decrease in creativity at approximately age five. The present study did not show a drop in creativity (originality) at that age, but it did show a positive relationship between originality and conformity-nonconformity. Among the five-year-old girls, those who were highly conforming were less original, and those who were free to use conforming and nonconforming behavior were more original. This relationship between these two characteristics may hold an explanation for the drop in creative ability that has been reported by some researchers.

Conformity-nonconformity, as a motivational characteristic, can handicap a child's creative expression; and it follows that children who are susceptible to pressure for conformity will be hindered in creative expression when they are under such pressure. Entrance into kindergarten may provide the pressure for conformity to which susceptible girls respond; and for a group of children, the result would then be the correlation found in the present study. Girls who are free to conform or not to conform would tend to earn the higher

originality scores, and girls who respond to the pressure for conformity would tend to earn the lower originality scores.

The relationship between creative expression and conformity-nonconformity poses an important problem in education. Educators have a dual role of helping children to acquire skills and knowledge, and at the same time of helping them to use these skills and knowledge freely in expressing themselves. Yet when educators are focusing on the acquisition of skills and knowledge, they necessarily tend toward pressures for conformity which, in turn, inhibit creative expression. Thus, the problem becomes one of how educators can help children to develop skills and acquire knowledge without inhibiting the free use of these skills and knowledge in creative expression.

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APPENDIX A

TABLE V
 DESCRIPTIVE DATA AND TEST SCORES FOR BOYS PARTICIPATING
 IN A STUDY OF THE RELATIONSHIP BETWEEN ORIGINALITY
 AND CONFORMITY-NONCONFORMITY
 (N = 62)

Sex and Code No.	Age	Originality Test Form	Test Scores	
			Originality	Conformity
M-1782	3:0	A	10	32
M-1866	3:7	A	09	52
M-1747	3:7	A	16	06
M-1772	3:9	A	10	02
M-1869	3:10	A	14	24
M-1723	3:10	A	11	10
M-1856	3:11	A	09	66
M-1863	3:11	A	10	14
M-1806	4:0	B	12	-12
M-1638	4:1	A	22	68
M-1834	4:2	B	15	16
M-1724	4:2	B	31	56
M-1862	4:3	B	15	64
M-1853	4:3	A	22	30
M-1792	4:3	A	21	10
M-1720	4:4	A	26	28
M-1864	4:4	A	20	58
M-1766	4:5	A	22	-02
M-1790	4:5	A	08	56
M-1794	4:5	A	28	60
M-1850	4:5	A	15	32
M-1664	4:5	A	18	-30
M-1721	4:5	A	22	10
M-1843	4:5	A	30	44
M-1859	4:6	A	11	34
M-1705	4:6	A	11	78
M-1662	4:6	A	18	74
M-1791	4:6	A	12	48
M-1781	4:7	A	19	06
M-1807	4:8	B	20	-02
M-1544	4:8	A	28	20
M-1844	4:9	A	36	22
M-1835	4:10	A	10	24
M-1808	4:10	B	32	-20
M-1809	4:11	B	22	-06
M-1857	4:11	A	16	00
M-1819	5:0	A	30	18
M-1548	5:0	A	28	-08
M-1860	5:0	A	09	58
M-1764	5:1	A	37	78
M-1787	5:1	A	11	50
M-1803	5:1	A	32	00
M-1821	5:1	B	29	42
M-1822	5:2	B	24	06
M-1823	5:3	B	11	58
M-1820	5:3	A	18	18
M-1658	5:4	A	28	04
M-1704	5:4	A	23	00
M-1824	5:4	B	32	-06
M-1825	5:5	B	35	-02
M-1763	5:5	A	28	70
M-1652	5:5	A	36	04
M-1650	5:6	A	12	26
M-1828	5:6	B	35	26
M-1827	5:6	B	15	-10
M-1826	5:6	B	23	02
M-1829	5:7	B	26	-14
M-1802	5:7	A	34	80
M-1500	5:7	A	10	-18
M-1736	5:9	A	14	-28
M-1722	5:11	A	12	04
M-1518	6:4	A	36	14

TABLE VI
 DESCRIPTIVE DATA AND TEST SCORES FOR GIRLS PARTICIPATING
 IN A STUDY OF THE RELATIONSHIP BETWEEN ORIGINALITY
 AND CONFORMITY-NONCONFORMITY
 (N = 63)

Sex and Code No.	Age	Originality Test Form	Test Scores	
			Originality	Conformity
F-1753	3:5	A	19	-02
F-1867	3:5	A	29	24
F-1868	3:9	A	11	34
F-1607	3:9	A	30	72
F-1728	3:10	A	36	-06
F-1854	3:11	A	17	08
F-1734	4:0	A	32	78
F-1776	4:1	A	19	-42
F-1852	4:1	B	15	-02
F-1783	4:1	A	20	-04
F-1865	4:1	B	20	36
F-1851	4:1	B	13	16
F-1752	4:5	A	32	04
F-1708	4:5	A	22	70
F-1784	4:5	A	17	58
F-1767	4:6	A	13	04
F-1771	4:6	A	35	-02
F-1669	4:6	A	12	02
F-1845	4:6	A	23	38
F-1846	4:6	A	09	62
F-1775	4:6	A	18	-02
F-1855	4:7	A	31	76
F-1788	4:7	A	11	40
F-1786	4:7	A	30	44
F-1572	4:8	A	23	00
F-1795	4:8	B	21	78
F-1793	4:9	B	21	80
F-1668	4:9	A	15	04
F-1789	4:10	A	21	68
F-1833	4:10	A	21	-20
F-1797	4:10	B	09	20
F-1796	4:10	B	08	36
F-1689	4:11	A	31	-56
F-1732	4:11	A	16	38
F-1773	4:11	A	28	42
F-1799	4:11	A	13	12
F-1801	4:11	A	21	26
F-1774	4:11	A	23	30
F-1770	5:1	A	09	70
F-1768	5:1	A	09	36
F-1731	5:1	A	03	76
F-1765	5:1	A	31	04
F-1849	5:2	A	11	-06
F-1571	5:2	A	18	14
F-1733	5:2	A	15	34
F-1729	5:3	A	35	-06
F-1657	5:3	A	11	06
F-1778	5:3	A	11	76
F-1812	5:6	B	16	46
F-1769	5:7	A	14	42
F-1815	5:8	B	19	40
F-1816	5:9	B	25	20
F-1480	5:9	A	31	00
F-1512	5:9	A	29	08
F-1800	5:9	A	13	08
F-1730	5:10	A	28	-08
F-1818	5:10	B	11	06
F-1817	5:11	B	38	-08
F-1839	5:11	A	38	08
F-1888	5:11	A	23	-04
F-1481	6:0	A	36	24
F-1525	6:0	A	33	14
F-1840	6:2	A	32	06

APPENDIX B

STARKWEATHER FORM BOARDS TEST
FOR PRESCHOOL CHILDREN*

developed by

Elizabeth K. Starkweather

Oklahoma State University
Stillwater, Oklahoma

The Starkweather Form Boards Test is a research instrument designed to measure conforming and nonconforming behavior in an impersonal situation. The form boards provide opportunities for the young child to make choices in situations in which he can follow a model or respond freely according to his own preferences; and the variety of picture pieces insures that each child is offered some pictures that he prefers more than others. The design of the form boards test is such that the compulsive quality and the conforming quality of a child's behavior are measured independently; and therefore, the test is able to discriminate between children who are compulsive conformists or nonconformists and children who are free to use either conforming or nonconforming behavior.

The Research Instrument

The Starkweather Form Boards Test consists of four form boards, approximately 12" x 14" in size, picturing scenes familiar to young children. These include a tree, a house, a playground, and a barnyard (Figures 1-4). Each form board has five holes, and for each hole there are four different pieces which could be used to complete the picture. The form boards are made of masonite. The boards and picture pieces are colored; and the opportunity to conform is provided by black and white line drawings placed behind each form board.

The black and white line drawings are painted on pieces of masonite, referred to as slides, and the drawings are positioned so that the appropriate picture shows in each hole of the form board when the slide is in place. For each form board, there are four slides; and these are paired to correspond with the pictures shown to the child during the test. In Figures 1-4, the paired pictures to the left of each form board are those for slides A and B, and the pictures to the right are those for slides C and D. For example, slides A and B for the Tree Form Board have line drawings for the following paired pictures: Boy-Kite, Cloud-Airplane, Branch-Bees, Squirrel-Butterfly, and Rabbit-Grass. The pairing of pictures is also indicated on the sample score sheet (page 66).

*The Starkweather Form Boards Test was developed as part of a creativity research program supported by the Research Foundation at Oklahoma State University.

The pairing of the picture pieces for the form boards is essential for the identification of conforming and nonconforming behavior. In the Tree Form Board (Figure 1), a line drawing of a rabbit is shown at the base of the tree. To complete this part of the picture, the child chooses between a rabbit and grass. If he chooses the rabbit, he is following the model; but whether he is conforming or showing a preference for the rabbit is a question which cannot be answered until the child has a second session with the form boards approximately one week later. At that time the child again chooses between the rabbit and the grass, but the line drawing is of the grass. The underlying assumption is that the child who really prefers the rabbit will choose the rabbit during both sessions if he is free to use conforming and nonconforming behavior; but the child who is a conformist will choose the rabbit only when the line drawing of the rabbit is shown, and the nonconformist will choose the rabbit only when the line drawing of the grass is shown.

The two sessions with the form boards provide the child with 80 choices between paired picture pieces. The conforming child will, for the most part, choose the pictures which correspond to the line drawings. The child who is free will choose the pictures he prefers, with the result that his choices will correspond to the line drawings approximately 50 percent of the time. The nonconformist, on the other hand, will choose the pictures that do not match the line drawings.

Administration

The Starkweather Form Boards Test is administered to each child individually and requires two sessions with an interval of approximately one week between the two. During the first session, the child sees the line drawings pictured on slides A and C; and during the second session, he sees the line drawings pictured on slides B and D.

The first session begins with the Tree Form Board in which the slide-A line drawings have been placed. In giving directions to the child, the experimenter names the picture, comments about the holes in the form board, and tells the child that he can put pieces into the holes to finish the picture the way that he wants it. The child is then shown one pair of pictures, is told that they both fit into the same hole, and is directed to put in the one that he wants. For example, "Here is a tree. But look at the holes in the picture. I am going to let you fix the tree just the way you want it. See this hole? (E. points to the hole at the base of the tree, and then places the rabbit and the grass picture pieces directly in front of the child.) Both of these pieces will fit in here. You put in the one you want." This procedure is repeated for each hole in the form board. As each pair of pictures is placed before the child, they must be placed in the left-right positions as indicated on the score sheet. This is true for both sessions with the form boards. An acceptable variation in the administration of the form boards test is to have the child indicate the hole that he wants to fill rather than having the experimenter make the choice. The order in which the

form boards are presented and the order in which the holes are filled may vary; but the picture pieces must be placed before the child in the left-right positions indicated on the score sheet.

The four form boards with the slide-A line drawings in place are presented to the child as described above. Then the boards with slide-C line drawings in place are presented in a similar manner. The children themselves enjoy helping with the changing of the slides.

Scoring

The scoring of the form boards test consists of a numerical count of the conforming and nonconforming responses made by the child. A D-score, or difference score, is figured by subtracting the number of nonconforming responses from the number of conforming responses. The possible range of D-scores is from -80 (complete nonconformity) to +80 (complete conformity).

Evaluation

The validity of the form boards test was demonstrated by comparing the responses of children in an experimental group, to whom the form boards were administered as described above, with the responses of children in a control group, to whom the form boards were administered without the line drawings, i.e., without the opportunity to conform.

If the form boards provide a valid measure of the influence of the opportunity to conform, then the children in the experimental group should have larger D-scores than the children in the control group. Frequency of "conforming" and "nonconforming" responses demonstrated by the control group would be the result of chance; and therefore, the D-scores for this group should approximate zero. A Chi-square analysis of the frequency of high and low D-scores for the two groups indicated that the children in the experimental group were influenced by the opportunity to conform. ($\chi^2 = 32.203$; $p < .001$).

If the form boards provide a valid measure of the opportunity to conform, the children in the experimental group should show fewer picture preferences than the children in the control group, i.e., they should be less apt to choose the same picture piece both times that it is presented. A Mann-Whitney U test analysis indicated that the children in the experimental group showed significantly fewer picture preferences than did the children in the control group. ($U = 11.5$; $p < .002$).

The reliability of the form boards test was demonstrated by a split-half analysis of the responses of the children in the experimental group. The correlation coefficient, corrected by the Spearman-Brown formula, was +0.860 ($p < .01$).

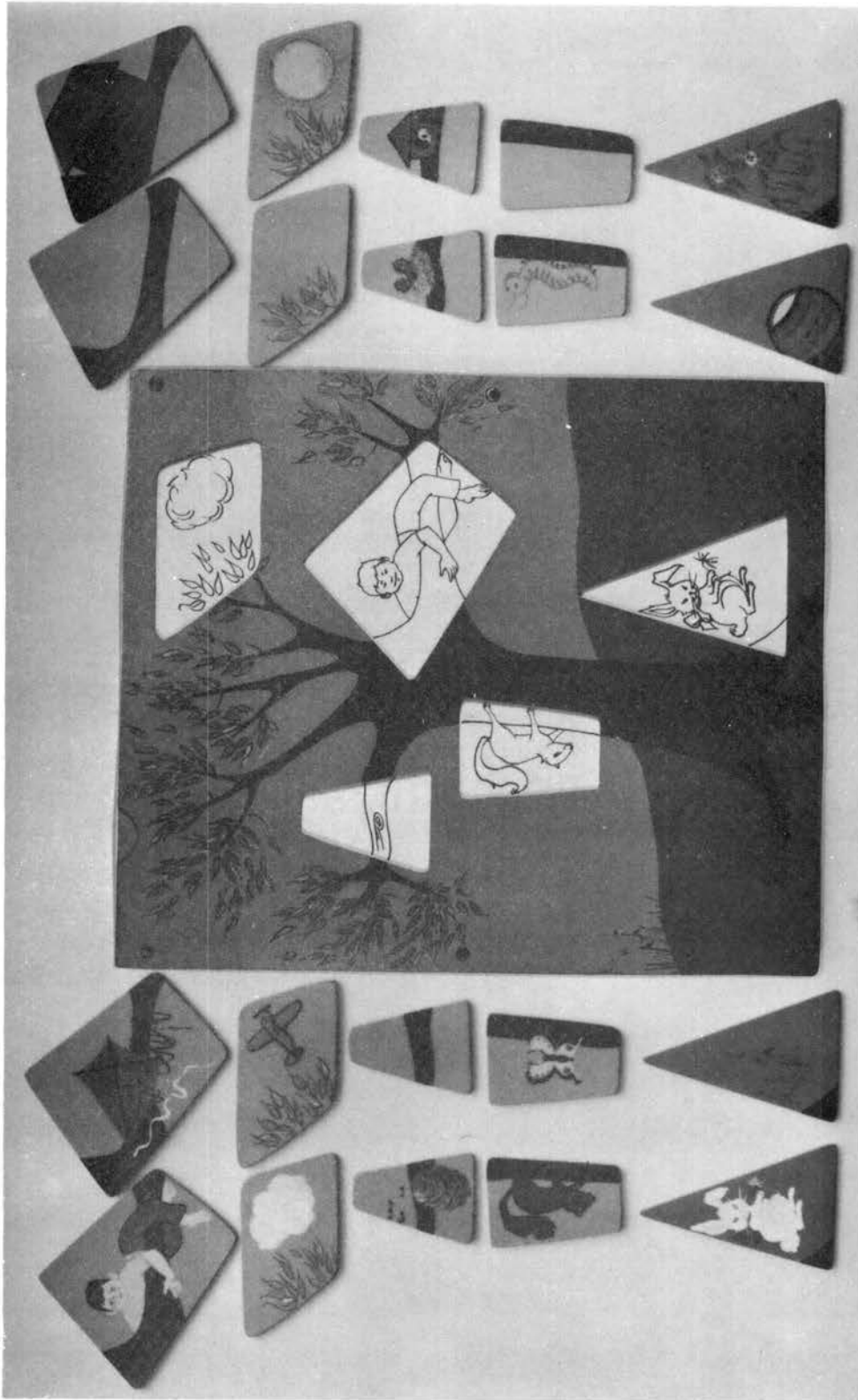


Figure 1. The Tree Form Board.

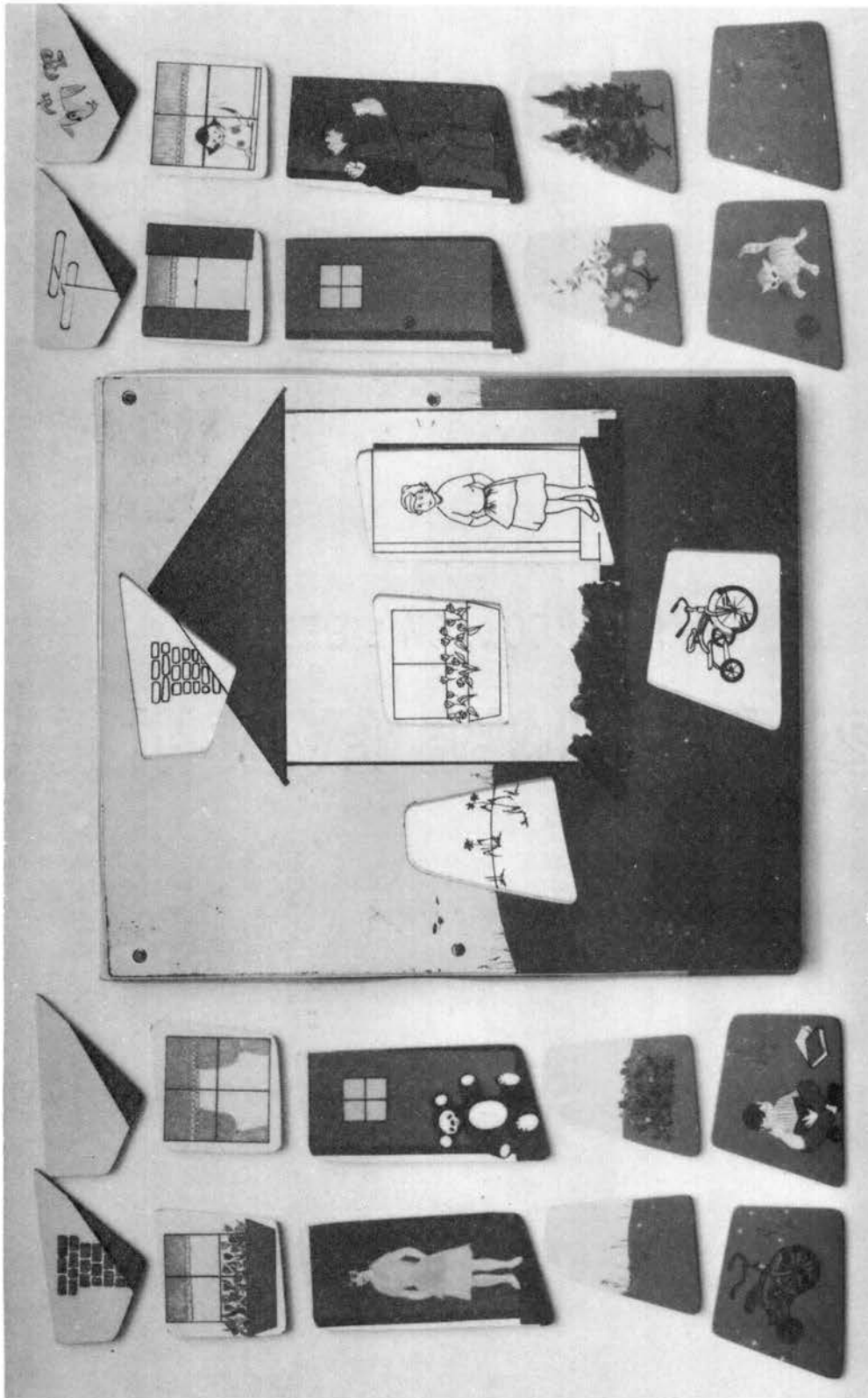


Figure 2. The House Form Board.

STARWEATHER FORM BOARDS CONFORMITY TEST
FOR PRESCHOOL CHILDREN

NAME _____	Sex _____	No. _____	Scores
BIRTHDATE _____	AGE _____		Conform: _____
Date of Test _____			Nonconf: _____
			D-Score: _____

SESSION - 1 A - B	SESSION - 2 A - B
<u>TREE</u>	<u>TREE</u>
Rabbit - Grass Squirrel - Butterfly Branch - Bees Boy - Kite Cloud - Airplane	Rabbit - Grass Squirrel - Butterfly Branch - Bees Boy - Kite Cloud - Airplane

SESSION - 1 C - D	SESSION - 2 C - D
<u>TREE</u>	<u>TREE</u>
Ball - Flowers Worm - Tree Trunk Bird Nest - Bird House Branch - Tree House Sky - Sun	Ball - Flowers Worm - Tree Trunk Bird Nest - Bird House Branch - Tree House Sky - Sun

<u>HOUSE</u>	<u>HOUSE</u>
Tricycle - Boy Mother - Teddy Bear Flower Box - Window Grass - Tulips Chimney - Roof	Tricycle - Boy Mother - Teddy Bear Flower Box - Window Grass - Tulips Chimney - Roof

<u>HOUSE</u>	<u>HOUSE</u>
Cat - Grass Door - Mailman Shutters - Dog-Window Roses - Trees TV Antenna - Birds	Cat - Grass Door - Mailman Shutters - Dog-Window Roses - Trees TV Antenna - Birds

<u>PLAYGROUND</u>	<u>PLAYGROUND</u>
Boy Wading - Ducks Sand - Dog Wagon - Baby Girl - Boy Glider - Trapeze	Boy Wading - Ducks Sand - Dog Wagon - Baby Girl - Boy Glider - Trapeze

<u>PLAYGROUND</u>	<u>PLAYGROUND</u>
Sailboat - Water Pail - Castle Ball - Grass Jungle Gym - Dog & Cat Tire Swing - Girl in Swing	Sailboat - Water Pail - Castle Ball - Grass Jungle Gym - Dog & Cat Tire Swing - Girl in Swing

<u>BARNYARD</u>	<u>BARNYARD</u>
Goat - Water Tub Cat & Kittens - Ducklings Boy - Grass Flower Pot - Fence Post Barn Door - Horse	Goat - Water Tub Cat & Kittens - Ducklings Boy - Grass Flower Pot - Fence Post Barn Door - Horse

<u>BARNYARD</u>	<u>BARNYARD</u>
Pig - Dog Hen & Chicks - Garden Tools Hay - Sheep Hat - Rooster Cow - Farmer	Pig - Dog Hen & Chicks - Garden Tools Hay - Sheep Hat - Rooster Cow - Farmer

APPENDIX C

STARKWEATHER ORIGINALITY TEST**FOR PRESCHOOL CHILDREN**

developed by
Elizabeth K. Starkweather

Oklahoma State University
Stillwater, Oklahoma

The Starkweather Originality Test is designed to measure the creative potential of preschool children. In the test, no attempt is made to differentiate among the various factors of creative ability, such as flexibility, fluency, originality, and elaboration. It is possible that all of these factors contribute to a high score on the Originality Test, and it is also possible that strength in one factor alone may be sufficient to produce a high score.

Recommended Age Range

Approximately 3 years 6 months to 6 years 6 months.

Children younger than 3 years 6 months can be given the Originality Test if their ability to communicate verbally is satisfactorily demonstrated during the pretest or warm-up session.

Older children obtain higher test scores than do younger children. When the test is administered to older children, e.g., seven-year-olds, the median score is apt to be near the ceiling of the test, with the result that the less original children are identified but the more original children are not.

The Pretest

The pretest consists of eight plastic foam pieces, two each of four different shapes. One of each shape is white and the other is pastel.

The pretest pieces are placed on a table before the child, and he is encouraged to manipulate them and talk about them. He may be asked a question such as, "Do you see a piece that looks like something?" or "Could one of them be something?" When the child responds, the experimenter agrees with his comment, whatever it is, and moves that piece to one side. He then encourages the child to talk about another piece.

If the child does not respond, the experimenter picks up the rectangular piece and asks, "What could this 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?" The experimenter then moves this piece to one side and encourages the child to talk about another piece.

During the pretest, the child is encouraged to think of different responses for the various pieces. If he gives the same response for more than one piece,

his response is accepted, but he is asked to think of something else that the piece might be. For example, if the child says that two different pieces could be a door, the experimenter accepts his response and at the same time encourages him to think of something different. "Yes, it certainly could be a door, but we already have one door. Can you think of something else that it could be?" To complete the pretest satisfactorily, the child must give at least five different responses.

The Originality Test

The test proper consists of 40 plastic foam pieces, four each of ten different shapes. The identically shaped pieces are made in four colors -- red, blue, green and yellow.

Administration. When the child has satisfactorily completed the pretest, a box containing half the test pieces is placed on the table before him. The box contains 20 pieces, two of each shape in assorted colors. The child is encouraged to take the pieces one at a time and tell what each might be. The experimenter may say, as he places the box on the table, "Now we have all these. You take one -- any one -- and tell me what it could be." The child's response is accepted, and approval is given by saying something such as, "All right" or "It certainly could be." As the child finishes with each piece, he is directed to put it into a second box (the inverted lid) which has been placed near him for that purpose.

Whether or not the child gives different responses for the various shapes, his responses are accepted and approved. The child is NOT encouraged to give different responses to pieces which are of the same shape as was done in the pretest.

Occasionally a child will take two or more pieces and construct something with them as he talks. When this happens, he is encouraged to respond to each piece separately. For example, "All right, but what could this piece be all by itself?"

When the child has completed the first box of test pieces, the box containing the remaining 20 pieces is presented to him in a similar manner.

Scoring. The test provides four opportunities for the child to respond to each shape, making a total of 40 responses. Each child's score is the number of different responses he gives, with the maximum possible score being 40. Responses are scored in the order in which they appear on the score sheet with the child's responses to the first 20 pieces (the first box) being scored before his responses to the last 20 pieces are scored. Credit is given for each response which is different from all previous responses. Credit is given for objects which might be in the same category, such as a golf ball and a baseball. Credit is not given for an object which is named a second time and altered by a minor adjective, such as a ball and a big ball. No credit is given for a play on words, such as kigless, pigless, and sigless. (See Scoring directions.)

Evaluation of the Originality Test

Inter-judge reliability in scoring was determined by a comparison of two

sets of scores. (1) The responses of individual children were scored jointly by two judges who participated in the development of the test; and (2) the same responses were scored by another person, trained in child development, but who had no experience with the test and who had no instructions other than the written directions for scoring. The coefficient of correlation (Pearson product-moment) between the two sets of judges' scores was +0.989, significant beyond the .01 level. In view of these findings, the directions for scoring were accepted as adequate. Their use should assure reliable scoring.

The internal consistency of the instrument was demonstrated by means of a split-half correlation (Spearman-Brown formula). A coefficient of +0.932 ($p < .01$) indicated that the test was reliable.

The validity of the instrument was demonstrated by comparing teachers' judgments with children's scores. Each child who scored high in originality was paired with each child who scored low, and the teachers were then asked to indicate the child who was the more original in each pair. Teachers' judgments were in the direction of the originality scores in 106 pairs out of a total of 153. A Chi-square analysis indicated this extent of agreement to be statistically significant. ($\chi^2 = 22.752$; $p < .001$).

The validity of the instrument was also demonstrated by comparing the originality scores of 13 children with their freedom of expression. The freedom scores were determined by the variety of each child's play responses when given an opportunity to play alone with a series of simple toys. A rank order correlation indicated a statistically significant agreement between these two sets of scores ($\rho = +0.687$; $p < .05$). The Originality Test was accepted as valid.

Test results indicate age differences in originality, but not sex differences. In a group of 80 children ranging in age from 3 years 6 months to 5 years 11 months, the older children earned the higher scores in originality. ($\chi^2 = 17.39$; $p < .01$).

Two forms of the Originality Test (Form-A and Form-B) have been developed for use in test-retest research. The comparability of the two forms has been demonstrated by a product-moment correlation, yielding a coefficient of +0.904 ($p < .01$). For this comparison, 18 children ranging in age from 3 years 4 months to 5 years 11 months were tested with both forms of the test.

The Originality Test requires verbal responses; nevertheless, the originality scores are independent of verbal ability. This was demonstrated by a correlation of Peabody Picture Vocabulary scores (verbal ability) and Originality Test scores. The product-moment correlation coefficients for these two sets of scores were +0.192 for Form-A and +0.162 for Form-B, neither of which was statistically significant.

DIRECTIONS FOR SCORING THE ORIGINALITY TEST

- A. Score the responses in the order in which they appear on the score sheet, first scoring columns A and B together and then scoring 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.

Ex: golf ball (+), baseball (+), moth ball (+)

2. A child may name a category and name specific objects in the category.

Ex: ball (+), rubber ball (+), baseball (+)

- 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 (-)

Ex: red ball (+), blue ball (-)

3. The child receives no credit for a play on words.

Ex: kigless (-), pigless (-), sigless (-)











- 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.

ORIGINALITY - FORM A

Oklahoma State University
E.K. Starkweather, 2-1-66DATE 7-17-70NAME Child F-1888BIRTHDATE 8-29-64SEX F No. 1888AGE 5:11

SCORE

23

	A	B	C	D
1. 	table +	table -	party table +	pickup truck +
2. 	"O" +	"O" -	can end +	telescopes +
3. 	block +	box +	block -	box -
4. 	"e" +	9 +	6 +	9 -
5. 	teeter totter +	play boat +	car +	car -
6. 	cave +	cave -	cave -	cave -
7. 	raindrop +	raindrop -	raindrop -	raindrop -
8. 	ball +	balloon +	sucker +	ball -
9. 	part of a rainbow +	eye +	part of a dress -	boat +
10. 	part of a dress +	dress -	dress -	dress -

ORIGINALITY - FORM B
 Oklahoma State University
 E.K. Starkweather, 2-1-66

DATE 7-28-70






NAME Child F-1888

BIRTHDATE 8-29-64

SEX F No. 1888

AGE 5:11

SCORE
32

	A	B	C	D
1. 	"U" +	door +	bridge -	part of an "A" +
2. 	can't think of anything -	can't think of anything -	thing you see how big they are +	thing you see how much you weigh -
3. 	opening of a cave +	cave -	bridge +	coffee table +
4. 	hair spray top +	round thing you sit on +	cookie -	loose rock that's going to fall off high cliff +
5. 	"L" +	"R" +	L-made out of cotton +	"R" -
6. 	rainbow +	part of a round pillow +	rocking bed +	"C" +
7. 	bear face +	buffalo face +	pig face +	head & a bump on top +
8. 	cut out picture +	snowman +	snowman -	part of a man +
9. 	stick +	part of a gate +	ironing board +	door +
10. 	ride at amusement park +	record player +	cookie +	half an apple +

VITA

Beverly Lane Tallent

Candidate for the Degree of

Master of Science

Thesis: CREATIVITY IN EARLY CHILDHOOD: A STUDY OF THE RELATIONSHIP
BETWEEN ORIGINALITY AND CONFORMITY-NONCONFORMITY

Major Field: Family Relations and Child Development

Biographical:

Personal Data: Born in Fort Smith, Arkansas, March 23, 1948,
the daughter of Mr. and Mrs. C. Fred Lane. Married
Richard Aron Tallent, August 25, 1968.

Education: Attended grade school in Fort Smith, Arkansas;
graduated from Northside High School, Fort Smith, Arkansas,
in May 1966. Received a Bachelor of Science degree from
the University of Arkansas, Fayetteville, Arkansas, with
a major in Home Economics Education, January, 1970.
Completed requirements for the Master of Science degree
in May, 1971.

Professional Experience: Graduate Teaching Assistant,
Department of Family Relations and Child Development,
Oklahoma State University, 1969-1971.

Professional Organizations: Phi Upsilon Omicron, Gamma Sigma
Delta, Omicron Nu, Oklahoma Association on Children Under
Six, Southern Association on Children Under Six.