CREATIVITY AS RELATED TO SOCIAL PERCEPTION,
ANXIETY, AND SELF-CONCEPT

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CREATIVITY AS RELATED TO SOCIAL PERCEPTION,
ANXIETY, AND SELF-CONCEPT

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CHAPTER I

INTRODUCTION

Not until comparatively recently does scientific literature reveal an effort on the part of psychologists to attack the phenomenon of creativity in an empirical manner. Their reluctance to attempt investigation concerning such a complex construct as creativity is understandable when the many enigmas to which such efforts may lead are realized, not the least of which is the question of a satisfactory operational definition. But the importance and necessity for understanding creativity which has emerged during the last decade has stimulated psychologists to investigate this area.

One of the most inciting spurs in this attempt was Guilford's pioneer article in 1950 (5). In this article Guilford discussed several aspects of creativity and in so doing established a basis or groundwork upon which empirical study could be made.

In its narrow sense, creativity refers to the abilities that are most characteristic of creative people. . . . Whether or not the individual who has the requisite abilities will actually produce results of a creative nature will depend upon his motivational and temperamental traits. . . .
Creative personality is then a matter of those patterns of traits that are characteristic of creative persons. A creative pattern is manifest in creative behavior, which include such activities as inventing, designing, contriving, composing, and planning (5, p. 444).

Many investigators have since appropriated Guilford's cue for a method of approach and have concentrated their efforts in an endeavor to determine in what ways more-creative people differ from less-creative people and in establishing what factors are involved in creative ability.

With the primary purpose of attempting to determine some aspects of creativity, Brittain conducted an investigation in which he compared a group of art education college students judged to be more-creative with a group of art education college students judged to be less-creative and with a group of unselected education college students, regarding their performance on a preliminary test designed to measure creativity. The test was shown to differentiate the more-creative group from the less-creative group on eight items: (1) the grouping together of household objects, (2) solving a problem, (3) assembling small designs to form a large given one, (4) selecting a paper solid from its pattern, (5) putting dissimilar words in logical relationship, (6) making letters from two given lines, (7) arranging geometric shapes according to their similarities, and (8) listing a number of ideas on a topic. The mean score of the more-creative group on these eight items was higher
than that of the less-creative, unselected, and total art education (less-creative and more-creative art education students combined) groups. The mean score of the total art education group was higher than that of the unselected group indicating, in so far as these items may be considered a measure of creativity, that those students engaged in producing art in some form have higher creative ability as a whole than do, as a whole, those students not so engaged (3).

Brittain's study was significant in that his results indicated that more-creative students could be differentiated from less-creative students, the factors involved in creativity were amenable to identification, and it substantiated the construct that creative ability was a matter of degree as opposed to an all or none proposition.

Lowenfeld and Beittel made a comparison of the criteria for creativeness found by Brittain in the arts and the criteria for creativeness found by Guilford in the sciences (14). They concluded on the basis of the similarity and close correlation between the two sets of aptitudes that creativeness in the arts and in the sciences had common attributes. As these results indicated that creativity cut across disciplines, Lowenfeld surmised that the results implied that through promoting growth in one discipline creative growth in general might be promoted, regardless
of whether it would be applied in the arts or in the sciences (13).

In reviewing discoveries which had been made regarding traits involved in creativeness, Guilford discussed several aptitudes revealed through factor-analysis to be closely correlated with creative ability (6). Among these traits was a factor formerly characterized as an ability to see problems or a generalized sensitivity to problems identified through the course of investigation as more logically belonging in the general category of evaluative abilities since the act involved an ability to evaluate whatever was under question in terms of whether or not desired goals had been reached or whether some deficiency was present (6, p. 145).

Fluency of thinking or fertility of ideas was also found to be an important aspect of creativity. Four fluency factors were identified by the Guilford studies: Word fluency, or as measured in these studies an ability to produce words each containing a specified letter or combination of letters; associational fluency, as indicated by one's ability to produce synonyms in a limited period of time; expressional fluency, as measured by a test calling for the production of phrases or sentences and involving facility for framing or structuring phrases or sentences; ideational fluency, which pertains to an ability to produce
ideas to fulfill certain requirements in a limited time such as giving various uses for some specified object, writing appropriate titles for a given story plot, or naming objects that have certain specified characteristics (6, pp. 145-147). The scanning process involved in this type of searching and testing of alternate solutions was considered to be much the same as that in other types of problem solving. It was assumed that the greater the number of possibilities elicited, the more likely the scanning process would be to arrive at suitable solutions (6, pp. 146-147).

**Flexibility of thinking** was considered to be closely related to creativeness. Two factors of flexibility were identified by the Guilford studies as important:

**Spontaneous flexibility**, or one's ability or disposition to produce a great variety of ideas with freedom from inertia or from preservation; and **adaptive flexibility**, pertaining to facility in solving problems which, while appearing to be solvable by means of more familiar or conventional methods, actually necessitate the use of more unfamiliar methods in reaching a solution (6, p. 147).

There has been a growing suspicion among those working with Guilford that what has been called originality may actually be a case of adaptive flexibility in the sense that the act involved in both originality and adaptive flexibility requires that one must get away from the obvious, the
ordinary, or the conventional in order to make a high score (6, p. 148).

Another aptitude somewhat similar to adaptive flexibility was that of redefinition which involves the ability to give up old interpretations of familiar objects in order to use them or their parts in some new way. One other aptitude which still requires some verification and analysis appeared to be closely associated with creativity. This aptitude was called elaboration. It was tested in the Guilford studies by asking the examinee to construct from the foundation of one or two simple lines a more complex object and by asking the subject to whom was given the bare outline of a plan to list all the minor steps needed to make the plan work (6, pp. 148-149).

Not all of the expectations originally hypothesized in the beginning of the Guilford studies were supported. Neither a unitary ability to analyze nor a unitary ability to synthesize in thinking were identified. Such results seem contrary to common sense as seemingly the process of thinking does involve analyzing and synthesizing. However, Guilford pointed out that the results did not refute the existence of these kinds of operations, but they did indicate that individuals do not differ systematically from one another with respect to a general ability to analyze in connection with the kinds of tasks studied nor in respect
to a general ability to synthesize. In regard to these results Guilford considered analysis and synthesis as similar to problem solving.

Factor analysis has not detected a unitary ability to solve problems. A number of unitary abilities undoubtedly play roles in solving problems, but the combinations of them and their respective weights depend upon the kind of problem. A similar conclusion may be drawn with regard to analyzing and synthesizing (6, p. 149).

Perhaps these results are not so surprising as they may have first appeared. The question of insight in learning or problem solving has for some time appeared to bare a close relationship to creativity. It would seem logical that the processes involved in insight are very similar if not the same as those involved in creativity. Both seem to represent an ability to perceive all the relationships involved; to integrate them into some meaningful substance; to analyze, synthesize, and reorganize these perceptions; and to relate them in some new way whether it be in the solution of a problem or the production of some creative activity.

Similar results to those found by Guilford were obtained in another factor-analytic study by Kettner, Guilford, and Christensin (11).

In direct contrast to the factor-analytic or trait approach and in close association with Lowenfeld's conclusions, Bellak has proposed that creativity may actually
involve a G factor, corresponding to the concept of a general factor of intelligence, with specific aptitudes which would account for the specific aspects of creativity (1). Dreydahl's results would also seem to support this concept (4).

In studying the cognitive aspects of creativity through employment of the Rorschach Test, Hersch found that artists gave reliably more movement and form dominant responses than did normals. He concluded that creators have control functions more readily available than either non-creative normals or schizophrenics (9).

Although intelligence and control functions seem to play a part in creative ability, Holland discovered a startling contrast between high school students indicating high academic achievement and those revealing creative performance. His results indicated that creative performance occurred more frequently among high school students who were independent, intellectual, expressive, asocial, consciously original, and who had high aspirations for future achievement. On the other hand, students characterized as persevering, sociable, responsible, and whose parents held somewhat authoritarian attitudes and values, were more frequently academic achievers (10). Holland suggested that these results, i.e. that creative performance was generally unrelated to scholastic achievement and
scholastic aptitude, indicated that traditional approaches to education may be stultifying rather than nurturant and fructifying (10).

In a study by Nicholson designed to determine the effects of training upon creative performance, the results indicated that training by various methods could be used to bring about a significant improvement in the production of remote or uncommon ideas (16).

In another study attempting to evaluate the effects of training upon creativity, Meadow found that the experimental group showed significant increment in quantity of ideas, quality of ideas, and in the personality variable of dominance over the control group (15).

There are those who have approached the problem of creativity from a somewhat different viewpoint. They view creativity not so much in terms of specific abilities or aptitudes but rather as a process involving the total person. This concept denotes the process of creativity as representing the reaction of the total individual to his perceptions of the environment in which he lives and any product resulting from this process as his communication to others of the reaction which he has experienced regardless of whether it is artistic, literary, or scientific in nature. Growth in creativity represents a growth in the individual's sensibilities—a growth in his power to perceive, a growth
in his awareness of himself and his environment, a growth in his ability to integrate his perceptions into some meaningful substance, a growth in his ability to react, a growth in his ability to relate his perceptions and reactions in new ways, a growth in his ability to communicate meaningfully with others, a growth in his power to adjust, and a growth in his potential to produce. Under this concept, creativity embraces not just one area of growth, but strives for the development of the total person in an attempt to enrich his whole life.

Following this concept of creativity as a process involving the total person, several investigators have attempted to study various aspects or phases of creative growth and creative expression. Russell was particularly concerned with creativity as a process of communication. In the belief that the possible contribution of art to the development of a child's ability to communicate effectively with others should not be overlooked, Russell attempted to determine the existence of a relationship between growth and development in some phase of the language process and creative expression in art. Reading vocabulary and reading comprehension tests were administered to each child as a measure of language growth. Three drawings were obtained from each child and analyzed as a measure of creative growth. By comparing performance on the reading tests with performance
in creative expression on the drawings, the following results were obtained: The use of geometric lines decreased and the use of realistic lines increased as reading ability increased; the use of rigid schema decreased and the use of flexible schema increased as the level of reading ability increased; accurate co-ordination of body parts was more apparent among superior readers than retarded readers; the use of a base line or some other method to show relationships between figures and objects was used more predominantly as the level of reading ability increased; the percentage of students representing figures and objects as having body or solidity increased as the level of reading ability increased; the percentage of children representing realistically the size of figures and objects increased with the level of reading ability; the use of color in an accurate and consistent awareness decreased as the level of reading ability decreased. Russell felt that these results indicated a definite relationship between growth in reading development and growth in creative expression (20).

After studying the art work of numerous students, Yochim found that youngsters from homes in which rigid discipline was constantly enforced had drawings which were tight, small, meticulous, and precise while children who were given opportunity to develop self-confidence and to become self-sufficient had drawings which were uninhibited.
creative, exciting, and communicated a freedom of expression (22, p. 23).

An environment which lacks harmony and appreciation is not conductive to articulate or creative expression. For a child living in fear learns little from those he fears; he creates even less. He rebels or withdraws into his own dream world. . . . The essence of art expression is the individual, the embodiment of his personality, his resourcefulness, and his emotional make-up. It stands to reason, then, that art cannot be taught en masse. Nor can it be taught under rigidly disciplined, regimented, imitative, or to conforming conditions. Excessive limitations discourage genuineness and sincerity of expression, and develop fears as well as frustrations (22, p. 19ff).

Beres suggests that creativity is much like psycho-analysis in that it is essentially a basis of communication which helps to break down the patient's resistances and prepare him for the insight and emotional experiences that lead to conviction (12).

Reid, King, and Wickwire in investigating characteristic differences between children perceived as creative and those not so perceived, found that creative children appeared to be less anxious than non-creative children. They concluded that these results supported the hypothesis that although many people possess some creativity, those who are mentally healthy are more likely to be able to give it visible expression (19).

In an investigation by Rutherford an attempt was made to identify and measure the manner of seeing, organizing,
and reacting to stimuli characteristic of creative persons. On the basis of the results, Rutherford concluded that the creative individual's approach to new situations is characterized by: The ability to differentiate various aspects of the situation and to integrate these aspects into meaningful wholes; an openness of self-system so that there is the ability to take new ideas into the system of subject-object relationships and to change old relationships when change is called for; and self-strength, so that having adequately differentiated various aspects of a new situation, these aspects may be realistically perceived and reacted to as differentially involving the self (21).

In an effort to study the relationship between creative expression and sociometric status, Housman found the following results: The sociometrically high-status children submitted a significantly greater number of drawings than did sociometrically low-status children or sociometrically average-status children; the sociometrically high-status children used more of larger sized paper while the sociometrically low-status children used more of smaller sized paper; the high-status group used a significantly greater total quantity of media than did the average-status group and the low-status group; the high-status group used greater amounts of color than did the average-status group and the low-status group. Housman suggested that these results
could indicate a relationship between the kinds of energies being exerted in contacting and maintaining contact with other children and energies being exerted in selection and use of a format for art work and a direct relationship between sociometric status and overt physical energies being expended by the child in using art materials. In terms of qualitative aspects as in comparisons of rhythm, rule, expansion, compression, simplicity, and complexity, the performance of sociometrically high-status children was closer to that of sociometrically low-status children than to sociometrically average-status children. Housman suggested that these results might be accounted for in that the high-status group was performing closer to capacity while the low-status group lacked the means or did not exert sufficient overt energies to reach its capacities. "It is as if there are some individuals at either extreme that are exceptionally sensitive. In the one case, they are reacting to stimuli constructively, and, in the other, they are reacting to their experiences by withdrawal or protest" (7, p. 147).

In studies made at the University of Texas and the University of Chicago in which a series of projective tests were administered to a number of engineers who had demonstrated outstandingly original inventiveness, Peck reported several findings. Each subject indicated a highly energetic
and distinct drive to be creative. This drive appeared to entail a desire to furnish dramatic proof of the superiority of the subject's ideas when compared with previous ones. Certain characteristic patterns were also noted in the subjects' development and background. Each subject developed a strong need to establish personal identity distinctively different from that of parents or other authority figures in reaction to feelings of unwelcome domination. Self-sufficiency and individual responsibility were developed at an early age. Ego functions were shown to be sufficiently well organized to enable the achievement of highly accurate and perceptive insights. Relentless persistence which appeared to be in the form of an autonomous, intrinsic, motivating, urge was also found to be a common factor among these engineers. The test results also indicated an overall personality system in which the boundaries between conscious and unconscious appeared to be more permeable than in most individuals (17).

Pine, in an investigation to determine relationships between creative quality of imaginative production and the expression of drive content in these productions, concluded that the creative person may be described as one with a heightened receptivity to thought contents which can be molded into a production (18).

Herbert made an investigation of creative people who became so incapacitated by mental illness that treatment in
a mental hospital was necessary. He concluded on the basis of the results that creative expression may have acted as a stabilizing force or factor in the lives of the individuals studied (8).

Purpose of Study

The purpose of this study was to investigate further the nature of the relationship between creativity and some factors previously found to be involved in creative expression and to explore the possible relationship of some other factors to creativity. Specifically, the investigation was designed to explore the nature of the relationships between creativity and social perception, anxiety and self-concept in elementary school children.

One of the factors which appears to be closely associated with growth in creative expression is a greater awareness or perception of one's environment. Perception, as investigated in most of the studies dealing with creativity, has been found to be closely correlated with creative ability. However, in most of the studies dealing with creativeness, the type of perception investigated has been directly related to the product of creativity involved. By way of illustration, if the measure of creativeness happened to be one's ability to solve a problem in new or unusual ways, then the type of perception studied has most often been that involved in perceiving the various aspects
pertaining to the problem. Although such an approach appears quite logical, it has done no more than to establish the relationship of a specific perceptual ability with a specific creative expression. If an actual relationship does exist between growth in creative expression and growth in awareness of one's environment, it would appear that the growth in perception should be a general growth in the power to perceive as Lowenfeld has suggested (12, p. 55ff.). One area of perception in which the literature reveals a lack of information regarding attempts to determine its relationship to creativeness, is that of social perception. Yet, few psychologists would deny the tremendous importance social perception plays in determining one's awareness of his environment and his reactions to his environment. In light of the therapeutic effects creative activity has been noted to have upon mental disorders, it is somewhat surprising that no more systematic investigations have been made regarding the relationship of creativity to social perception than a review of the literature would suggest.

Although theoretical declamations have been expounded regarding the relationship between the process of creativity and factors involved in mental illness, relatively few empirical studies have been made concerning the relationship between creativity and anxiety. While mild anxiety might in some cases act as a spur toward creative performance,
excessive anxiety might act as an inhibiting force to thwart creative expression.

Another area of possible investigation which has received very little attention is that of the role of self-concept in the process of creative expression. It would appear that while a certain amount of difference between one's self-concept and desired or ideal self would be necessary for incentive or motivation, that an excessive degree of difference might result in too much drain upon individual resources for effective performance.

Several hypotheses were considered at the outset of the investigation as a basis upon which the results might be evaluated. These were as follows:

1. More-creative individuals, as a group, will manifest a higher degree of accuracy in their social perceptions than will less-creative individuals, as a group.

2. There will be a positive correlation between creativeness and accuracy in social perception.

3. More-creative individuals, as a group, will manifest less anxiety than will less-creative individuals, as a group.

4. There will be a negative correlation between creativeness and anxiety.

5. More-creative individuals, as a group, will indicate less difference between their self-concept and their ideal self-concept than will less-creative individuals.
6. There will be a negative correlation between creativeness and the difference between self-concept and ideal self.
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CHAPTER II

METHODS AND PROCEDURES

Subjects

A classroom of sixth-grade elementary school children were selected as subjects for the investigation. There were twenty students in all, nine boys and eleven girls, ranging in age from eleven to twelve years old. As the nature of the study required that every child be fairly well acquainted with the other children, the tests were not administered until the last month of the fall semester of school. During the interim between the beginning of school and the testing period various creative projects and social activities were engaged in by the students, one function of which was to facilitate the getting acquainted process. Before the administration of each test, the students were assured that their answers would be held confidential and that the results would in no way affect their school grades. This was done to promote honesty in answering the test items. The students were very co-operative and participated eagerly, for the most part, they seemed to consider it a pleasant game.

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Procedure

As a means for obtaining a measure of creativity, each student was rated by his peers, his teachers, and himself on a five-point scale ranging from extremely above average to extremely below average (see Appendix). The peer ratings were mathematically averaged to obtain a peer rating for each student. This was done in order that the peer rating might receive the same relative weight in computing the composite rating as would the teacher-rating and self-rating. The mathematical averages of peer rating, the teacher rating, and self rating were then computed to provide a composite rating for each student.

To compare the performance of more-creative students with that of the less-creative students on the other test variables, the subjects were divided into groups according to their composite ratings on creativity. Group I, the more-creative group, was comprised of students whose ratings indicated them to be within the highest twenty-five per cent of the class on creativity. This group was composed of five students; three girls and two boys. Group II, the less-creative group, was composed of students whose ratings fell within the lowest twenty-five per cent of the class on creativity. This group also consisted of five students; three boys and two girls.

Two separate methods were utilized for ascertaining the degree of social perception. One method utilized sociometric
testing. Two sociometric criteria were used: (1) "With whom would you most like to spend your leisure time?" and (2) "With whom would you most like to work on a class project?" Each student was first given a sheet of paper upon which he was asked to list the names of those persons with whom he would most like to spend his leisure time. While no attempt was made to limit the number of choices, each subject was requested to restrict his choices to those students in the class. Each subject was then requested to list on a separate sheet of paper the names of those persons he felt had chosen him. The same procedure was followed for the criteria involving a class project. The differences between the number of choices perceived and the number of choices actually received for each of the criteria were then computed in order to obtain the degree of social perception for each student on each of the sociometric criteria.

The other method employed to measure social perception was through the use of the "How I Feel Toward Others Scale" (1, also see Appendix). Each subject was asked to rate his classmates on a five-point scale ranging from best friends to children the subject would not want as friends as long as they were like they were. Following the administration of the "How I Feel Toward Others Scale," each subject was provided with another copy of the scale upon which he was
instructed to rate himself according to how he felt each of the other students had rated him. By way of example, if subject "A" perceived subject "B" as having given him a rating of "1" (best friend), he would then check the rating "1" by the side of subject "B's" name. The differences between the actual ratings received and ratings perceived were then mathematically averaged for each subject as a measure of social perception.

Two tests were utilized for measuring anxiety. "The General Anxiety Scale for Children" (3, p. 92ff) and "The Test Anxiety Scale for Children" (3, p. 86ff) were administered to each subject (see Appendix).

"The Self-Concept Scale" and "The Ideal Self-Concept Scale" devised by Lipsitt were administered to each student (2). The degree of difference between self-concept and ideal self was then computed for each child in order to obtain a measure of self-acceptance (see Appendix).

Two methods were employed for investigating the relationship between creativity and social perception, anxiety, and self-concept. The composite ratings on creativity were correlated with the other test variables in order to determine the nature and degree of the relationships; and the performance of the more-creative students, Group I, was compared with that of the less-creative students, Group II, on the other test variables in order to determine whether or not the difference in performance of the groups might be significant.
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CHAPTER III

RESULTS

Ratings on Creativity

The mean composite rating on creativity for the class was 2.9 with a S.D. of .56. The mean peer rating on creativity was 2.72 with a S.D. of .59. The mean teacher rating on creativity was 2.9 with a S.D. of 1.03 while the mean self rating was 3.1 with a S.D. of .77. Table I presents the coefficients of correlation between the ratings.

TABLE I

COEFFICIENTS OF CORRELATION BETWEEN RATINGS ON CREATIVITY

<table>
<thead>
<tr>
<th>Creativity</th>
<th>Peer Ratings</th>
<th>Teacher Ratings</th>
<th>Self Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Ratings</td>
<td>.86*</td>
<td>.83*</td>
<td>.37</td>
</tr>
</tbody>
</table>

*Statistically significant at the 1 per cent level of confidence.

The composite rating on creativity and the peer rating and teacher rating were .86 and .83 respectively. The self rating showed only a coefficient of correlation of .37 with the composite rating. The coefficient of correlation between
peer ratings and teacher ratings was .87 indicating fairly close agreement. The coefficient of correlation between peer ratings and self ratings was -.06, however, which would seem to indicate almost no relationship between these two ratings as did the coefficient of correlation of .11 between teacher ratings and self ratings. It would appear that the factors influencing the self ratings were different from those influencing the peer ratings and teacher ratings.

Table II compares Groups I and II on mean composite ratings of creativity. The more-creative group received a mean composite rating on creativity of 2.18 with a S.D. of .15.

**TABLE II**

<table>
<thead>
<tr>
<th>Creativity</th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Composite Rating</td>
<td>2.18*</td>
<td>3.63*</td>
</tr>
</tbody>
</table>

*Statistically significant at the .01 percent level of confidence.

Group II, the less-creative group, received a mean composite rating of 3.63 with a S.D. of .30.

**Social Perception**

On the sociometric criteria involving leisure time the mean number of choices received was 5.1 with a S.D. of 2.58.
The mean number of choices perceived was 3.65 with a S.D. of 1.61. When the difference between actual choices received and the number perceived was computed, the mean for the class was 2.65 with a S.D. of 1.92.

In comparing Groups I and II on the difference between choices received and perceived on the criteria of leisure time, Group I received a mean of 2.4 with a S.D. of 1.22 (see Table IV, Appendix). Group II obtained a mean difference of 1.6 with a S.D. of .8 (see Table IV, Appendix). The standard error of the difference between means was .54 with a critical ratio of 1.48. The mean number of choices received by Group I was 6 with a S.D. of 2.76, while the mean number of choices received by Group II was 3.4 with a S.D. of 1.85. The standard error of the difference between means was 1.53 with a critical ratio of 1.70. The mean number of choices perceived by Group I was 4.8 with a S.D. of .98, while the mean number of choices perceived by Group II was 3 with a S.D. of 1.48. The standard error of the difference between means was .79 with a critical ratio of 2.28.

The coefficient of correlation between composite ratings on creativity and the difference between choices received and perceived on the sociometric criteria of leisure time was −.15 (see Table III, Appendix). The coefficient of correlation between composite creativity ratings
and choices received on the criteria of leisure time was .44. The coefficient of correlation between composite ratings on creativity and choices perceived on the criteria of leisure time was -.41. The coefficient of correlation between composite ratings on creativity and number of choices made on leisure time was -.15.

On the sociometric criteria involving class project the mean number of choices received was 5.35 with a S.D. of 3.42. The mean number of choices perceived was 3.05 with a S.D. of 1.96. The mean difference between choices received and perceived was 3.2 with a S.D. of 3. The coefficient of correlation between composite ratings on creativity and the difference between number of choices received and perceived on the sociometric criteria involving class project was -.34 indicating a low negative correlation between creativity and social perception (see Table III). The coefficient of correlation between composite ratings on creativity and choices received was .56. The coefficient of correlation between composite ratings on creativity and number of choices perceived was -.40. The coefficient of correlation between composite ratings on creativity and number of choices made on the sociometric criteria class project was -.07.

In comparing Groups I and II on the sociometric criteria of class project, the mean difference between the number of choices actually received and those perceived by Group I was 4 with a S.D. of 1.67 (see Table IV, Appendix). The mean
difference between number of choices received and perceived by Group II was 1 with a S.D. of 1.1 (see Table IV, Appendix). The standard error of the difference between means was .90. The critical ratio was 3.33 which was statistically significant at the 1 per cent level of confidence. These results would indicate that the more creative group manifested a significantly lower degree of accuracy in perceiving sociometric choices involving the self than the less creative group.

On the "How I Feel Toward Others Scale," the mean rating received for the class as a whole was 2.51 with a S.D. of .39 while the mean rating perceived was 2.86 with a S.D. of .57. The mean difference between ratings received and perceived was .96 with a S.D. of .34. The coefficient of correlation between composite ratings on creativity and accuracy of perception on the "How I Feel Toward Others Scale" was .53, statistically significant at the 5 per cent level of confidence (see Table III, Appendix). The coefficient of correlation between composite ratings on creativity and ratings received on the "How I Feel Toward Others Scale" was .37, while the coefficient of correlation between composite ratings on creativity and perceived ratings on the "How I Feel Toward Others Scale" was .60.

When the more creative group was compared with the less creative group on the criteria of accuracy of perception,
i.e. the difference between ratings received and perceived on the "How I Feel Toward Others Scale," Group I obtained a mean difference of .74 with a S.D. of .21 while Group II obtained a mean difference of 1.19 with a S.D. of .36 (see Table IV, Appendix). The standard error of the difference between means was .16, and the critical ratio was 2.81 indicating statistical significance at the 1 per cent level of confidence. These results suggest a significant difference between the ability of more creative children and less creative children to perceive accurately. The mean rating received by Group I on the "How I Feel Toward Others Scale" was 2.37 with a S.D. of .46 while the mean rating received by Group II was 2.79 with a S.D. of .32. The standard error of the difference was .25, and the critical ratio was 2.08 indicating statistical significance at the 5 per cent level of confidence. The mean rating perceived by Group II was 3.22 with a S.D. of .67. The standard error of the difference was .33, and the critical ratio was 12.52 indicating statistical significance at the 1 per cent level of confidence.

Anxiety

The mean score for the class as a whole on general anxiety was 24.05 with a S.D. of 10.43. The coefficient of correlation between composite ratings on creativity and scores on "The General Anxiety Scale for Children" was .06
indicating little or no relationship between ratings on creativity and general anxiety (see Table III, Appendix).

In comparing groups I and II in reference to scores on "The General Anxiety Scale for Children," the more creative group received a mean score of 22.4 with a S.D. of 5.69 while the less creative group received a mean score of 19 with a S.D. of 2.77 (see Table IV, Appendix). The standard error of the difference was 6.33, and the critical ratio was .53.

On "The Test Anxiety Scale for Children" the class as a whole received a mean score of 13.65 with a S.D. of 6.83. The coefficient of correlation between composite ratings on creativity and scores on "The Test Anxiety Scale for Children" was .06 indicating little or no relationship (see Table III, Appendix). In comparing the scores of Group I and II on test anxiety, Group I received a mean score of 10.6 with a S.D. of 5.69 while Group II received a mean score of 11.6 with a S.D. of 4.36 (see Table IV, Appendix). The standard error of the difference was 3.19 with a critical ratio of .31.

**Self-Concept**

The mean score obtained by the class on the "Self-Concept Scale" was 80.05 with a S.D. of 8.74. The mean score obtained on the "Ideal Self-Concept Scale" was 97.7 with a S.D. of 5.12. The mean score for self acceptance
or difference between self-concept and ideal self-concept was 17.8 with a S.D. of 6.64. The coefficient of correlation between composite ratings on creativity and scores obtaining on self-concept was .26 (see Table III, Appendix). The coefficient of correlation between composite ratings on creativity and ideal self was .27 (see Table III, Appendix). The coefficient of correlation between composite ratings on creativity and self-acceptance was -.21 (see Table III, Appendix).

When Groups I and II were compared, Group I obtained a mean score of 80.4 with a S.D. of 7.48 on the "Self-Concept Scale" while Group II obtained a mean score of 84.6 with a S.D. of 10.66 (see Table IV, Appendix). The standard error of the difference was 13.02 and the critical ratio was .32. On the "Ideal Self-Concept Scale" Group I received a mean score of 98 with a S.D. of 2.10, and Group II obtained a mean score of 100.4 with a S.D. of 5.54 (see Table IV, Appendix). The standard error of the difference was 2.64, and the critical ratio was .91. On self-acceptance, or the difference between self-concept and ideal-self, Group I obtained a difference of 19.2 with a S.D. of 5.15, and Group II obtained a mean difference of 15.4 with a S.D. of 8.10 (see Table IV, Appendix). The standard error of the difference was 4.29, and the critical ratio was .89.
CHAPTER IV

DISCUSSION AND CONCLUSIONS

In order to simplify discussion of the results, the results will be analyzed in the presentation order of the hypothesis set up at the outset of the study.

1. More-creative individuals, as a group, will manifest a higher degree of accuracy in their social perceptions than will less-creative individuals as a group.

On first glance it would appear that the results indicate conflicting conclusions regarding this hypothesis. The difference between Group I's mean score of 4 and Group II's mean score of 1, statistically significant at the 1 per cent level of confidence, on accuracy of perception on the sociometric criteria of class project and the difference, although not statistically significant, between Group I's mean of 2.4 and Group II's mean of 1.6 on the sociometric criteria involving leisure time would seemingly indicate that more-creative individuals as a group are less accurate in their ability to make social perceptions than are less-creative individuals as a whole. In direct contrast, the difference between Group I's mean of .74 and Group II's mean of 1.19, statistically significant at the
1 per cent level of confidence, on the accuracy of perception on the "How I Feel Toward Others Scale" would appear to indicate that more-creative individuals, as a whole, are more accurate in their social perceptions than are less-creative individuals as a whole. More careful analysis, however, reveals not only a difference in the type of tests employed but also a difference in the type of information utilized. In obtaining a measure of accuracy of perception on the sociometric criteria, the difference between the number of choices actually received and the number of choices perceived by the subject was computed and utilized as a measure of accuracy of perception. Whether or not individuals which the subject perceived as having been chosen by were the same individuals which actually chose the subject, was not taken into consideration. Emphasis was placed only upon the subject's accuracy in perceiving numerically his relative sociometric status in the group. The approach employed with the information gained from the "How I Feel Toward Others Scale" was more individually oriented and involved more directly what might be considered socio-empathy. Each subject was requested to rate himself in accordance with the rating he felt each individual in the group had given him. The difference between the subject's actual rating and perceived rating for each individual was computed and then mathematically averaged to
provide a mean score for accuracy of perception for each subject. Thus, the accuracy of perception involving sociometric criteria was based primarily upon the subject's ability to perceive accurately his relative numerical sociometric status in the group, while the accuracy of perception involved in the "How I Feel Toward Others Scale" was primarily based upon the subject's ability to make accurate socio-empathetic perceptions. On the basis of these results, it might be concluded that more-creative individuals, as a group, manifest a higher degree of accuracy in social perception when these perceptions are of a socio-empathetic nature than do less-creative individuals, as a whole. On the other hand, less-creative individuals, as a group, manifest a higher degree of accuracy in perceiving relative numerical sociometric status in a group than do more-creative individuals, as a whole.

2. There will be a positive correlation between creativeness and accuracy in social perception.

As in the comparison of the more-creative group with the less-creative group on accuracy of social perception, contrasting results were also obtained when creativity was correlated with the various measures of social perception. Low negative coefficients of correlation were found between the composite ratings on creativity and both of the sociometric criteria. The coefficient of correlation between
composite ratings on creativity and accuracy of perception on the sociometric criteria of leisure time was -.15 while the coefficient of correlation between composite ratings on creativity and accuracy of perception on the sociometric criteria involving class project was -.34. On the other hand, a positive coefficient of correlation of .53, statistically significant at the 5 per cent level of confidence, was found between composite ratings on creativity and accuracy of perception on the "How I Feel Toward Others Scale." It would seem apparent that these results are a reflection of the same factors which affected the results for the first hypothesis. While the results indicate that creativity does appear to bear some relationship to accuracy in social perceptions of a socio-empathetic nature, the results also indicate that creativity bears a low negative relationship to accuracy in perceiving relative numerical sociometric status in a group.

3. More-creative individuals, as a group, will manifest less anxiety than will less-creative individuals, as a group.

Although the mean score for Group I of 10.6 was lower than that for Group II which was 11.6 on "The Test Anxiety Scale for Children," the difference was not enough to be statistically significant. The situation was reversed on "The General Anxiety Scale for Children" in that Group I's
mean score of 22.4 was higher than Group II's mean score of 19. However, the difference was not great enough to be statistically significant. It would appear from the results obtained in this study that very little difference exists between more-creative individuals and less-creative individuals regarding general and test anxiety. These results do not support the results obtained in an investigation by Reid, King and Wickwire in which creative children appeared to be less anxious than non-creative children (2). The results of this study would seem to follow more closely the results and conclusions reached in an investigation by Herbert of creative people who became incapacitated by mental illness to the point that hospitalization was necessary (1). While Herbert concluded that creative expression may have acted as a stabilizing force or factor in the lives of the individuals under investigation, anxiety was found to be no less prevalent in the creative patients, as a group, than in the rest of the mental hospital population.

4. There will be a negative correlation between creativity and anxiety.

The coefficient of correlation between the composite ratings on creativity and the scores on "The General Anxiety Scale for Children" and "The Test Anxiety Scale for Children" were both .06. While these results show a slight negative correlation between creativity and anxiety, the correlations
are so low as to indicate almost no relationship between creativity and anxiety. If any conclusion may be drawn from the data obtained in this study regarding the relationship between creativity and anxiety, it must be that creative ability provides little, if any, immunity from anxiety. These results do not refute Reid, King, and Wickwire's conclusion that although many people possess some creative ability, those who are mentally healthy are more likely to be able to give it visible expression (2), nor Herbert's conclusion that creative expression may act as a stabilizing force (1); but they do indicate that there is no statistically significant distinguishable difference in the amount of anxiety manifested by creative individuals and those not so creatively endowed. It would appear, therefore, that if the factors involved in creative expression are in some way related to excessive anxiety, the relationship must be sought in regard to the possible outlet creative expression might provide, the control functions which creative activity might help to stimulate, or some other factor or factors involved than simply that of the amount of anxiety manifested.

5. More-creative individuals, as a group, will indicate less difference between their self-concept and ideal self-concept than will less-creative individuals, as a group.
The mean score for Group I on self-acceptance, or the difference between self-concept and ideal self-concept, was 19.2 while the mean score for Group II was 15.4. Although the difference was not enough to be statistically significant, these results would indicate less self-acceptance among the more-creative group than among the less-creative group, as a whole. On the basis of these results, therefore, the hypothesis that more-creative individuals will indicate a greater degree of self-acceptance than will less-creative individuals, must be rejected. The rejection of this hypothesis immediately suggests an area for further investigation concerning the influence a greater degree of difference between self-concept and ideal self-concept might have upon drive and motivational factors in creative activity.

6. There will be a negative correlation between creativity and the difference between self-concept and ideal self-concept.

The coefficient of correlation between composite ratings on creativity and difference between self-concept and ideal self-concept was \(-.21\) indicating a slight tendency on the part of the more-creative subjects to be less self-accepting than the less-creative students. The coefficient of correlation between composite ratings on creativity and self-concept was \(.26\) indicating a low
negative relationship between creativity and self-concept. A low negative relationship was also found between creativity and ideal self-concept (see Table III, Appendix). On the basis of these results this hypothesis was rejected.
CHAPTER BIBLIOGRAPHY


CHAPTER V

SUMMARY

A review of the literature revealed a deficiency of knowledge regarding the relationship of certain factors to creativity. Some of these factors were social perception, anxiety, and self-concept. Six hypotheses were set up at the beginning of the investigation as a basis for evaluating the results. These were:

1. More-creative individuals, as a whole, will manifest a higher degree of accuracy in their social perceptions than will less-creative individuals, as a group.

2. There will be a positive correlation between creativeness and accuracy in social perception.

3. More-creative individuals, as a group, will manifest less anxiety than will less-creative individuals, as a group.

4. There will be a negative correlation between creativity and anxiety.

5. More-creative individuals, as a whole, will indicate less difference between self-concept and ideal self-concept than will less-creative individuals, as a group.
6. There will be a negative correlation between creativity and the difference between self-concept and ideal self-concept.

The subjects were twenty students, eleven girls and nine boys, in a sixth-grade elementary school class. Each subject was rated by his teacher, his peers and himself on a five-point scale for creativity ranging from extremely above average to extremely below average. The peer rating, teacher rating, and self-rating were mathematically averaged to provide a composite rating on creativity for each subject.

Accuracy of social perception was measured through the utilization of sociometric criteria involving leisure time and a class project. Accuracy of social perception was also obtained through the use of the "How I Feel Toward Others Scale."

"The General Anxiety Scale for Children" and "The Test Anxiety Scale for Children" was administered to each subject as a means for obtaining a measure of anxiety.

The "Self-Concept Scale" and the "Ideal Self-Concept Scale" were administered to each subject. The difference between self-concept and ideal self-concept was computed as a measure of self-acceptance for each subject.

Two methods were utilized for investigating the relationship between creativity and the variables social perception,
anxiety, and self-concept. Method I consisted of determining the coefficients of correlation between creativity and the variables under investigation. Method II consisted of comparing a group of more-creative students with a group of less-creative students regarding the variables under investigation.

The results seemed to indicate an apparent contradiction regarding hypothesis 1 and 2. After careful analysis, however, it was concluded that more-creative individuals are likely to show a higher degree of accuracy in social perception when the perception is of a socio-empathetic nature while less-creative individuals are likely to show a higher degree of accuracy in social perception when the perception involves ascertaining relative sociometric status within a group structure.

The results regarding hypothesis 3 and 4 indicated little, if any, relationship between creativity and degree of anxiety manifested.

Hypothesis 5 and 6 were both rejected on the basis that the results seemed to indicate a tendency on the part of more-creative individuals to be slightly less self-accepting than less-creative individuals.
APPENDIX

RATING SCALE FOR CREATIVITY

Directions

On this scale you are to rate your classmates and yourself on creativity. In order to make sure that we are thinking about the same thing when we use the word creativity, the following paragraph tells some things about creative people which you may use as a guide.

Creative people. People who are creative are flexible and can usually change and adapt to new problems and new situations easily. They can give up old interpretations of familiar objects in order to use them in new and different ways. They can think of new ideas easily. They usually think of a greater variety of ideas and better ideas than less creative people. They are original in that they think of new ways to do things rather than just copying what someone else has done. They are able to see similarities and differences between various objects and things. They are sensitive to problems and can evaluate their own work and that of others. They are not afraid to stand up for what they believe and can go ahead with their plans even in the face of opposition. They try to fit information or objects into some organized whole so that it is meaningful.
As you rate your classmates compare them with the other children in your room and with other boys and girls your same age. If you think the person you are rating is extremely above average, circle the (1) by his name. If you think he is above average, circle the (2) by his name. If you think he is average, circle the (3) by his name. If you think he is below average, circle the number (4). If you think he is extremely below average, circle the number (5) by his name.

No one else will be allowed to see your paper. Try to be as honest as you can.
### RATING SCALE FOR CREATIVITY

**Answer Sheet**

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<th>Above Average</th>
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</table>
HOW I FEEL TOWARD OTHERS SCALE

Directions

The teacher and the pupils should read this scale together.

To the pupils:

You have all taken a lot of tests in arithmetic, reading, and other subjects. You have been asked to take those tests so your teachers would know better how to help you in your studies. Now you are asked to tell how you feel toward other children in your room. This is not a test like the others you have taken. There are no right or wrong answers. All you need to do is to tell how you feel toward other children in your room. By doing this you will help the teacher know which other children you get along with best.

No child will be allowed to see another child's paper.

Directions: On another sheet of paper you have the names of all the children in your room. As soon as we finish reading the directions you will be asked to place a number to the left of each of these names, including your own. The numbers which you will use are the numbers of the paragraphs listed below.

Do not put any numbers now. Please put your pencils down until you are told by your teacher to begin.
We must first read all the directions together, so you will be sure to know how to mark your list of names.

Number 1 is for: My Best Friends. How can we tell our best friends from just ordinary friends? Below you will find listed some things which are generally true of our best friends. Put a 1 to the left of the names of those children who are best friends.

A. You play with your best friends a lot and have fun with them.
B. You treat them nice, help them whenever you can, share your things with them.
C. You go places with them and talk with them a lot.
D. You go to their homes and they come to your home quite often.

Number 2 is for: My Other Friends. Besides our best friends all of us have other friends whom we like fairly well. Put a 2 to the left of the names of those children you like fairly well.

A. You play with them sometimes, but you do not always have fun with them.
B. You are nice to them most of the time, but you seldom share your things with them.
C. Sometimes you go places with them, and talk with them, but not very often.
D. You seldom go to their homes, and they seldom come to your home.
Number 3 is for: **Children I don't know.** There may be some children on your list whom you don't know well enough to know whether you like them or not. It may be that you have not been with them enough to tell much about them. You don't know how you really feel about these children. Put a 3 to the left of the names of these children whom you don't know well enough to rate.

Number 4 is for: **Children I know but who are not my friends.** All of us know some persons quite well but we do not consider them to be our friends. Put a 4 to the left of the names of those children you do not consider as your friends.

A. You seldom play with them.

B. You do not get along very well with them when you are around them.

C. You do not talk to them or go places with them unless it is necessary to be polite.

D. You do not like some of the things they do, and the way they act at times.

Number 5 is for: **Children I do not want to have as friends** as long as they are like they are now. Nearly all of us find there are a few persons we cannot get along with. These people may be all right in some ways, and may be regarded as good friends by others, but not by us.

A. You avoid playing with them, and you never choose them as partners for a game.
B. Sometimes you fuss, quarrel, and fight with them when you are around them.

C. You never go places with them and you never talk with them unless you have to.

D. You dislike very much some of the things they do, and the way they act at times.

Now let us go over the main headings.

What is number 1 for? (Student response)
What is number 2 for? (Student response)
What is number 3 for? (Student response)
What is number 4 for? (Student response)
What is number 5 for? (Student response)

You do not have to use all these numbers. You may use any of these as many times as you wish. All you need to do is show how you feel about each person on your list by putting one of the above numbers to the left of his name.

Be sure to put a number to the left of every name.

Do not leave out anyone.

Has everyone found his own name? If your name is not on the list tell the teacher so she can have all the children add your name to their lists. As soon as you have found your name or have written it in, put a 6 to the left of it.

If you have any questions, please ask them now.

When you have finished marking your list, turn your
paper down on your desk and leave it there until the teacher takes it up.

Go ahead now and place the other numbers (1-2-3-4-5) to the left of the rest of the names on your list.
## HOW I FEEL TOWARD OTHERS SCALE

### Answer Sheet

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<tr>
<th>Name</th>
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<tbody>
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<td>Subject T</td>
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THE GENERAL ANXIETY SCALE FOR CHILDREN

Directions*

I'm going to be asking you some questions—questions different from the usual school questions for these are about how you feel and so have no right or wrong answers. First I'll hand out the answer sheets and then I'll tell you more about the questions...

Write your name at the top of the first page, both your first and last names... Also write B if you're a boy or G if you're a girl.

As I said before, I am going to ask you some questions. No one but myself will see your answers to these questions, not your teacher or your principal or your parents. These questions are different from other questions that you are asked in school. These questions are different because there are no right or wrong answers. You are to listen to each question and then put a circle around either "yes" or "no." These questions are about how you think and feel and, therefore, they have no right or wrong answers. People think and feel differently. The person sitting next to you might put a circle around "yes" and you may put a circle around "no." For example, if I asked you this question: "Do you like to play ball?" some of you would put a circle
around "yes" and some of you would put it around "no." Your answer depends on how you think and feel. These questions are about how you think and feel about school, and about a lot of other things. Remember, listen carefully to each question and answer it "yes" or "no" by deciding how you feel and think. If you don't understand a question, ask me about it.

Now let's start by everybody putting their finger on Number 1. Here is the first question. Number 1. "When you are away from home, do you worry about what might be happening at home?"

*Read by examiner.
THE GENERAL ANXIETY SCALE FOR CHILDREN*

1. When you are away from home, do you worry about what might be happening at home?
2. Do you sometimes worry about whether
   (other children are better looking than you are?)
   (your body is growing the way it should?)
3. Are you afraid of mice or rats?
4. Do you ever worry about knowing your lessons?
5. If you were to climb a ladder, would you worry about falling off it?
6. Do you worry about whether your mother is going to get sick?
7. Do you get scared when you have to walk home alone at night?
8. Do you ever worry about what other people think of you?
9. Do you get a funny feeling when you see blood?
10. When your father is away from home, do you worry about whether he is going to come back?
11. Are you frightened by lightning and thunderstorms?

* Read by Examiner.
** The L items comprise a lie scale.
L 12. Do you ever worry that you won't be able to do something you want to do?

13. When you go to the dentist, do you worry that he may hurt you?

14. Are you afraid of things like snakes?

15. When you are in bed at night trying to go to sleep, do you often find that you are worrying about something?

L 16. When you were younger, were you ever scared of anything?

17. Are you sometimes frightened when looking down from a high place?

18. Do you get worried when you have to go to the doctor's office?

19. Do some of the stories on radio or television scare you?

L 20. Have you ever been afraid of getting hurt?

21. When you are home alone and someone knocks on the door, do you get a worried feeling?

22. Do you get a scary feeling when you see a dead animal?

23. Do you think you worry more than other boys and girls?

24. Do you worry that you might get hurt in some accident?

L 25. Has anyone ever been able to scare you?

26. Are you afraid of things like guns?

27. Without knowing why, do you sometimes get a funny feeling in your stomach?
28. Are you afraid of being bitten or hurt by a dog?

L 29. Do you ever worry about something bad happening to someone you know?

30. Do you worry when you are home alone at night?

31. Are you afraid of being too near fireworks because of their exploding?

32. Do you worry that you are going to get sick?

L 33. Are you ever unhappy?

34. When your mother is away from home, do you worry about whether she is going to come back?

35. Are you afraid to dive into the water because you might get hurt?

36. Do you get a funny feeling when you touch something that has a real sharp edge?

L 37. Do you ever worry about what is going to happen?

38. Do you get scared when you have to go into a dark room?

39. Do you dislike getting in fights because you worry about getting hurt in them?

40. Do you worry about whether your father is going to get sick?

L 41. Have you ever had a scary dream?

42. Are you afraid of spiders?

43. Do you sometimes get the feeling that something bad is going to happen to you?
44. When you are alone in a room and you hear a strange noise, do you get a frightened feeling?

45. Do you ever worry?
THE GENERAL ANXIETY SCALE FOR CHILDREN

Answer Sheet

<table>
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<tr>
<td>22.</td>
<td>45.</td>
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<tr>
<td>23.</td>
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THE TEST ANXIETY SCALE FOR CHILDREN

Directions*

I'm going to be asking you some questions—questions different from the usual school questions for these are about how you feel and so have no right or wrong answers. First I'll hand out the answer sheets and then I'll tell you more about the questions....

Write your name at the top of the first page, both your first and last names....Also write B if you're a boy and G if you're a girl.

As I said before, I am going to ask you some questions. No one but myself will see your answers to these questions, not your teacher or your principal or your parents. These questions are different from other questions that you are asked in school. These questions are different because there are no right or wrong answers. You are to listen to each question and then put a circle around either "yes" or "no." These questions are about how you think and feel and, therefore, they have no right or wrong answers. People think and feel differently. The person sitting next to you might put a circle around "yes" and you may put a circle around "no." For example, if I asked you this question:

*Read by examiner
"Do you like to play ball?" some of you would put a circle around "yes" and some of you would put it around "no."
Your answer depends on how you think and feel. These questions are about how you think and feel about school, and about a lot of other things. Remember, listen carefully to each question and answer it "yes" or "no" by deciding how you think and feel. If you don't understand a question, ask me about it.

Now let's start by everybody putting his finger on Number 1. Here is the first question. Number 1. "Do you worry when the teacher says that she is going to ask you questions to find out how much you know?"
THE TEST ANXIETY SCALE FOR CHILDREN*

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know?

2. Do you worry about being promoted, that is passing from the _____ to the _____ grade at the end of the year?

3. When the teacher asks you to get up in front of the class and read aloud, are you afraid that you are going to make some bad mistakes?

4. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, do you hope that she will call upon someone else and not you?

5. Do you sometimes dream at night that you are in school and cannot answer the teacher's questions?

6. When the teacher says that she is going to find out how much you have learned, does your heart begin to beat faster?

7. When the teacher is teaching you about arithmetic, do you feel that other children in the class understand her better than you?

8. When you are in bed at night, do you sometimes worry about how you are going to do in class the next day?

*Read by examiner.
9. When the teacher asks you to write on the blackboard in front of the class, does the hand you write with sometimes shake a little?

10. When the teacher is teaching you about reading, do you feel that other children in the class understand her better than you do?

11. Do you think you worry more about school than other children?

12. When you are at home and you are thinking about your arithmetic lesson for the next day, do you become afraid that you will get the answers wrong when the teacher calls upon you?

13. If you are sick and miss school, do you worry that you will do more poorly in your schoolwork than other children when you return to school?

14. Do you sometimes dream at night that other boys and girls in your class can do things you cannot do?

15. When you are home and you are thinking about your reading lesson for the next day, do you worry that you will do poorly on the lesson?

16. When the teacher says that she is going to find out how much you have learned, do you get a funny feeling in your stomach?

17. If you did very poorly when the teacher called on you, would you probably feel like crying even though you would try not to cry?
18. Do you sometimes dream at night that the teacher is angry because you do not know your lessons?

The examiner makes the following statement before continuing:

In the following questions the word "test" is used.

What I mean by "test" is any time the teacher asks you to do something to find out how much you know or how much you have learned. It could be by your writing on paper, or by your speaking aloud, or by your writing on the blackboard. Do you understand what I mean by "test"—it is anytime the teacher asks you to do something to find out how much you know.

19. Are you afraid of school tests?
20. Do you worry a lot before you take a test?
21. Do you worry a lot while you are taking a test?
22. After you have taken a test do you worry about how well you did on the test?
23. Do you sometimes dream at night that you did poorly on a test you had in school that day?
24. When you are taking a test, does the hand you write with shake a little?
25. When the teacher says that she is going to give the class a test, do you become afraid that you will do poorly?
26. When you are taking a hard test, do you forget some things you knew very well before you started taking the tests?
27. Do you wish a lot of times that you didn't worry so much about tests?

28. When the teacher says that she is going to give the class a test, do you get nervous or funny feelings?

29. While you are taking a test do you usually think you are doing poorly?

30. While you are on your way to school, do you sometimes worry that the teacher may give the class a test?
THE TEST ANXIETY SCALE FOR CHILDREN

Answer Sheet

<p>| Name | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. | 23. | 24. | 25. | 26. | 27. | 28. | 29. | 30. |</p>
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<th>Item</th>
<th>Not at all</th>
<th>Not very often</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
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</thead>
<tbody>
<tr>
<td>1. I am friendly</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>2. I am happy</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>3. I am kind</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>4. I am brave</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>5. I am honest</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>6. I am likeable</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>7. I am trusted</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>8. I am good</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>9. I am proud</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>10. I am lazy</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>11. I am loyal</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>12. I am co-operative</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>13. I am cheerful</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>14. I am thoughtful</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>15. I am popular</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>16. I am courteous</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>17. I am jealous</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>18. I am obedient</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>19. I am polite</td>
<td>(1)</td>
<td>(2)</td>
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<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>20. I am bashful</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
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<tr>
<td>21. I am clean</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>22. I am helpful</td>
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# Ideal Self-Concept Scale

Name ________________________________

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<th>Some of the time</th>
<th>Most of the time</th>
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<td>1. I would like to be friendly</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
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<td>(1)</td>
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<td>(5)</td>
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<td>(3)</td>
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</tr>
<tr>
<td>5. I would like to be honest</td>
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### TABLE III

COEFFICIENTS OF CORRELATION BETWEEN CREATIVITY AND SOCIAL PERCEPTION, ANXIETY, AND SELF-CONCEPT

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<th>Factors</th>
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<td>Accuracy of Perception on the &quot;How I Feel Toward Others Scale&quot;</td>
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<td>Self-Concept</td>
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<td>Self-Acceptance</td>
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*Statistically significant at the 5 per cent level of confidence.*
### TABLE IV
COMPARISON OF GROUP I AND GROUP II ON SOCIAL PERCEPTION, ANXIETY, AND SELF-CONCEPT

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<tr>
<th>Factors</th>
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<td>Accuracy of Perception on the &quot;How I Feel Toward Others Scale&quot;</td>
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<tr>
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*Statistically significant at the 1 per cent level of confidence.
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Books


Articles


Herbert, Philip S., "Creativity and Mental Illness: (A Study of 60 Creative Patients Who Needed Hospitalization)," *Psychiatric Quarterly*, XXXIII (1959), 534-547.


