A COMPARISON OF TWO SOCIOMETRIC TESTS DESIGNED TO MEASURE THE SOCIAL VALUE OF INDIVIDUALS IN GROUPS OF PRESCHOOL CHILDREN

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CHAPTER I

INTRODUCTION

Purpose

This study was undertaken to develop a sociometric test based on the assumption that an individual wants to be near someone who has social value for him and to compare this test with another based on the assumption that an individual wants to benefit someone who has social value for him. A comparison was needed to determine whether one test alone, or both tests must be used to provide an adequate picture of the social value of individuals in a group.

The Concept of Social Value

Sociometric status is the usual term for describing the position of individuals in a group as indicated by sociometric tests. Sociometric status may be equated with popularity in the sense that it describes the individual's desirability as an associate for group activities. This concept of sociometric status becomes inadequate when another aspect of group interaction is considered, i.e., the individual's desire to benefit certain group members as well as to associate with certain group members. A concept which includes both aspects is that of the social value of the individual, introduced by Northway (1952):

> Unable to assimilate the total environment, the organism absorbs those aspects of it which are most appropriate

> to it; those which satisfy its needs and enhance its organization. The reason for the selection is not in the selected but in the selector. Sociometry therefore measures (discovers) what needs an individual has for personal social companionship.
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> . . . . . .
>
> Anyone who fulfills a need or enriches the experience of another individual on any basis whatsoever possesses social value and forms a part of the structure that becomes in its totality the great society. (Northway, 1952, pp. 40-41).

Social value, then, as a term for describing the individual's position in the group, is an expansion of the concept of sociometric status or popularity. There are two aspects of social value: (1) an individual's desirability as an associate, and (2) an individual's disposition for evoking altruistic responses in others. The subject of a sociometric test will choose to be near or to benefit individual group members because they have social value for him, that is, fulfill some need or enrich the experience of the subject. The number of times an individual group member is chosen is an indication of the number of people whose needs he fulfills or whose experiences he enriches.

The concept of social value in this paper is carried a step further than Northway originally conceived it. Not only can sociometric tests discover what needs an individual has for personal social companionship, but they can also discover his more altruistic needs. Sociometric tests may be constructed in which subjects make their choices on the basis of either desiring to associate with individual group members or on the basis of desiring to benefit group members in some way. Both types may be measuring social value.

Problem

The interpersonal relationships within groups have been the concern of educators, psychologists, group leaders, and others, for many years.

This is evidenced by the number of disciplines which have made use of sociometric techniques for research purposes and the various groups, from classrooms to the armed services, which have been studied through the use of sociometric techniques (Lindzey and Borgatta, 1954).

Discovering the nature of the interpersonal relationships that exist within a group is important to the solution of four major problems that group leaders encounter: (1) how interpersonal relationships affect individual adjustment, (2) how individual adjustments may be improved, (3) how interpersonal relationships affect the development of creative abilities, and (4) how the group can make the best use of each individual's creative abilities. The first step in analyzing these relationships is the determination of the social value of individuals within the group. The immediate problem then becomes one of developing methods which give an adequate picture of social value.

The two basic assumptions underlying sociometric techniques for preschool age children are: (1) a person wants to be near someone who has social value for him, and (2) a person wants to benefit someone who has social value for him. The majority of the tests reported in the literature have been based on the former assumption. At least two tests have been based on the latter assumption. No attempt has been made to use both tests with the same group of children to determine the relationship of the picture of social value indicated by each test. There was a possibility that children's preferences in the be-near situation would be different from those in the benefit situation. It was this possibility which prompted the present investigation, since it was necessary to know whether one or both tests must be used to obtain an adequate picture of the social value of

individuals.

Procedure

Steps were taken as follows to develop and test methods which might depict the social value of individuals to the group: (1) a search of the literature for pertinent information regarding sociometric testing and for greater understanding of sociometric procedure, (2) construction of the tests to be used in the present study, (3) administration of these tests to a group of preschool children, and (4) comparison of the sociometric patterns indicated by each test.

CHAPTER II

REVIEW OF LITERATURE

Literature and research in the field of sociometry is quite extensive. Various phases of group structure and interaction, such as the existence of subgroups, or the interpersonal relationships of group members, have been studied through the use of sociometric techniques. Different techniques have been developed to investigate these phases. This chapter will discuss techniques which apply to sociometric testing in general and tests which have been used with preschool children.

Requirements of a Sociometric Test

In their thorough discussion of sociometric literature, Lindzey and Borgatta (1954) have outlined clearly the requirements of a sociometric test:

1. The limits of the group should be indicated to the subjects. The sociometric test places no restrictions on persons within the group. The subjects should clearly understand the nature of the group.
2. Subjects should be permitted an unlimited number of choices and rejections. Encourage subjects to choose as many or as few as they wish.
3. Subjects should be asked to indicate individuals they choose or reject in terms of specific criteria. This activity should be meaningful to the subjects.
4. The results of the sociometric questions should be used to restructure the group. The subjects should be told that their choices and rejections will play a decisive role in determining with whom they will associate in this activity.
5. The subjects should be permitted to make their choices privately, without the other members of the group being able to identify the response.

6. The questions should be gauged to the level of understanding of members of the group. (Lindzey and Borgatta, 1954, p. 407)

Different investigators have met these requirements in a variety of ways, modified them, and eliminated some of them when they were thought to be unnecessary. No report was found which conclusively demonstrated that any of these requirements were not important to the validity of sociometric tests.

Each requirement will be discussed separately in this review along with the studies and methods especially relevant to it.

Defining the Limits of the Group

In many of the sociometric tests for preschool children, the investigators have relied upon the subject's memory of the members in a particular group from which he made his choices (Biehler, 1954; Budden, 1943; Dunnington, 1957; Frankel, 1946). The limits of the group may be more clearly defined to the subject when a picture of every member of the group is presented to the child as he makes his choices. Many recent investigators have used this technique (Biehler, 1954; Horowitz, 1961; McCandless and Marshall, 1957; Starkweather, 1961).

It is conceivable, too, that since this technique probably makes it easier for the child to make his choices, it will meet with less resistance. Lafter (1957) who compared these two ways of defining limits found that with the pictorial technique more children responded to the testing, the range of responses was increased, it seemed to have greater appeal for the children and held their interest longer.

The pictorial technique also makes it possible to determine whether each subject knows the names of all the children in his group

(Starkweather, 1961). He may be asked to name each picture and if he does not know the names of some children, the pictures help him learn them. Even if the subject forgets a name during the test he can make his response by pointing to the desired picture.

The pictures have been arranged in various ways for these studies. Biehler (1954) spread pictures of all group members before the subject. McCandless and Marshall (1957) and Horowitz (1961) mounted pictures of all children in the group on a rectangular board. These investigators presented one-half of their subjects with one order and the other one-half with another order so that a given child's picture did not appear in a corner position in both orders. Starkweather (1961) handed pictures to the subject one at a time, asking him to name each one and to place it on the table before him. Lafter (1957) mounted pictures in a circle so that each picture was equidistant from the center. She attempted to minimize the tendency to make choices in the circular order by asking the subject to identify each picture in random order.

Koch (1933) suggested that the position of names in a paired-comparisons test did not influence subjects' choices if the subject had a decided liking or disliking for one person in the pair, but where children were about equally favored, position might have influenced the child's choice. It seems likely also that position of pictures could influence the subject's response when he has ambivalent feelings toward some group members. Starkweather's study (1961) indicated that the position of pictures in a paired-comparisons test did not influence choices.

Inclusion of Rejections

Whether or not to incorporate rejections as well as positive choices in a sociometric test poses a difficult problem. The pros and cons of this requirement have been summarized as follows:

> a. Teachers and research workers are hesitant to use the negative portion (social rejection of certain associates) of the partial-rank order scale, for fear that rejection of certain children may be discussed outside the classroom, become crystallized, and lead to a more universal rejection of children filling the bottom positions of social status hierarchy.
>
> b. When the negative portion of the scale is not employed, zero scores (individuals receiving no positive choices) are difficult to interpret. On the basis of available data, it is impossible to know whether the zero score implies nondescript nonentity or violent rejection by associates.
>
> c. Even when the negative portion of the scale is employed there is no rigorous way of combining negative and positive scores in a psychologically meaningful way. An averaging of positive and negative choices may result in a zero or near-zero score which should be interpreted quite differently from a zero score that is made up principally of zero scores. (Thompson and Powell, 1951, p. 441)

Dunnington (1957) incorporated rejections in her sociometric test by asking subjects whom they would like to play with and whom they wouldn't like to play with. "Forced" or specifically elicited choices were included to differentiate between those children who were disliked and those who were unnoticed. The subject was asked whether or not he liked to play with each of the children whose names he had not volunteered, those being termed "forced" responses. Her results suggested that sociometric status is not accurately measured by a system which does not include rejections and "forced" responses. Lafter (1957) also included rejections in her study by asking children whom they did not like as well as whom they liked.

The paired-comparisons method is one that affords incorporating both positive choices and rejections in such a way as to avoid the

harmful effect on the group. Since each child in the group is paired with every other member of the group the subject must choose one from the pair and thereby passively reject the other. It is presumed that the subject will make his choices on the basis of the following order of preference: (1) most preferred over less preferred, (2) less preferred over unnoticed, (3) unnoticed children over children who are actively disliked. Many investigators have used the paired-comparisons method (Eng and French, 1948; Koch, 1933; Lippitt, 1941; Starkweather, 1961).

Other investigators have either been unwilling or have neglected for some reason, to incorporate rejections. Dunnington (1957) suggested that this aspect of sociometric method may be a variable underlying areas of disagreement in sociometry.

Unlimited Versus Limited Responses

Whether or not to provide for an unlimited or a limited number of responses poses another difficult problem. Northway (1952) states: "Statistically, the greater the number of criteria and the more choices allowed proportionate to the number of individuals in the group, the greater the possibility of each person being chosen and the resulting distribution approximating that of a normal curve." (Northway, 1952, pp. 2,3). Lindzey and Borgatta (1954) point out that the range of interpersonal reactions the sociometric device measures is reduced by specifying the number of responses. Eng and French (1948) found that techniques which allowed for an unlimited number of responses correlated more closely to a paired-comparisons measure used as a criterion that did techniques which specified the number of choices. It would appear, then, that techniques which provide for an

unlimited number of responses give a more complete picture of sociometric status.

The reader will recall from the list of requirements for a sociometric test that subjects should be encouraged to make as few or as many responses as they wish. Some investigators have done just this. Lafter (1957) and Byrd (1951) allowed subjects to make as many responses as they wished. The major disadvantage of these measures is that adequate statistical formulations are difficult to determine (Gottheil, 1952).

The paired-comparisons technique used by Lippitt (1941), Koch (1933) and Starkweather (1961) and the technique used by Dunnington (1957) which "forced" responses are similar in that they require the subject to respond to every member of the group. They afford a complete measure of the range of interpersonal relations in the group, yet the number of responses is specified. The major disadvantage of these measures is that the amount of time required to take these tests make them psychologically difficult for the young child and make maintenance of rapport difficult for the investigator.

Many investigators have specified the number of choices the subject can make. Biehler (1954) allowed his subjects to choose four group members, then two of these four, then one of these two. He derived first, second, and third choices in this manner. Frankel (1946) and Starkweather (1961) allowed three choices and McCandless and Marshall (1957) allowed 5. Moreno (1942) had the subjects choose one companion for each of several activities.

When the number of responses are specified, the investigator runs the risk of having some subjects who do not wish to make as many responses as required, or any responses at all. The investigator

here must determine whether he will urge the subjects to make the specified number of responses or make statistical adjustments. Northway (1952) advocated making such adjustments rather than forcing responses which may be psychologically false.

Responses Indicated in Terms of Specific Criteria

The criteria of a sociometric test are the bases on which the subjects make their responses. For example, the subject may be asked with whom he would like to sit, work, play, et cetera, or to whom he would like to give a gift; these activities or gifts are termed the criteria of the sociometric tests. Criteria may be divided into two main classifications according to the two basic assumptions underlying sociometric techniques: (1) criteria in which subjects benefit individual group members and (2) criteria in which subjects choose to be near individual group members.

Criteria are usually described verbally to the subjects, although one investigator has come up with a rather unique method for presenting the criteria. Biehler (1954) depicted play situations in a series of line drawings in which faces of the children were missing. Faces cut from photographs of individual children in the group were presented to the subject and he chose "faces" of those children whom he wanted to have in the play situation with his "face."

Criteria have been either real or hypothetical situations in the studies reported in the literature. Several investigators have employed hypothetical situations as criteria. Dunnington (1957) simply asked the subject whom he did and did not like to play with. Frankel (1946) was a bit more specific. She asked the subject what he liked to play with in the nursery school, then asked with whom he liked to

play with the object mentioned. Byrd (1951) had subjects choose classmates whom they would ask to be in one-act plays with them. Four days later the subjects made their choices again and put on the play.

Numerous studies have employed criteria that are real situations. In the two tests which have been reported where subjects made their choices by benefiting other group members (Hagman, 1933; Starkweather, 1961) the subjects' choices had immediate action value, that of actually giving gifts to group members of their choice. Budden (1943), Moreno (1942) and McCandless and Marshall (1957) have used tests in which subjects chose companions for activities which followed immediately.

Other investigators have simply asked the subject whom he liked best, or whom he did not like, in the group (Koch, 1933; Lippitt, 1941; and Lafter, 1957). It is possible that the subjects' understanding of such a criterion may differ; if the criterion of a sociometric test has any influence on response the results of a test using such a criterion could be inconsistent.

Lindzey and Borgatta (1954) have concluded after a comprehensive review of sociometric literature that insufficient attention has been given to the selection of criteria in many studies, but that careful selection is necessary if the tests are to be valid. Other investigators have outlined factors which must be considered when selecting criteria. Bronfenbrenner (1944) has pointed out the necessity that the criteria be familiar to the subjects. Moreno (1937) has stressed the importance of selecting criteria which are at the center of the subject's interest. It has also been stated that certain criteria refer to relationships where mutual choice is relatively unimportant and the crucial question is how frequently each person

is chosen (Criswell, 1949). The relationships that the investigator wishes to study, then, should influence the selection of the criteria.

Following Sociometric Responses with a Course of Action

The validity and reliability of sociometric tests hinge on the honest disclosure of the subject's preferences. Many investigators feel that if responses result in immediate consequences, such as gaining the companionship of preferred associates, or actually benefiting the chosen group member, the subject is motivated to give a more accurate response (Franz, 1939; Lindzey and Borgatta, 1954; Jahoda Deutsch and Cook, 1957).

Some recent investigators have questioned the necessity of giving the response a consequence. Lindzey and Borgatta (1954) state that if it is impossible to restructure the group this does not mean the data will have no value and that restructuring the group is just one of many factors that affect the relations between the subject and the research worker. Forsyth and Katz (1946) point out that "later investigators are departing from the viewpoint that promise of action to result from choices is required as a motivating force." (Forsyth and Katz, 1946, p. 340). The results of Byrd's study (1951) with school-age children suggest that the choice criteria was not psychologically different between a hypothetical situation and a real life situation.

No conclusive evidence has been found which demonstrates that sociometric questions must be followed by a course of action in order for the sociometric test to be valid; nor has it been proved that a test is equally valid without such a follow-through.

Privacy of Choice

Most of the research studies in the literature mentioned privacy of choice as standard procedure. At least the subject made his choices in private, though they were later disclosed when companions were asked to join in the specified activity.

Gauging Questions to the Subject's Level of Understanding

Two factors must be given careful consideration in order to gauge sociometric questions to the preschool child's level of understanding: (1) the child's understanding of or familiarity with the criteria and (2) the child's ability to express his preferences.

The Subject's Understanding of the Criteria

In order to have results that are consistent it seems necessary to choose criteria that have the same meaning for all subjects. Unless the criteria are simple and specific it is possible that each subject's understanding of the criteria involved in the sociometric test might differ. Lippitt (1941) has suggested that children's and teacher's estimates of popularity seemed to be based on different criteria.

Ability of Children to Express Preferences

Research to date indicates that preschool children do have preferences of companions. Children seem to have little difficulty indicating their first choices. The problem arises in determining the

finer levels of preference or the second, third, et cetera, choices of companions. Determining the social significance between these choices is difficult (Bronfenbrenner, 1943).

Moreno (1942), recognizing the inability of children to verbally express second and third choices, attempted to determine them experimentally. She removed the subject's first choice companion from the group then observed the subject's play contacts to determine his second choice companion. His third choice was determined in a similar manner.

The majority of investigators have arbitrarily assigned greater weight to each subject's first choice, and lesser weights to subsequent choices (McCandless and Marshall, 1957; Lafter, 1957; Budden, 1943). Whether or not this method is an accurate way of discriminating beyond the first choice is a moot question. Frankel (1946) compared the weighted with the unweighted scoring system. Her results indicated that children did not discriminate among preferences. Dunnington (1957) reached a different conclusion and stated that levels of preference do exist and are measured by a choice-rejection test form and weighted scoring system. Starkweather (1961) compared three different methods of weighting scores with the results of a paired-comparisons test and found that the most valid weighting on a three-choice test was 2-1-1, i. e., a weight of 2 for the first choice and a weight of 1 for each subsequent choice.

The paired-comparisons technique determines levels of preference in a manner similar to Moreno's experimental technique in that it does not rely on one indication of the subject's preference. The number of times a subject chooses a certain child may be taken as an indication of the degree of preference the subject has for that child. Among the

investigators who have used the paired-comparisons technique are Koch (1933), Lippitt (1941), Eng and French (1948), and Starkweather (1961).

A recent investigation attempted to determine finer levels of preference by means of a mechanical device which recorded latency of choice (Horowitz, 1961). The results of this study indicate that methods for using this device must be perfected.

The Validity and Reliability of Sociometric Tests

Numerous investigators have pointed out the difficulty of applying the usual concepts of reliability and validity to sociometric tests. Northway has stated the problem concisely:

> Other tests are based on the assumption that they are measuring a factor within the individual which remains constant. If the score varies this reflects inadequacies of the test rather than changes in the characteristic. Sociometry is concerned with discovering the preferred relationships which are present in a group at a particular time. If the individual discloses his preferences honestly the test is reliable and valid and these preferences may change but the test is still reliable and valid.
>
> The usual measures of validity...are...inadequate to determine what associations are wished for (Northway, 1952, pp. 16, 17).

Validity

Pepinsky (1949) has stated that sociometric tests are intrinsically valid and that the validity of the subjects' responses depends on whether or not steps have been taken to maximize rapport with the experimenter and the motivation of the subjects. She hypothesizes that "motivation of subjects in sociometric testing increases as the criteria of choice have meaning to the subjects and this meaning includes the knowledge that changes will be made in the group structure on the basis of the choices which they express

as individuals." (Pepinsky, 1949, p. 41). Bronfenbrenner (1944) has pointed out other factors that should be controlled in the test situation. He stated that unless (1) the activity is familiar to the group, (2) all members are equally free to participate, (3) preferences are not influenced by extraneous environmental factors, and (4) the nature of the choice is clearly conveyed by the sociometric question, the results may be invalidated.

Outside Criteria of Validity

Numerous investigators have employed outside checks to determine the degree of validity of their sociometric tests. Observed play contacts, teacher ratings of popularity and the paired-comparisons technique are measures that have been used as criteria of validity.

Various methods of observing play contacts of children have been worked out and the results used as a criterion of validity (Hagman, 1933; Lippitt, 1941; Koch, 1933; Moreno, 1942; Frankel, 1946; Biehler, 1954). Agreement between these observed contacts and sociometric scores in most cases, has been low. Biehler found a high agreement between first choices but little agreement between subsequent choices. Frankel concluded that sociometric tests and observed contacts measure two different phenomena.

Many investigators have used teacher ratings as a criterion of validity for sociometric tests (Koch, 1933; Lippitt, 1941; Dunnington, 1957; McCandless and Marshall, 1957; and Horowitz, 1961). The degrees of agreement between teacher ratings and sociometric tests have varied widely. Lafter (1957) has suggested that the de-

gree of agreement depends on the teacher's awareness of the social structure of her class and her ability to make such judgments rather than actually being a test of validity.

Starkweather (1961) has questioned the use of both observed contacts and teacher ratings as criteria of validity for sociometric scores, because such measures may reveal actual relationships in a group but cannot reveal wished for relationships.

Guilford (1954) has suggested that, because of its rigor, the results of a paired-comparisons technique might serve as a criterion of validity for psychological scaling methods. Starkweather (1961) and Eng and French (1948) have employed this technique as a criterion of validity in their studies.

Reliability

The degree of reliability of a measuring instrument usually means the degree to which it agrees with itself or is consistent about measuring whatever it measures. By this standard, the majority of sociometric tests would appear to be reliable since most investigators report a high degree of consistency in the sociometric pattern over a period of time. Lindzey and Borgatta (1954) point out:

> The task of specifying the elements of change in test data that may be correctly attributed to the actual changes in the variable under study, as opposed to those elements of change that must be attributed to unwanted or chance fluctuation in the test, is a complex and exacting task. (Lindzey and Borgatta, 1954, p. 420).

Translated into the terms of this study, the social value of individuals may change; determining whether it is the social value that has changed or whether the change is due to variables which were

not controlled in the test is a difficult problem.

Lindzey and Borgatta (1954) have outlined two main methods by which reliability may be determined for sociometric tests, (1) interpretive reliability and (2) test reliability.

Interpretive reliability is defined as the extent to which two different investigators agree in the interpretation of data. The variability between the interpretations of the investigators can be reduced by agreeing upon certain conventions in advance of analysis.

The reliability of the test itself may be determined by (1) giving a re-test which indicates its "repeat reliability" or (2) by calculating the degree of internal consistency of the test.

The "repeat reliability" of sociometric tests has been demonstrated by a number of research studies. Budden (1943) gave a sociometric test each month for four months and found considerable consistency in individual children's degree of acceptability, especially with those of marked high or low acceptability. Dunnington (1957) gave a re-test 60 days after her first test and found that although there was some change in individual subject's choices, position in the group remained unchanged.

Even if this "repeat reliability" were not evident in the tests, it could not be taken to mean that the test is unreliable. Lindzey and Borgatta (1954) list the effects of memory and changes in the group as variables which may affect consistency. They point out that if the group is re-structured, differences in response could be expected but if the group is not changed, the ineffectiveness of the subjects' responses could alter their attitudes toward sociometric questions.

Where multiple criteria are used, there is the chance that per-

sonal choice patterns may vary directly with the activities in terms of which the choice is made (Lindzey and Borgatta, 1954). Bronfenbrenner's data (1944) does not support this theory. His data indicated that children who are accepted on the basis of one criterion are likely to be accepted on the basis of other criteria as well, although considerable variation may occur in individual cases. One explanation for this individual variation in preferences has been offered by Koch (1933). She stated that where children are about equally favored, direction of choice tends to be less consistent and that the unpopular child might be expected to change his allegiances more frequently.

Because the usual measures of reliability and validity always result in positive coefficients which are often high, Northway (1952) has proposed that the tests measure something more than they purport to measure, and that though the tests are designed to measure preferences, they seem to be locating some underlying factor that is expressed in the different choices.

Another measure of test reliability is its internal consistency. For sociometric tests this may be determined by dividing the group in half and giving each individual two scores, one from each one-half of the group. This method is not applicable to all test situations since a difference in the two halves may be a function of the smallness of the group rather than an indication of the test's unreliability (Lindzey and Borgatta, 1954).

In tests where pictures are used to define the limits of the group, the position of the pictures may influence choice and thereby reduce the consistency of test results. Koch (1933) found that choi-

ces were more likely to be arbitrary when the respondent did not have a decided liking or disliking for the individual involved in the choice. Such a respondent might take the easy way out and choose pictures in a certain order as did some of the respondents in Lafter's study (1957).

The reliability of the paired-comparisons technique has been questioned (Biehler, 1954) in cases where the subjects were presented with pairs of names, because children tended to choose the last name in a pair. This tendency has been controlled in a pictorial paired-comparisons technique developed by Starkweather (1961). She mounted pairs of pictures so that each child's picture appeared half the time on the left and half the time on the right as the subject made his choices. The sequence of pairs was prearranged so that no picture appeared consistently at the beginning or at the end of the sequence. Statistical analysis showed no significant difference between the rank order scores for the children when their pictures appeared on the right and the rank order scores for the children when their pictures appeared on the left in each pair.

Organization and Analysis of Test Results

Various approaches have been taken both toward interpreting sociometric data and determining its statistical significance. Logically, the approach each investigator takes depends on the purpose of the particular research in mind. Most of the methods reported in the literature (such as sociograms, categorizing scores into quartiles, deciles, et cetera, or matrix approaches) do not seem appropriate to the present study since they do not facilitate the comparison of results from two different techniques.

The method of rank ordering sociometric scores and calculating rank difference coefficients of correlation seems to be the most widely accepted method for comparing data statistically. This method provides a way of changing raw scores into relative measures, thereby making possible the statistical comparison of data.

Weighting of choices, or the values assigned to subjects' first and subsequent choices, constitutes a problem when the rank order method is used. Though weighting of choices has been used extensively, Lindzey and Borgatta (1954) point out that there is no evidence that assigning equal weights for first, second, et cetera, choices would not be as good as assigning weights by any arbitrary technique and that little work has been done at the theoretical level on the meaning of intensity in sociometric choices or the value of assigning arbitrary weights. Starkweather (1961) did not assign weights arbitrarily; she chose the weighting of scores for her three-choice test which correlated most closely with the criterion of validity which she used.

Implications for the Present Research

The present research is an investigation of the relationship between the pictures of social value obtained from sociometric techniques based on two different, but related assumptions. For sociometric techniques to be most useful, they must depict a rather complete picture of the social value an individual has in his group. Most of the tests in the literature are based on the assumption that individuals want to be near people they like, or in terms of this study, individuals desire to be near those people who have social value for them. It can also be stated that individuals want to

benefit people they like; however, it is also possible that individuals may want to benefit people whom they do not want to be near, that is, with whom they do not want to associate. These individuals are still indicating that these other people possess social value for them. No research has been found in the literature which has attempted to measure both aspects of social value, but the sociometric methods which have been tried and refined can be applied to the measurement of both aspects.

How the requirements for a sociometric test were met in the present study and the justification for the way they were met follow.

The limits of the group were defined in this study through the use of pictures. Logic and study of the literature indicate that this method has many advantages in sociometric tests for preschool children. The limits of the group are clearly defined. Pictures increase the subjects' interest in the test and thus enhance the rapport between the subject and the investigator. Also, the investigator can determine whether each subject knows all the group members.

Rejections as such are not included in the tests used in this research because of the possible harmful effects on the group or on individuals. In the paired-comparisons test however, each subject chooses one group member from each pair and thereby passively rejects the other member. This indirect method of incorporating rejections is more satisfactory than asking the subject specifically to reject other group members. The results of the three-choice tests included in this study will be compared with the results of the paired-comparisons test. This will provide an indication of whether the

three-choice test is sufficiently accurate to use with preschool children. Starkweather's research (1961) has already indicated that the three-choice test which she designed is sufficiently accurate. The three-choice tests have the advantage of being simple and easier to administer than the paired-comparisons test.

In the two three-choice tests and the paired-comparisons test used in this study, the number of choices is limited, but the paired-comparisons test affords a complete picture of group reactions to each individual. Again, the comparison of data from the different tests will indicate whether the simple three-choice tests may be used to measure social value. There was a chance that the subject might want to make more or fewer choices than were specified, in which case it was decided that he would be urged to make a response.

The criteria in terms of which children made their choices in this study are specific and familiar to nursery school children. The criteria used were those with which the children had had direct or related experience, such as giving a gift and listening to a story.

Except for the choices made during the paired-comparisons test, the responses of the subjects were followed by a course of action because it was felt that this would increase the subjects' motivation to give a more accurate response. In the case of the paired-comparisons test, each child made many separate choices, and it was considered impractical if not impossible to give each child the chance to be with his chosen associates, therefore, no course of action was planned for these responses.

Each subject in this study made his responses in private in a room of the building separate from the nursery school facilities. These responses were intended to be confidential, but the subject's

responses to the three-choice test in which he chose companions for certain activities, were disclosed when these companions were asked to join in the activity.

An attempt was made to gauge sociometric questions to the preschool child's level of understanding by (1) the selection of criteria which were familiar to preschool children, (2) the use of pictures to help each subject make his choice and (3) the phrasing of the questions in simple, familiar terms; the questions were likely to be ones which children had experienced before.

If the methods of sociometric testing under study here do provide an accurate picture of social value of individuals within the group, these methods should be a useful tool for the study of interpersonal relationships within groups.

CHAPTER III

PROCEDURE

The reader will recall that the purpose of this study was to compare the patterns of social value depicted by two different types of sociometric tests, one based on the assumption that an individual wants to benefit someone who has social value for him and the other based on the assumption that an individual wants to be near someone who has social value for him. These two assumptions, plus two types of sociometric techniques were used in constructing the tests for the study.

This chapter will include a general statement about the use of these assumptions and techniques in constructing the tests, a description of the subjects of the study, a detailed description of the three sociometric tests and a description of the administration of the tests.

The Construction of the Tests

The two types of sociometric techniques used in the tests were a three-choice technique and a paired-comparisons technique. The three-choice technique was one in which the subjects chose three children from the whole group; and each subject's first, second, and third choice was recorded in order. In the paired-comparisons test, the subjects made choices between all possible pairs of group members. The three-choice technique was used in two of the tests and

the paired-comparisons technique was used in one.

One of the tests using the three-choice technique was constructed so the subject could benefit three group members who had social value for him. This test is called the Three-Choice Benefit Test in this writing. The other test, which used the three-choice technique, was constructed so the subject could indicate those group members who had social value for him by choosing three individuals whom he wanted to be near during certain activities. This test is called the Three-Choice Be-Near Test in this writing.

In the test using the paired-comparisons technique, the subject indicated those group members who had social value for him by choosing one of each pair whom he would like to be near for certain activities. This test is termed the Paired-Comparisons Be-Near Test in this writing.

To determine the validity of the Three-Choice Be-Near Test, the results of this test and the results of the Paired-Comparisons Be-Near Tests were compared. The results of the Three-Choice Benefit Test were then compared with the results of the Three-Choice Be-Near Test to determine the relationship between the two patterns of social value depicted by the tests.

Subjects

The subjects were the ten oldest children selected from a nursery school group at Oklahoma State University. There were five girls and five boys, with ages ranging from 3 years 6.7 months, to 4 years 3.0 months. Before this study was initiated, all ten children had been together in nursery school for six weeks, a length of

time which was accepted as ample for the development of definite inter-relationships. Pictures of the ten children were used to define the limits of the group. The number of subjects was limited to ten because, if more subjects were added, more pairs of pictures would be added to the Paired-Comparisons Test. This would make this test too cumbersome and tiring for the children

The Three Sociometric Tests

A detailed description of the Three-Choice Benefit Test, the Three-Choice Be-Near Test, and the Paired-Comparisons Be-Near Test follows.

The Three-Choice Benefit Test

For this test, individual pictures of the children in the group were mounted on 4" x 6" construction paper. At the beginning of the test a picture of each child in the group was handed to the subject one at a time and he was asked to name the child (This practice was discontinued in subsequent tests when the investigator was sure the subject knew all the children).

When all the children had been named and the pictures were spread on the table before the subject, the investigator placed a small gift on the subject's picture, saying, "Here is a gift for you, _____. Here is another gift that you may give to someone." The subject was allowed to give three gifts, one at a time. He made his choices by placing the gifts on the chosen child's picture. His first, second, and third choices were recorded in order. The gifts were then placed in envelopes designated as belonging to the children the subject had

chosen.

The Three-Choice Benefit Test was administered to each subject three times and each time a different set of gifts was used. During any one test session the gifts were identical in order that any tendency for the subjects to give his three gifts to one child be avoided. Small, inexpensive, dime-store favors were used as gifts. These included balloons (same size and color), tiny American flags, paper coasters, and 2" x 3" construction paper cards decorated with stickers of animals, flowers, et cetera.

The Three-Choice Be-Near Test

Pictures of the children were presented to the subject in the same way they were presented in the Three-Choice Benefit Test. The subject was then told he could choose someone to join him in an activity which was specified. The subject pointed to, or named the picture of the child whom he desired. He made three choices, one at a time. His first, second, and third choices were recorded in order. Then the subject and the investigator went to ask the three chosen children to join in the activity, which followed immediately.

The Three-Choice Be-Near Test was administered to each subject three times and each time a different type of activity was used. Listening to stories, playing with special materials, and going on excursions were used for the activity situations. An attempt was made to choose those activities which would have great appeal to all the children in order that the three children a subject chose would be motivated to join in the activity. An excursion anywhere outside the nursery school seemed motivation enough for most children. Toys

and books were sought which would be new and attractive, and which would appeal to this age group.

Scoring the Three-Choice Tests

The subject's first choice was considered to be of greater value than the later choices, therefore, a 2-1-1 weighting was used. A child was given 2 points for each time he was the first choice of another child, and he was given one point for every other time he was chosen. A raw score was obtained for each child by totaling the number of points he received. These raw scores were then converted into rank order scores for use in the comparative study of the three-choice tests and the Paired-Comparisons Test.

There was some question about the accuracy of the 2-1-1 weighting for the present research because, after the child had been given a three-choice test once, he knew he would have more than one choice on subsequent tests and he may not have been so careful about his first choice. Therefore, the choices were also totaled using an equal weight of 1 point for each of the three choices. These raw scores were also converted into rank order scores and a comparison made of the two weighting systems.

The Paired-Comparisons Be-Near Test

Before this test was begun, the activity in terms of which the subject was to make his choice was indicated to him. Pictures of individual children were arranged in pairs and were shown to the subject, one pair at a time. The subject identified the children in the pair, thereby showing that he knew them (This practice was dis-

continued when the investigator was sure the subject knew all the children). He was then asked which of the children in the pair he would like to ask to join him in this activity, if this were possible. The fact that the children chosen during the paired-comparisons test would not actually be asked to join in the activity was made clear; the fact that after both tests (the Paired-Comparisons Be-Near, and the Three-Choice Be-Near) were completed the subject might ask someone to join in an immediate activity was also made clear.

The pictures of the children were mounted in pairs on separate sheets of black construction paper, one picture beside the other. There was the possibility that the position of a child's picture might influence the subject's choice; therefore, insofar as was possible, each child's picture was placed half the time on the right and half the time on the left in the pairs in which it appeared. There was also the possibility that the appearance of a particular child's picture in two consecutive pairs might influence the subject's choice; therefore, the sequence in which the pairs were presented to the subject was prearranged so that no child's picture would appear in two consecutive pairs. The same sequence for presentation of the pictures was maintained for all subjects, but the pairs were rotated so that no pictures appeared consistently at the beginning or at the end of the sequence.

If the subject showed a tendency to choose all pictures on the right or left during the Paired-Comparisons Test, his attention was diverted for a while; it was then again explained how the choices were to be made. Some of the children were physically fatigued and were reluctant to finish the test but were encouraged to do so.

Scoring the Paired-Comparisons Test

A raw score was obtained for each child by totaling the number of times that he was chosen by the other children. These raw scores were then converted into rank order scores which indicated the position of each child relative to the other children in the group. These rank order scores were then used in a comparative study of the tests used in this research.

The Administration of the Tests

Each child was approached during the nursery school session and asked to "play a game" with the investigator. He was then taken to a separate room where he could have privacy and would not be distracted during the testing.

The order of testing was planned so that half of the subjects were given a Paired-Comparisons Be-Near Test and a Three-Choice Be-Near Test on one day and a Three-Choice Benefit Test on the following day. This order of the tests was reversed for the other half of the subjects. There was one exception to this. One child, who was absemt for the first two weeks of testing, was given this sequence of tests in one day, with a time lapse between tests. This was done in order to complete the testing within a three week period.

The lapse of a day between the be-near and the benefit tests was intended to control the possibility that a child might be reluctant to choose the same person for more than one test if the tests were administered on the same day. Yet this one day interval would not be sufficient time for any major changes in social relations in the group.

This series of the three sociometric tests was administered to each subject three times in order to determine the relative value of large and small amounts of data. For the be-near tests each subject made choices in terms of three different activities. This permitted an examination of scores to determine whether an individual's social value varied from one type of activity to another.

Each subject was required to make the choices in all tests. If a child seemed to tire during the test, he was allowed to rest for a short period. A change of pace was initiated with conversation or a short walk around the room. This occurred for a few children during the Paired-Comparisons Test.

CHAPTER IV

ANALYSIS OF DATA

The major purpose of this study was to determine the relationship between the patterns of social value depicted by the Three-Choice Benefit Test and the Three-Choice Be-Near Test. The research design also permitted analysis of data to answer the following questions:

1. Does one session of each test result in a more accurate or a less accurate picture of social value than three sessions of each test?

2. When there are more than one session of a three-choice test, is a 1-1-1 weighting or a 2-1-1 weighting the more accurate method of scoring?

3. Does the social value of individuals vary from one type of activity to another in the be-near sociometric tests?

The comparisons of data gathered in this study will be presented in the following order: (1) a comparison of the two weightings of scores, (2) a comparison of the results from one session of a test with results from three sessions of the same test, (3) a comparison of the patterns of social value depicted by the Benefit Test and the Be-Near Test, and (4) a comparison of social value in different types of activities used in the be-near tests.

Comparison of the Two Weightings of Scores

On the basis of previous research (Starkweather, 1961), a 2-1-1

weighting was accepted as valid for scoring the three-choice tests in the present study, but when the second and third sessions of the three-choice tests were administered, it was observed that some subjects realized they were to have more than one choice. Whether or not the subjects' first choices still had greater value than their subsequent choices became a question. To answer this question it was necessary to determine whether the 2-1-1 weighting was more or less accurate than the 1-1-1 weighting when there were more than one session of a three-choice test.

Raw scores for each session and the total raw scores for three sessions of the Three-Choice Be-Near Test were computed, using both weightings. These raw scores and raw scores for the Paired-Comparisons Test were then converted into rank order scores. These rank order scores are presented in Table I. (Raw scores may be found in the Appendix, p. 50)

The Paired-Comparisons Test has been accepted as the criterion of validity for the three-choice test, and a 2-1-1 weighting of the three-choice scores has been accepted as most valid (Starkweather, 1961). If the significance of the subject's first choice was lessened by familiarity with the fact that there were three choices, then unweighted scores (or a 1-1-1 weighting) could be expected to show a higher correlation to the Paired-Comparisons scores than would the weighted scores.

Spearman rank order coefficients of correlation between the results of the Paired-Comparisons and the three-choice tests were calculated for each test session and for the total of the three test sessions, using both weightings of scores (Table II).

TABLE I

RANK ORDER SCORES OF INDIVIDUAL CHILDREN BASED ON TOTAL RAW SCORES AND RAW SCORES FOR EACH SESSION OF THE PAIRED-COMPARISONS AND THE THREE-CHOICE BE-NEAR SOCIOMETRIC TESTS, USING TWO WEIGHTINGS OF SCORES

	Paired-Comparisons Test Score				Three-Choice Test Scores							
					2-1-1 Weighting				1-1-1 Weighting			
	Sessions				Sessions				Sessions			
Child	I	II	III	Total	I	II	III	Total	I	II	III	Total
A	8.0	10.0	10.0	9.0	5.5	5.0	6.5	5.0	6.0	2.0	6.0	4.0
B	4.5	7.0	5.0	6.0	4.0	10.0	2.0	4.0	4.5	10.0	3.5	7.5
C	1.0	2.0	1.0	1.0	1.0	3.0	6.5	1.5	1.0	6.0	6.0	1.5
D	4.5	5.0	4.0	4.0	2.5	6.5	2.0	3.0	2.5	6.0	1.5	3.0
E	2.0	3.0	2.5	3.0	2.5	3.0	2.0	1.5	2.5	4.0	1.5	1.5
F	3.0	1.0	6.0	2.0	8.5	6.5	4.5	6.5	8.5	6.0	3.5	5.5
G	9.0	6.0	7.0	8.0	8.5	1.0	8.0	6.5	8.5	2.0	8.0	5.5
H	6.0	8.0	8.0	7.0	5.5	8.5	10.0	10.0	4.5	8.5	10.0	10.0
I	7.0	4.0	2.5	5.0	8.5	8.5	4.5	9.0	8.5	8.5	6.0	9.0
J	10.0	9.0	9.0	10.0	8.5	3.0	9.0	8.0	8.5	2.0	9.0	7.5

TABLE II

RANK ORDER COEFFICIENTS OF CORRELATION BETWEEN THE PAIRED-COMPARISONS AND THREE-CHOICE BE-NEAR SOCIOMETRIC TESTS, USING TWO WEIGHTINGS OF SCORES

	Weighting System	
Test Session	2-1-1	1-1-1
I	.721	.724
II	.097	-.221
III	.580	.520
Total	.545	.512

For Session I, the two weightings yielded approximately the same coefficient of correlation (for 2-1-1 weighting, rho = .721; for 1-1-1 weighting, rho = .724).

For Sessions II and III and for the total of all sessions, the coefficient of correlation was greater for the 2-1-1 weighting than for the 1-1-1 weighting.

These results indicate that the 2-1-1 weighting is the more valid. The remainder of the analyses in this study will be based on a 2-1-1 weighting of scores in the three-choice tests.

Comparison of Results from One Session and Three Sessions

Since effects of temporary situations such as quarrels, illness, et cetera, may influence a subject's responses on a sociometric test, the results from one test alone may not give a true picture of the

subject's usual preferences. Conversely, it was observed that children grew tired of the tests during the second and third sessions and responses seemed to be arbitrary. Therefore, it was necessary to make comparisons between the results of the first session and the total results of three sessions to determine whether one or three sessions yielded more valid results.

The first comparison was made to determine whether one session of the Paired-Comparisons Test yielded results comparable to the total results from the three sessions of the test. Analysis of this relationship indicated that the results of the first session and the total results were highly correlated (rho = .930; $p < .001$). Stated another way, the results of the first session of this test gave just as adequate a picture of the aspect of social value which this test measures as did the results of all three sessions of the test combined.

In view of this finding, the question was raised whether one session or three sessions of the Three-Choice Be-Near Test would yield the more valid results. An analysis of the relationship between the results of the first session of this Three-Choice Test and the first session of the Paired-Comparisons Test showed a significant correlation (rho = .721; $p < .02$). An analysis of the relationship between the results of all three sessions of the Three-Choice Test and the Paired-Comparisons Test showed a much lower correlation (rho = .545; $p < .10$).

These results indicate that the first session of the Three-Choice Be-Near Test actually gives a more valid picture of the aspect of social value which this test measures, than do three sessions.

The less accurate responses on the second and third sessions of

the test may be explained by the observation that as subjects grew more familiar with the tests they became bored with them. This was true particularly for the Paired-Comparisons Test because the subjects' responses had no immediate consequence.

Comparison of Social Value Depicted by the Be-Near Test and the Benefit Test

The major purpose of this study was to compare the patterns of social value depicted by the Be-Near Tests and the Benefit Test. This comparison was necessary to determine whether one test alone, or both tests must be used to measure the two aspects of social value.

Analyses have shown that (a) the Three-Choice Be-Near Test is a valid instrument and (b) the first session of this test yields more valid results than three sessions. In view of these findings, a comparison of the results of the first session of the Three-Choice Be-Near Test and the Three-Choice Benefit Test was made. Rank order scores for the first session of each test are presented in Table III.

The comparison of the results of the two tests showed no significant relationship between the Benefit Test and the Be-Near Test (rho = .291; $p < .80$). These results indicate that these two sociometric tests measure two different aspects of social value. Therefore, in future studies, the use of both tests can be expected to give a more complete picture of the social value of individuals in a group.

TABLE III

RANK ORDER SCORES OF INDIVIDUAL CHILDREN, FOR THE FIRST SESSION OF THE THREE-CHOICE BENEFIT AND THE THREE-CHOICE BE-NEAR SOCIOMETRIC TESTS

Child	Benefit Test	Be-Near Test
A	5.5	5.5
B	9.5	4.0
C	5.5	1.0
D	5.5	2.5
E	1.0	2.5
F	8.0	8.5
G	5.5	8.5
H	2.5	5.5
I	2.5	8.5
J	9.5	8.5

Comparison of Social Value in Different Types of Activities Used in the Be-Near Sociometric Tests

When a subject chooses a companion for an activity, the activity itself may influence the subject's choice. In other words, a subject may choose a companion for one type of activity and a different companion for another type of activity. Thus, an individual may receive more choices in one type of activity than he receives in another and his social value may vary from activity to activity.

Comparisons of children's sociometric scores in different types

of activities were made to determine whether their social value varied with the activity. These scores were derived from all three sessions of the Three-Choice Be-Near Test. Rank order scores for individual children in different types of activities are shown in Table V.

The scores in the three types of activities were compared with each other and the resulting correlations are shown in Table IV.

TABLE IV

RANK ORDER COEFFICIENTS OF CORRELATION AMONG THE THREE TYPES OF ACTIVITIES USED IN THE THREE-CHOICE BE-NEAR SOCIOMETRIC TESTS

Activities	rho	p
1. Playing with special materials and taking an excursion:	.591	<.10
2. Listening to stories and playing with special materials:	.224	N.S.
3. Listening to stories and taking an excursion:	-.148	N.S.

The first correlation is rather high, although not statistically significant, indicating that children's social value in these activities is somewhat similar. The second and third correlations are very low, however, indicating that children's social value in the listening activity is quite different from their social value in the other two activities. A possible explanation for this is that a listening activity does not involve so much social interaction as the other two activities. The listening activity may be similar to a gift-giving activity in that choosing someone for a listening activity is a way of benefitting him.

TABLE V

RANK ORDER SCORES OF INDIVIDUAL CHILDREN IN DIFFERENT TYPES OF ACTIVITIES

Child	Activity		
	Playing with Special Materials	Listening to Stories	Taking an Excursion
A	8.5	3.0	8.0
B	8.5	3.0	6.0
C	2.0	5.5	1.5
D	3.0	5.5	1.5
E	1.0	3.0	3.5
F	5.0	1.0	10.0
G	5.0	7.0	6.0
H	8.5	8.5	9.0
I	5.0	10.0	6.0
J	8.5	8.5	3.5

One must remember that the results of the first session of the Three-Choice Be-Near Test were more valid than the results of the second and third sessions. Inasmuch as the above comparisons were made for the results of all three sessions their importance lies in their indication of an area in which more refined research is needed.

Summary of Results

The data collected and analyzed in this study have revealed four important findings:

1. Comparison of the Three-Choice Be-Near Test and the Three-

Choice Benefit Test resulted in a very low correlation, indicating that the two types of test measure two different aspects of social value.

2. The first session of the Three-Choice Be-Near Test yielded more valid results than subsequent sessions or all three sessions combined. For this reason the results of the first session of each test were used in the comparison of the Be-Near and the Benefit Test.

3. A 2-1-1 weighting was a more accurate method of scoring the Three-Choice Be-Near Test than a 1-1-1 weighting.

4. A comparison of children's social value in different types of activities indicated that social value in a listening activity is quite different from social value in activities which seem to require more social interaction.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study was undertaken to develop a sociometric test based on the assumption that an individual wants to be near someone who has social value for him and to compare this test with a sociometric test based on the assumption that an individual wants to benefit someone who has social value for him. Such a comparison was needed to determine whether one or both tests are necessary for measuring these two aspects of social value: (1) an individual's desirability as an associate for group activities, and (2) an individual's disposition for evoking altruistic responses in others.

The Three-Choice Benefit Test and the Three-Choice Be-Near Test were the instruments designed for measuring the two aspects of social value in this study. The Paired-Comparisons Be-Near Test was used as a criterion of validity for the latter test. These three tests were administered to a group of ten nursery school children and the results of the tests were compared. The Three-Choice Be-Near Test correlated significantly with the Paired-Comparisons Test and was therefore accepted as a valid instrument. The correlation between the Three-Choice Be-Near Test and the Three-Choice Benefit Test was low, indicating that the two tests measure different aspects of social value. For this reason, the use of both tests in future studies can be expected to give a more complete picture of social value.

Other findings of this study were as follows:

1. The first session of the Three-Choice Be-Near Test yielded more valid results than subsequent sessions or all three sessions combined. For this reason, the results of the first session of each test were used in the comparison of the Be-Near and the Benefit Tests.

2. A 2-1-1 weighting was a more accurate method of scoring the three-choice tests than a 1-1-1 weighting.

3. The social value of a preschool child in an activity where children were listening to stories was quite different from his social value in activities where children were playing with special materials or taking an excursion.

Recommendations for Future Research

While the research was in progress, several uncontrolled variables were observed in the three-choice tests which could have influenced subjects' choices, though how much these variables affected the results of the tests is not known. These variables were (1) the arrangement of pictures for the three-choice tests, (2) the subjects' experiences immediately preceding the testing situation, and (3) the disclosure of the subjects' responses when the three children he had chosen during the Three-Choice Be-Near Test were asked to join in an activity. This investigator suggests that steps be taken to minimize any influence these variables might have in future research.

The investigator also suggests that an older group of subjects be selected for future studies, since older subjects are more likely to have definite preferences for playmates and their altruistic needs may be more fully developed.

The present research has indicated an area in which more refined research is needed. This research has demonstrated that social value may vary in different group activities. Further research is needed to determine which aspects of social value are measured when different types of activities are used in a sociometric test. The components of one type of activity which distinguish it from another type of activity should be identified; selection of a specific activity for a benefit or a be-near test should be based on the particular components of that activity.

Implications of the Study

The concept of social value sheds new light on the interpersonal relationships within groups and its discovery can result in a more meaningful understanding of the interactions within groups.

Instruments which measure social value can be useful tools in the hands of research workers and group leaders. Not only can the social value of individuals be determined, but some of the subjects' altruistic needs and his needs for personal social companionship may be identified and examined. Such insight into the interpersonal relationships within groups can be valuable to group leaders who are concerned with improving the personal and social adjustments of individuals and helping individuals reach their full creative potential in the group. This insight can also be valuable in research concerned with the effects of interpersonal relations on the development of creative ability and how groups can be helped to appreciate and utilize the individual's creative ability.

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APPENDIX

TABLE VI

RAW SCORES OF INDIVIDUAL CHILDREN FOR EACH SESSION AND TOTAL RAW SCORES FOR THREE SESSIONS OF THE PAIRED-COMPARISONS AND THE THREE-CHOICE BE NEAR SOCIOMETRIC TESTS, USING TWO WEIGHTINGS OF SCORES

	Paired-Comparisons Test Score				Three-Choice Test Scores							
					2-1-1 Weighting				1-1-1 Weighting			
	Sessions				Sessions				Sessions			
Child	I	II	III	Total	I	II	III	Total	I	II	III	Total
A	34	28	27	89	3	5	3	11	2	5	3	10
B	39	34	38	111	5	0	7	12	3	0	4	7
C	44	42	46	132	11	6	3	20	8	3	3	14
D	39	37	39	115	7	4	7	18	5	4	5	13
E	42	39	40	121	7	6	7	20	5	5	5	14
F	40	46	36	122	1	4	5	10	1	3	4	8
G	29	35	34	98	1	7	2	10	1	5	2	8
H	37	31	32	100	3	1	0	4	3	1	0	4
I	35	38	40	113	1	1	5	7	1	1	3	5
J	21	30	28	79	1	6	1	8	1	5	1	7

TABLE VII

RAW SCORES OF INDIVIDUAL CHILDREN FOR EACH SESSION AND THE TOTAL RAW SCORES FOR THREE SESSIONS OF THE THREE-CHOICE BENEFIT TEST

Child	Session			Total
	I	II	III	
A	4	4	5	13
B	2	4	1	7
C	4	5	5	14
D	4	8	6	18
E	7	4	4	15
F	3	0	7	10
G	4	6	2	12
H	5	2	5	12
I	5	6	5	16
J	2	1	0	3

TABLE VIII

AGE AND SEX OF EACH SUBJECT

Child	Sex	Age at Beginning of Study	
		Years	Months
A	M	3	8.5
B	F	3	7.0
C	F	3	7.0
D	F	3	9.0
E	M	4	0.0
F	M	3	11.5
G	F	3	9.2
H	M	4	3.0
I	F	3	8.0
J	M	3	6.7

VITA

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Master of Science

Thesis: A COMPARISON OF TWO SOCIOMETRIC TESTS DESIGNED TO MEASURE THE SOCIAL VALUE OF INDIVIDUALS IN GROUPS OF PRESCHOOL CHILDREN

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Education: Attended grade school near Porter and Ft. Gibson, Oklahoma; graduated from Ft. Gibson High School, Ft. Gibson, Oklahoma, 1954; attended Oklahoma State University, 1954-55, Oakland Junior College, Oakland, California, 1955-56; received Bachelor of Arts Degree from San Francisco State College, San Francisco, California, in 1959 with a major in home economics education; attended Arizona State College in July, 1959; completed requirements for the degree of Master of Science in August, 1962.

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