

ABSTRACT

ACCURACY OF SOCIOMETRIC PERCEPTION AND ITS RELATION TO THE ACTUAL AND PERCEIVED DYADIC RELATIONSHIPS AND SOCIOMETRIC POPULARITY AMONG BOYS' GROUPS IN A CAMP

by Ken Takeda

The purpose of this investigation was to explore the relationships between the actual and perceived "like-dislike" between members in groups and the accuracy of the members' predictions of each other's feelings and sociometric popularity. The subjects were forty-nine male campers, from three different cabin groups, and their ages ranged from eleven to thirteen. They all came from lower socioeconomic backgrounds and were referred to the camp by various social welfare agencies.

The subjects were interviewed individually with the interview structured around three picture-sociometric-like questions: One, the subject was asked to indicate his like, dislike and neutral feelings toward others; secondly, he was asked to guess others' feelings toward him; and third, he was asked to guess others' sociometric popularity.

The accuracy of predictions was derived from the discrepancies between the actual sociometric variables (obtained from the first question) and the perceived or guessed sociometric variables (obtained from the second and third questions).

Fisher's exact probability test was run on the data from each individual. The median test was used on the data from the group. Both tests were used to determine whether a significant difference existed in the subject's prediction depending upon the presence or absence of a given sociometric variable. The significance of a series of Fisher's exact probability tests was tested with the use of the table provided by Sakoda, Cohen and Beall¹. The significance of overall combined results was tested with the use of the chi-square model reported by Jones and Fiske². The equivalent form reliability of Rho .72 was obtained. For validity Rho .69 was obtained between the sociometric rank order and two counselors' averaged popularity ranking of subjects. Both were significantly different from zero at the .01 level of confidence.

Some of the major findings of this research are as follows:

1. There is no significant difference in the accuracy of one's prediction of the other's feeling toward him whether it is accompanied by congruent feelings (one feels toward the other as the way he perceives the other feels toward him) or not.
2. The accuracy of one's prediction of the other's attitude toward him is moderate but it is significantly more accurate when he perceives himself as receiving a "positive" rather than "neutral-negative" choice from the other.

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3. When reciprocal feelings (one feels toward the other as the way the other feels toward him) exist between individuals, one of them is significantly more correct in recognizing the other's feelings toward him than when non-reciprocal feelings exist between them.

4. The accuracy of one's prediction of the other's attitude toward him is moderate but it is significantly more accurate when he perceives a "positive" rather than "neutral-negative" choice from the other.

5. There is no significant difference in the accuracy of one's prediction of the other's popularity whether there are congruent feelings between them or not.

6. There is no significant difference in the accuracy of one's prediction of the other's popularity whether one estimates himself as receiving a "positive" or "neutral-negative" feeling from the other.

7. There is no significant difference in the accuracy of one's prediction of the other's popularity whether there are reciprocal feelings between them or not.

8. There is no significant difference in the accuracy of one's prediction of the other's popularity whether he is chosen or rejected by the other.

9. There is no significant difference in one's prediction of his own sociometric popularity regardless of whether he perceives himself as enjoying a "high" or "medium-low" sociometric status.

10. The accuracy of the subject's prediction of the other's sociometric status is moderate but it is significantly more accurate when the other enjoys a "high" rather than "medium-low" sociometric status.

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1. Sakoda, James M., Cohen, Burton H., and Beall, Geoffrey. "Test of Significance for a Series of Statistical Tests," Psychological Bulletin, 1954, 51, 172-175.
 2. Jones, Lyle V. and Fiske, Donald W. "Models for Testing the Significance of Combined Results," Psychological Bulletin, 1953, 50, 375-382.

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Dedicated to my parents

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CHAPTER I

THE PROBLEM

A. Statement of the Problem

Most of our lives are spent in what appears to be fairly well coordinated interactions with other people. We choose the most appropriate way in which to act among numerous possible interpersonal situations. The relative smoothness of operation in our day-to-day living is a reflection of the fact that we are to a certain degree aware of what others do, feel, think and are ready to do.

Asch (2:139) says:

To act in the social field requires a knowledge of social facts -- of persons and groups. To take our place with others we must perceive each other's existence and reach a measure of comprehension of one another's needs, emotions and thoughts.

The perception of others' existence and comprehension of others' needs is mainly automatic; thus we behave without knowing and thinking very much about the "principles" by which we operate. This is often in spite of levels of capacities and skills which we may have in appraising others. We usually engage in the process without paying much attention to our role in it.

Two factors underlie this "automatic" process. First, we simply gather various information through perception; secondly, we infer properties and potentialities of the

perception which are not immediately evident.

The process of perception has many aspects. In order to behave appropriately we may have to assess others' traits, intentions, feelings, attitudes, capacities, role-taking behaviors, and the situation in which the behavior occurs. We may need to know differences of roles or we may have to differentiate a temporary state from a more permanent one.

Tagiuri and Petrullo (53:xiii-xiv) distinguish three major elements in the perceptual process:

There is the situation in which the person to be judged is embedded. We do not need to "look" at the person who has lost a loved one to make a pretty good guess about how he feels. Then there is the person, apart from the situation. If we did look at him or talk to him, we would probably be able to conclude -- at least within any one culture -- that he is sad, even without knowing about the circumstances mentioned above. Usually, however, the cues from both of these sources point in the same direction, thus increasing the likelihood that our judgment will be correct. But there is a third major source of variation in this system: the perceiver himself. He is selectively tuned to perceive certain events in preference to certain others, and when the task is ambiguous enough, as complex events can often be, he will select and interpret the evidence accordingly.

It is from this third element that the researcher's hypothetical construct was developed. He questioned the ways an individual sees himself and others; how others actually perceive him; the actual and perceived relationship between one individual (subject) and another (object); and how the accuracy of the subject's perception may be affected by the sociometric popularity of the object and the subject himself.

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The interpersonal relationship varies greatly according to the degree of social articulation between the subject and the object or the perceiver and the perceived. At one extreme we can think of a highly emotionally charged case; at the other, we can think of the subject "perceiving" a complete stranger. This level of emotional involvement or "distance" between the perceiver and the perceived is another important variable affecting his perception of others.

In selecting relevant variables in human perception it is important to keep in mind that assessment of human environment begins and continues to occur in active interaction with important others. Thus, the variables studied must have consequences for all interpersonal relationships. Sentiments of like and dislike between persons fit this criterion, but the interpersonal relationship involves many other dimensions as well. Why, then, does the researcher focus his interest on this particular fact of human relations? It is because feelings of like and dislike are the common denominator of most interpersonal situations, a fact reflected in various areas of the social sciences.

Tagiuri (53:316-317) describes:

Newstetter and Felstein, nearly thirty years ago, suggested that social adjustment may be understood as the level of mutually satisfactory interaction between individual and group and that this, in turn, is based primarily upon the group acceptance of the individual, on the one hand, and the individual's acceptance of the group, on the other. Homans, in his sociological theory of group behavior, selected activity, interaction, and sentiments of like and dislike for a systematic description of human interaction. Factor analytic studies of mutual

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ratings by members of small groups concur on the presence of three basic factors: influence and initiative, task competence, and like-dislike. While the first two are not applicable to every group, the last one is always present.

From a methodological point of view, standard sociometric procedures simultaneously provide two types of data about any member of a group: (a) information about his affective response to others, and (b) information about others' affective response to him. But traditional sociometry does not include the member's perception of a relationship between two persons: his perception of others' feeling toward him or the feelings between two other members. One's attitude and behavior do not necessarily consist of objective knowledge of the field but rather consist of speculation or inference from cues received from the object. Though sociometric data provides useful information, interpersonal behavior can be more fully understood if the subject's view is obtained.

In dealing with "inference" or "speculation", the social scientist is concerned with how close the subject's "guess" is to "reality". Differences may exist between the subject's feelings and his expression of them but as such discrepancies cannot be satisfactorily resolved, the subject's description of his feelings will be used in this investigation.

In present-day studies of "person perception" the issue of accuracy is often the focus of interest. Unfortunately, however, "accuracy" has been a problem fraught

with pitfalls, as Cronbach pointed out (18). Consequently, the results of these studies have been inconsistent and difficult to interpret.

The present researcher does not attempt to resolve all these problems, but rather hopes to add some light to the studies of "accuracy" in person perception. He investigates how accuracy of perception is related to the actual and perceived like-dislike relationships as well as the sociometric status of the perceiver and the person perceived.

B. Purpose of the Study

The purpose of this study is to explore the relationship between some of the sociometric variables existing in groups and the accuracy of group members' predictions of them. More specifically the study concerns:

- 1) the relationship between the perceived like-dislike of two group members and the accuracy of their predictions of each other's feelings for one another;
- 2) the relationship between one's estimate of another group member's feelings toward oneself and the accuracy of that prediction;
- 3) the relationship between the actual like-dislike of two group members and the accuracy of their predictions of each other's feelings for one another;
- 4) the relationship between one's feelings for another group member and the accuracy of that member's prediction of one's feelings;
- 5) the relationship between the perceived like-dislike of two members and the accuracy of their predictions of each other's popularity;

- 6) the relationship between one's estimate of another group member's feelings toward oneself and the accuracy of prediction of that group member's popularity;
- 7) the relationship between the actual like-dislike of two members and the accuracy of their predictions of each other's popularity;
- 8) the relationship between one's feelings for another group member and the accuracy of that group member's prediction of one's popularity;
- 9) the relationship between one's estimate of his own popularity and the accuracy of that prediction;
- 10) the relationship between actual popularity in the group and the accuracy of another's prediction of that popularity.

C. Definitions

- Subject: A person who makes a sociometric "choice" or who perceives his or other's sociometric popularity and attitude.
- Object: A person sociometrically "chosen" by the subject or one whose sociometric popularity and attitude the subject perceives.
- Attitude: A person's expressed or perceived sociometric "choice" such as "positive choice", "rejection" and "neutrality".
- Congruency: The subject's tendency to predict an object's attitude for the subject as the subject feels for the object. For example, if A likes B, A thinks that B also likes A.

Mutuality:

The similarity of sociometric attitudes between the subject and the object. In other words, a subject feels toward an object in exactly the same way as the object feels toward the subject. For example, if A likes B, B also likes A.

Accuracy:

The degree of discrepancy between a subject's prediction (guess) of his own or other's sociometric popularity and their actual sociometric popularity, or the discrepancy between a subject's perception (guess) of an object's sociometric attitude and the object's actual sociometric attitude. For example, if A predicts B enjoys high sociometric popularity while B actually has low or medium sociometric popularity, A's prediction is not accurate.

Self-Confidence:

A person's prediction (guess) of his own sociometric popularity; in other words, a feeling of being chosen or rejected.

D. Limitations of the Study

The subjects of this study were boys ranging in age from eleven to thirteen years. They were from the oldest

group in each of three two-week camp periods. They were chosen because it was felt that they were old enough to answer a rather complex sociometric-like questionnaire. However, the researcher does not have any scientific evidence to prove this point.

The size of the sample used was forty-nine. Though statistics were run for the data from individual subjects, the lack of random sampling and the smallness of the sample size limits the generalization of findings.

Furthermore, the homogeneity of campers' socioeconomic background may limit the possibility of generalizing the findings to different socioeconomic populations.

In this study the researcher was concerned mainly with the relations between the subject-object dyadic relationship and the subject's perceptual accuracy. There might be, however, many other possible related variables which are not considered in this study, such as age, family background, intelligence, group experience in school and neighborhood, behavior, personality characteristics and the length of association, and counselors' influences.

Subjects were to be unacquainted when they came to camp. This requirement was not completely satisfied, however, because the local social welfare agencies sent more than one camper from the same community. Nine campers knew each other prior to the camp period.

The camping session lasted for two weeks and it may be difficult to generalize the findings to permanent associations.

The sociometric-like data was obtained through a single interview. Different results might have occurred if the subject had been interviewed several times, though test-retest rank order correlation was as high as .82, significantly different from zero, at the .01 level of significance in the pilot study.

In the preceding paragraphs a general description of the rationale of the present study has been given. The specific purpose of the study has been presented. The definitions of the terms used have been described. Finally, the limitations of the study have been discussed.

In Chapter two, a review of the literature will emphasize the studies on empathy and sociometric perception.

The third chapter presents the hypotheses to be tested in this study.

The fourth chapter contains the descriptions of the setting of the study, the subjects used, the method by which the sociometric data was collected, and the validity and reliability procedures. The steps in the treatment of the data will be explained.

The fifth and sixth chapters contain an analysis of the data, an examination of the stated hypotheses in the light of this data, and a discussion of the results.

A summary of the study, findings and conclusions will be presented in the final chapter. In addition to these points some suggestions, which might prompt further research, will be offered.

CHAPTER II

REVIEW OF LITERATURE:

Background of Theory and Research in the Field

Several converging lines of theory are involved in this study. First, the study originated from various theories of "self-concept" (16, 33, 40, 44, 51). Secondly, the study is stimulated by theories of interpersonal relationship (2, 32, 50). Thirdly, and more specifically, this research is motivated by empathy studies by Cottrell (17) and Dymond (20, 21) and by sociometric perceptual studies of Ausubel and his associates (4, 5, 6, 7, 46), Trent (65, 66), Boggarta (8, 9, 10), Campbell (13), Taylor (61, 62) and Tagiuri and his associates (12, 37, 52, 53, 54, 55, 56, 57, 58, 59, 60).

While the work of the first two groups of theorists are not directly related to the perceptual study of sociometric dyadic relationships in a small group, the last group of researchers have more specifically contributed to the theory and method of this study. The researcher will review, therefore, only the relevant literature in empathy study and person perception by the third group mentioned above.

The "like-dislike" interpersonal relationship and its perception is a focus of social psychology, but is still relatively unexplored. Serious attention to sociometric

perception began at the turn of the century with the development of the concept of empathy by Theodore Lipps (11).

The implication of theory in sociometric perceptual research, however, did not become possible until the development of the Freudian emphasis on insight and transference, the concept of role-taking (40), and particularly role playing (41) and the concomitant impetus of the new "sociometric tests"(42). Moreno's concept of "tele" synthesized the development of the new sociometric test and is singularly important in this area of its conceptualization. It is interesting that "tele" has had at least three definitions. The first refers to the minimum transfer of meaning between two persons, namely mere awareness. The reference, thus, is to the minimum condition for interpersonal relations, and the focus is on process and mutuality. The second definition refers to the increased rate of interaction between members of a group. The third definition is more explicit and is best identified as "two-way empathy." This emphasis on mutuality characterizes Moreno's approach to the social through the psychological, or more accurately, the analysis of the psychological in the situational context.

A scheme for the empirical observation of empathy was developed by Cottrell (17) and Dymond (20, 21). The latter proposed a scale for the measurement of empathic ability. The instrument was made up of four parts, each containing the same six items. In the first part the individual was asked to rate himself. In the second part he was asked to

rate some other individual. In the third he was asked to rate the other individual as he believed this other would rate himself. In the fourth he rated himself as he thought the other would rate him. This scheme used ratings rather than sociometric questions. The essential difference between the interest in sociometric perception and empathy as described by Dymond, is that those emphasizing empathy take as their datum the discrepancy between the "actual situation" and the perception of it, while workers in social perception are interested in the inter-relationships of perception and actual situations.

A unique study of "tele as two-way empathy" in actual situations was made by Toeman (63, 63). A double is an auxiliary ego who attempts to co-experience with the subject in "situ". Toeman proposed a scheme for observation and tried to measure the accuracy of double empathy and tele ability.

Most empathy studies have dealt with the accuracy of perception of ratings of personality characteristics rather than with accuracy of perception of sociometric relationships. However, much experience has been reported which is of interest to the student of sociometric perception. Probably the prime reason for inclusion of the empathy approach here is the twofold criticism which has developed: on the one hand, it has been demonstrated that empathic ability corresponds closely to the "conventional" or normal patterns of response, and that a high empathy score may

occur because "...conventional people get good scores on empathy tests because most of their partners (or referents) in the test are also conventional" (38). Projection, apparently, accounts for the relationship (38). This immediately throws doubt on approaches that deal with the identification of (stereotype) response patterns as measures of empathy rather than conventionality (49). There remains, of course, the question of empathy's existence. The more recent writers cautiously agree that it exists (29, 38). A second criticism is implicit in Gage's (29) suggestion for the use of "standard persons" in the measure of empathy analogous to the use of the "auxiliary ego" in psychodramatic research (41), and his questioning whether the accuracy of perception of strangers can be carried over in interpretation to non-strangers. This questions the comparability and meaning of ratings when certain factors of interaction are or are not held constant. This same problem has been raised by Moreno and others regarding sociometric choice scores and other types of indices.

Recently, Ausubel and his associates (3, 4, 5, 6, 46) have concerned themselves with an area they call "soci-empathy" which focuses on the use of questions concerning sociometric perception and sociometric choice reports. They asked high school students to rate each other on a five point acceptance and rejection scale, predicting how every other student would rate them on the same scale, and predicting the sociometric status each classmate would

receive on the scale. The term "sociempathy" was introduced to describe a particular variety of social perception -- "an individual's awareness of his own and others' sociometric status in a given group of which he is a member"

(5:111). Some of their findings were:

- 1) Sociometric status of the perceiver was not significantly related to accuracy of perceiving own or others' sociometric status. In the case of girls, however, a slight but significant degree of positive relationship prevailed between accuracy of perceiving own status and the sociometric status of the perceiver.
- 2) The ability to perceive own sociometric status and the ability to perceive others' sociometric status were completely unrelated in these studies (4:83).
- 3) The perceptual response set measures derived in these studies are sufficiently stable and have sufficient generality over individuals and over related judgmental tasks to warrant their use for purposes of individual prediction. These measures may be interpreted as generalized personality trends within an individual, i.e., as indices of typical, self-consistent modes of perceiving the interpersonal and hierarchical aspects of social situations.
 - a) Self-underestimators perceive themselves as neither very accepting nor as very acceptable persons. They tend to be better adjusted than self-overestimators and to modify their aspirations for future performance more readily and realistically in line with objective experience. They are more accurate in perceiving their own sociometric status, but have less self-regard.
 - b) Self-overestimators, on the other hand, perceive themselves as highly accepting individuals and as on the receiving end of interpersonal relationships. They set and maintain higher aspiration levels than are warranted by their actual performance ability. They are more strongly motivated by strong needs for success and for acceptance by

others; yet despite this fact they are less accurate in their perceptions of others.

- c) Whether perceptual judgments tended to be extreme or in the middle range of the distribution was found to be related to motivational orientation. Extreme judgments appeared to be reflective of strong subjectively oriented needs, whereas non-extreme judgments were more typical of subjects who responded more in terms of group norms (46:226-227).

More recently Ausubel (6) investigated to what extent an individual's sociometric status in the group affects both the accuracy with which he perceives his own and others' status, and the accuracy with which his own status and his sociometric acceptance of others can be perceived by other group members. Conversely, he studied to what extent sociempathic ability and relative transparency of sociometric attitudes may affect sociometric status in the group.

He found that ability to perceive the sociometric ratings received from others varied directly with the sociometric status of the latter (i.e., the subjects perceived) and accuracy of perceiving the sociometric status of others also varied directly with the sociometric status of the latter (i.e., the subject perceived) (4:83).

Trent (65, 66) investigated the interrelationships between anxiety and accuracy of perception of self and others for sixty-three institutionalized delinquent boys. Accuracy of perception was measured by discrepancy scores representing the sum deviation of how others would rate

the individual on a five-point acceptance-rejection scale as compared to the individual's actual rating. Accuracy of perception of others' status was determined by a discrepancy score which was the sum of deviations of the individual's sociometric status ratings of others on a five-point scale, as compared to the other individual's actual rating. Anxiety was measured by the Children's Form of Manifest Anxiety Scale.

It was found that there is no relationship between the accuracy of perception of self-status and the accuracy of perception of others' status. It may be considered that the ability to perceive one's own status and the ability to perceive the status of others are separate skills. They involve distinctly different perceptual processes. Or perhaps, real relationship between perception of one's own and others' status is contaminated by pervasive influences such as the desire of subjects to react to others in a manner deemed appropriate within the particular living condition, or the interaction of individual estimates with reference to group estimates (65).

The findings of Ausubel and his associates as well as Trent's are related to a large body of literature indicating that perception is largely influenced and distorted by the needs of the perceiver and by his emotional attitudes toward persons, objects, and events in his perceptual world. Evidence has been accumulated, for example, that better adjusted and more intelligent, insightful and self-accepting

individuals are more apt to rate themselves and others realistically, i.e., in closer accord with group rating (34, 47). Furthermore, persons rated high in a given trait are more accurate in judging themselves and others in relation to this trait (15, 19). Frenkel-Brunswik (26,27) has described a large number of mechanisms of self-deception (e.g., "distortion into the opposite", "exaggeration", "omission", "rationalization") which operate to reduce the accuracy of self-perception. She concluded that we do not always see ourselves as we are but instead perceive the environment in terms of our own needs. Self-perception and perception of the environment actually merge in the service of these needs. Thus, the perceptual distortions of ourselves and the environment fulfill an important function in our psychological household (27).

After establishing that subjective factors played an important role in the evolution of interpersonal perceptions, the next relevant question was the influence which various aspects of these perceptions (i.e., "accuracy", "assumed similarity") exert on social behavior and its effectiveness.

Gage (30) reviewed the inconsistent results in various studies of the relationship between (a) differential ability to predict the attitudes of others, and (b) sociometric status and leadership ability. Perhaps the crucial factor is that superior perceptual acuity enhances social effectiveness only when perceptual superiority is manifested in those specific areas impinging upon the structural or

functional properties of a particular group (14). The positive aspect of this factor of relevance was strikingly illustrated in the studies of "assumed similarity" by Fiedler (23, 24, 25).

Borgatta (8, 9, 10, 11) studied extensively the interrelationships within and among various classes of measures such as the observation of interaction, affective choices reported and expected by persons, leadership ratings of self and "buddies", leadership ratings given by superiors, intelligence measures, two projective measures, three items of identification, age, education and rank among 126 air force enlisted personnel divided into fourteen groups of nine persons each.

Among the measures which are related to the choice-rejection interactions, a strong relationship was found between the tendency to choose and the tendency to expect to be chosen. No appreciable relationship was found between popularity and the tendency to choose. A significant relationship was found between popularity and the expectancy that one will be chosen. Borgatta concluded that at least two factors were operating in choice behavior: (a) There is accurate perception of social situations; and (b) there is projection (in the non-analytic sense) or reciprocity between the expectation of being chosen and choosing (11).

Campbell and Yarrow (13) examined the ways in which processes of interpersonal perception and action are related

to children's successful and unsuccessful functioning in peer groups. They systematically observed and interviewed 260 pre-adolescent children at the beginning and end of summer camp sessions to obtain detailed information on the children's perception of their peers, their actions, and reputable measures of social effectiveness.

They found little evidence that children who differed in social effectiveness differed systematically in the content of their views of others; yet they did differ significantly in interpretative quality of their perceptual reports. Appraisal of interactional data showed that acceptance by peers was associated with behavior patterns indicating greater freedom of action.

Campbell and Yarrow tentatively concluded that the simultaneous consideration of both the subject's behavior and the qualitative properties of his perception would lead to a more refined prediction of social valuation (13:18-19).

Taylor (61) considered a three-dimensional frame of reference for emotional interactions in small groups. He asked the members of therapeutic groups and student classes to rank their companions and themselves with regard to their popularity.

The data suggested that while group members had approximately the same knowledge of others' dominance status as of their own, they were generally less aware of their own popularity than that of others (61:656).

In the second set of questions, Taylor requested the subjects to rank their subjective preference for their partners in the groups. The data indicated that the group members understood and obeyed the different test instructions, and were able to distinguish between the introspective assessment of their own interpersonal feelings toward group partners and their objective estimates of their public status (61:658).

The sociometric questionnaire was also applied to measure the subjects' love-hate feelings toward each other. The data indicated that group members were influenced in their feelings for group companions by their conscious or unconscious awareness of the popularity which these companions publicly enjoyed in the group, and that this influence was so marked that it almost obscured the fact that genuinely personal feelings, unaffected by partners' public status, did exist in many dyadic relationships (61:659).

Taylor devised rank matrix of guessed self-appeal (i.e., his estimates of the feelings or preferences he believes himself to have aroused in his partners) and measured the degree of interpersonal friendliness which was attributed to individuals by the group members generally.

He also devised a matrix of guessed self-appeal. The results of the two kinds of matrices were combined for Attributed Interpersonal Friendliness. Interestingly, the relationship between Attributed Interpersonal

Friendliness and Publicly Exhibited Friendliness was not found to be as close as the relationship between Interpersonal and Public Popularity.

This led the investigator to conclude that group members based their guesses chiefly on consideration of their dyadic relations and failed to take adequate account of any public phenomenon which -- as in the case of love-hate feelings -- might have introduced some semblance of agreement into the divergencies of their dyadic scores. Whatever general friendliness a partner exhibited to the group as a whole, seems to have impressed his companions less than the emotions he displayed -- or was felt to have displayed -- in his private dyadic dealings (61:662).

In the later report the same investigator concerned himself with a distinction between the recognition of emotions in others generally and the recognition of those emotions when directly intended for the subject. He also concerned himself with the difference between global and dyadic judgments of others. It was found that unpopular persons tended to be quite unaware of their dyadic appeal. It was speculated that the unpopularity of these people was caused by their misjudgment of the feelings of others toward them, and by the gauche and ill-adapted behavior which their misjudgment may have provoked. But it may also be that both unpopularity and ignorance of dyadic self-appeal originated because the person concerned had been unable, for one reason or another, to establish suffi-

ciently close and congenial relations with his group companions (62:671).

In their earlier studies, Tagiuri and his associates (39, 52, 53, 54, 55, 56) concerned themselves with investigating whether members of a group can perceive their feelings for each other more accurately than might be predicted by chance; how their perception of others' feelings toward them related to their own feelings for others; whether the mutuality of feeling in a group is higher than would be expected by chance; and how these phenomena of "accuracy", "congruency", and "mutuality" relate to each other.

In more recent studies (37, 53, 57, 59) Tagiuri and his associates concerned themselves with the manner in which the preferences of the members of a group for each other are known to their companions, what the members' distinctive behaviors are, and what factors determine the degree to which the sociometric choices of a particular member would be known. Observations were made on some sixty well-acquainted groups, ranging in size from six to thirty-five members, the average age of members varying from eight to forty years. The groups, composed mostly of men, were of several kinds: naval crews, summer campers, seminar participants, semi-therapeutic groups. All the groups existed prior to and independently of this research.

Each subject was asked to indicate those members of the group with whom he would like to associate or, even more simply, to indicate those in the group he "likes most."

Next, each person in the group gave the names of those members who, in his opinion, "like him best". Then each member was asked to put himself in the boots of each other member and to indicate "whom that other member will choose" and "by whom he will feel chosen". A parallel set of questions was asked about dislikes.

First they investigated whether the verbal responses used as data provided information about the phenomena under study. In order to test this question, they mathematically constructed groups of robots to determine what accuracy levels might be expected to occur by chance in a group (39, 56).

The model described above was considered temporary. It answered the question of what would probabilistically happen if certain arrays of events were brought into combination at one point in time. Relationships between human beings, however, do not take place over a brief instant but rather, endure over time. For many purposes this method was inappropriate. Tagiuri and his associates focused their interests, then, on three major dyadic characteristics: mutuality, congruency and accuracy.

The above investigations made several important findings. The accuracy with which subjects were able to recognize the feelings they observed in group members exceeded chance. This deviation from chance was, however, mainly accounted for by the superiority of subjects in recognizing correctly those who liked them best. Accuracy in

recognizing rejection was not markedly above robot chance, though it was significantly so. The second finding was that human subjects exceeded the robots in congruency; that is, in the extent to which the feeling they held for a person was identical to the feeling they perceived this person to have for them. The third finding was that mutuality also exceeded chance level significantly.

It was concluded that the interpersonal perception of individuals in a small face-to-face group appeared to be greatly dependent on the operation of mutuality between how a member feels toward another and how the other is seen as feeling toward him. If two individuals have mutual feelings toward each other, their impressions of each other are likely, therefore, to be "accurate". If mutuality of feeling happens to be absent they may be at cross-purposes with each other -- a situation relieved by the practice of politeness and reserve designed to mask feelings whose recognition might prove disruptive. In any case, accuracy of perception in interpersonal relations seems as much a product of other factors as a skill in its own right (55).

More recently the same investigators reported their study on the extent to which members of a group are aware of a specific member's sociometric preference related to whether or not the recipient of choice is aware of it. The visibility or transparency of a choice was measured in terms of the number of members who knew about the choice, excluding from count the member chosen (37, 53, 56, 57).

It was concluded that the visibility of preference proved to be a function of the particular dyadic relationship existing between the chooser and the person chosen. When reciprocation, a major determinant of visibility, is held constant, the presence or absence of self-confidence (feeling of being chosen) on the part of subject and object has a substantial influence upon the visibility of subject's choice. In general, self-confidence enhances visibility. When mutuality of both preference and confidence are present, visibility attains its highest values. The more integrated the dyad in which the subject's choice is embedded, the greater is the visibility of that choice (57: 390).

While these researchers in sociometric perception, especially Ausubel, Trent and Tagiuri, provided the important basis for formulating hypotheses, the present researcher found several additional points to be considered directly related to the relevant questions in sociometric perception.

Among several questions raised by Ausubel and his associates (3, 4, 5, 6, 7, 46) and Trent (65, 66) were the extent to which an individual's sociometric status in the group affects both the accuracy with which he perceives his own and others' status, and the accuracy with which his own status and his sociometric acceptance of others can be perceived by the fellow group members.

The accuracy of the subject's prediction of himself was measured as the sum of deviations between how others

others actually choose him and the subject's guess of how others choose him. The accuracy of subject's prediction of others was measured, in the same way, as the sum of discrepancies between others' real sociometric status and the subject's guess of others' sociometric status.

Because of the nature of Ausubel's research questions and the use of sum of discrepancies as an accuracy measure, he ignored the variation of perceptual accuracy in terms of dyadic relationship which a subject establishes with each of the group members. For example, Subject A and Subject B may have an equal accuracy score in perceiving their own sociometric status. The same accuracy score, however, does not necessarily indicate equal quality of perception. Subject A may be more capable of guessing positive choices which he receives while Subject B may be more capable of guessing negative choices or rejections which he receives. Thus, it is very important to consider how the subject's perceptual accuracy of self and others relates to the dyadic relationship between the subject and the object.

Both Ausubel (4) and Tagiuri (37, 53, 57, 59) concerned themselves with visibility or transparency of sociometric choices. Ausubel studied to what extent an individual's sociometric status in the group affects the accuracy with which he perceives his own status and to what extent his sociometric acceptance of others can be perceived by fellow group members. Tagiuri approached the phenomenon of transparency in terms of probability. He compared the subject's

transparency score to the level of transparency that would be expected if members judged a subject's choice on a random guessing basis.

It was shown that the visibility of a choice is generally above chance, and that its level is related to whether or not the choice is reciprocated, as well as to such other variables as the intensity of the choice, and the confidence in reciprocation by the person making the choice. When degree of reciprocation between pairs of members is held constant, no significant relationship was found between the visibility of a choice and whether or not the recipient of the choice is aware of it.

Thus neither group of investigators considered the relationship between object's perceived and actual sociometric status and the accuracy of subject's perception of object's sociometric status which seems so important in terms of Polansky's finding. (43) that "behavior of an individual in a group is a function of perceived position."

Summary

An attempt has been made to present certain researches pertaining to the empathy and sociometric perceptual studies. The trends in research methodology, its focus, and findings have been reviewed.

The difference between empathy and sociometric perceptual studies have been examined. While empathy studies

have dealt with the accuracy of perception of personality characteristics, sociometric studies have dealt with the accuracy of perception of sociometric relationships.

Ausubel and his followers defined the term "soci-empathy". The interrelationships between accuracy of sociometric perception and various personality traits and behaviors have been presented in Ausubel and Schiff, Trent, Borgatta, and Campbell and Yarrow. Taylor's three dimensional frame of reference for emotional interaction has been reviewed.

Tagiuri has been the most influential person in sociometric perception. His investigation on the phenomena of accuracy, congruency, mutuality and transparency of feelings has been described.

Some critical comments have been presented by the present researcher.

CHAPTER III

HYPOTHESES

The researcher postulated ten hypotheses at the start of this study. They are stated as follows along with predictions and specific questions.

Hypothesis I

Accuracy of the subject's prediction of the object's attitude toward him is unrelated to congruency between them.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's attitude toward the subject whether the subject-object relationship be congruent or not.

Question: Is perception of another's attitude more or less accurate when it is accompanied by a corresponding attitude? That is, if A feels chosen by B, is he more likely to be right if he also chooses B or if he does not choose B?

Hypothesis II

Accuracy of the subject's prediction of the object's attitude toward him is unrelated to his estimate of the object's attitude toward the subject.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's attitude whether the subject perceives choice, rejection or neutrality from the object.

Question: Is perception of another's attitude more or less accurate when it is perceived as choice, rejection or neutrality? That is, if A feels chosen by B, is he more likely to be right than when he feels rejection or neutral choice by B?

Hypothesis III

Accuracy of the subject's prediction of the object's attitude toward him is positively related to mutuality between them.

Prediction: There will be a significantly higher accuracy of the subject's prediction of the object's attitude toward the subject, when there is mutuality between the subject and the object than when there is no mutuality between them.

Question: When you feel the same way toward another as he feels toward you, will you be more correct in recognizing his feeling than when you feel differently toward him than he does toward you? That is, if A is chosen by B, is he more likely to be right in guessing B's feeling toward him when he also chooses B than when he does not choose B?

Hypothesis IV

Accuracy of the subject's prediction of the object's attitude toward him is positively related to the object's attitude toward him.

Prediction: Accuracy of the subject's prediction of the object's attitude toward him will be significantly higher when the object chooses the subject rather than

when the object rejects or feels neutral toward the subject.

Question: Can A recognize B's feeling toward him best when B likes A?

Hypothesis V

Accuracy of the subject's prediction of the object's sociometric status is unrelated to congruency between them.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's sociometric status whether the subject-object relationship be congruent or not.

Question: Is perception of another's popularity more or less accurate when it is accompanied by a corresponding attitude? That is, if A feels chosen by B, is he more likely to be right in guessing B's popularity if he also chooses B?

Hypothesis VI

Accuracy of the subject's prediction of the object's sociometric status is unrelated to his estimate of the object's attitude toward him.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's sociometric status whether the subject perceives choice, rejection or neutrality from the object.

Question: Is perception of another's popularity more or less accurate when the subject perceives choice, rejection or neutrality from the object? That is, if A feels chosen by B, is he more likely to be right in guessing B's

popularity than when he feels rejected by or neutral from B?

Hypothesis VII

Accuracy of the subject's prediction of the object's sociometric status is unrelated to mutuality between them.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's sociometric status whether the subject-object relationship be mutual or not.

Question: Is perception of another's popularity more or less accurate when it is accompanied by mutual feeling? That is, if A is chosen by B, is he more likely to be right in guessing B's popularity if he also chooses B?

Hypothesis VIII

Accuracy of the subject's prediction of the object's sociometric status is unrelated to the object's attitude toward him.

Prediction: There will be no significant difference in accuracy of the subject's prediction of the object's sociometric status whether he receives choice, rejection or neutrality from the object.

Question: Is perception of another's sociometric status more or less accurate when he is chosen by another than when he is rejected or given neutral choice? That is, if A is chosen by B, is he more likely to be right in guessing B's popularity than when he is rejected or given a neutral choice by B?

Hypothesis IX

Accuracy of the subject's prediction of his own sociometric status is unrelated to his self-confidence.

Prediction: There will be no significant difference in accuracy of the subject's prediction of his own sociometric status whether he considers himself as enjoying a high, middle, or low sociometric status.

Question: Is perception of self more or less accurate when the subject considers himself as enjoying a high, middle or low status? That is, if A feels himself a high status holder, is he more likely to see himself right than when he feels himself to be of middle or low status?

Hypothesis X

Accuracy of the subject's prediction of the object's sociometric status is positively related to the object's sociometric status.

Prediction: Accuracy of the subject's prediction of the object's sociometric status will be significantly higher when the object enjoys a high status than a low or middle status.

Question: Is perception of another more or less accurate when another enjoys a high popularity than a low popularity? That is, if B enjoys a high popularity, is A more likely to be right than when B enjoys a low popularity?

CHAPTER IV

RESEARCH PROCEDURES

A. Setting of the Study

This research was conducted at Camp Oakland in Oxford township, Oakland County, Michigan. In addition to the summer camp, Camp Oakland furnishes a year-round residential program for delinquent and neglected boys and girls. The winter work camp is to give a special education program under the auspices of the Oakland County Juvenile Court, for the boys who dropped out of school.

The summer camp drew its campers throughout the county from the social welfare agencies' referrals. All campers were from lower socio-economic backgrounds. There were approximately ninety-six campers in each of the two-week camp periods. The ratio of boys and girls was nearly even. There were four camp sessions during the summer of 1961.

The camp counselors were undergraduate or graduate students from various colleges and universities majoring in Education, Psychology or Sociology. While they worked as counselors, they were also enrolled in six to nine credit-hour courses in Education under the extension program of Michigan State University.

B. Research Population

The forty-nine subjects were boys ranging in age from

eleven to thirteen years. There were fifteen, sixteen and eighteen campers in each cabin group used in three different camp periods. The subjects were in the oldest group in each of the three two-week camp periods. They were chosen because it was felt that they were old enough to answer the rather complex sociometric-like questionnaire.

Camp policy provides for new campers every summer except in a few cases especially requested by referring agencies. Therefore, the requirement of non-acquaintance of subjects was not completely satisfied. When important social situations are chosen for study, person perception is necessarily interwoven with interaction. This fact, on the one hand, creates a problem by confounding perception and interaction; on the other, interaction is a part of the process of person perception itself and any attempt at isolating it produces an artificial situation preventing much learning.

The interaction situation varies in terms of genuineness or naturalness. At one extreme, the real-life situation preserves its full genuineness; at the other, the controlled conditions are suitable for examining separate components of the process.

The present researcher emphasized the former situation to satisfy his research design and purpose. Camping, which provides twenty-four hours of informal living for children, was considered an adequate (or a genuine) real-life situation. The sociometric-like questionnaire was constructed

so that the necessary components of the interaction process were revealed in sociometric matrix.

C. Data-Collection: Sociometric Interview

Once the researcher determined the variables and the situation, his approach to the collection of data was relatively simple. He depended on the conscious or verbalized preferences of an individual for others in the manner made familiar by sociometry, and then proceeded to ask the subject about his perception or evaluation of others' feelings toward him and their sociometric status.

1. Preparatory Period: Before starting the sociometric interview with the individual subject, the researcher spent about ten days with the subjects in the camp setting so that they felt at home with him. The informal singing, swimming, camp fire, cook-out and various athletic programs provided opportunities for the researcher to establish rapport with them.

2. Individual Interview: Each sociometric interview was conducted individually with the subject and the interviewer facing each other at a table. The questionnaire* was handed to the subject.

After the researcher explained the purpose of the interview, the subject was given the pictures of his cabin-mates and asked to sort them into three differently colored boxes according to the instructions. The red box was for

*See Questionnaire in Appendix A.

"positive choice" and "high sociometric status". The blue box was for "negative choice" and "low sociometric status". The white box was for "neutral choice" and "medium sociometric status". Each picture was given a number on the back to identify the name of the camper

The interviewer read the identical questionnaire consisting of three questions to each subject. After each question, the subject was asked to tell the interviewer what he was supposed to do so that the interviewer was certain the subject fully understood the nature of the question.

After the subject completed each question, the interviewer took out the pictures from the three boxes and copied the number on the back of each picture in the appropriate place on the interviewer's questionnaire.

The length of interviews ranged from ten to twenty-eight minutes with an average of fifteen minutes.

D. Sociometric Questionnaire

A picture sociometric-like questionnaire was prepared to obtain the information on five variables: the subject's sociometric attitude, the object's sociometric attitude, the subject's perception of the object's sociometric attitude, the object's sociometric status and the subject's perception of his own sociometric status.

The researcher first asked the subject to sort the pictures of his cabin-mates into three differently colored

boxes, namely those who he likes, dislikes, and those toward whom he feels neutral.

The next step in the procedure consisted of obtaining from each subject the names of group members who, in his opinion, like, dislike, and feel neutral about him. Since the researcher asked initially, "Put the pictures of boys whom you like into the red box, those you don't like in the blue box and those you don't particularly care whether you like or dislike in the white box," he now asked the subject, "Put the pictures of boys you think like you in the red box, those you think don't like you in the blue box, and those you think don't care whether they like you or not in the white box." The third step consisted of obtaining the subject's guess of the popularity ranking of the rest of the group members as high, medium and low.

E. Validity and Reliability Procedures

1. Validity Procedure: The researcher looked for an outside criterion by which to judge the validity of the subject's sociometric answers. For this purpose two counselors were asked to rank the campers in terms of popularity with the group. The two different ranks were averaged. The Spearman rank order coefficient of correlation was obtained as .69 significantly different from zero at .01 level of significance in the pilot study.

2. Reliability Procedure: The researcher used Equivalent Form Reliability in the pilot study. Set A and Set B of

the questionnaire were measuring the same variable. The Spearman rank order coefficient of correlation of .72 was significantly different from zero at .01 level of significance.

F. Treatment of the Data

1. Tabulating Data on the Matrix Tables: There were three levels of questions in the questionnaire: the subject's attitude, the subject's perception of the object's attitude toward the subject, and the subject's perception of the sociometric status of the object. These were plotted separately in three N X N matrix tables. Each matrix table contained the data for each cabin group. To simplify plotting, the figure "3" was arbitrarily given to "positive choice" and "high sociometric status". Figure "2" was given to "neutral choice" and "medium sociometric status". Figure "1" was given to "negative choice" and "low sociometric status".

The first matrix table indicated the subject's attitudes and his actual sociometric status. The second matrix table indicated the subject's perceptions of others' sociometric status. The third matrix table indicated the subject's perceptions of others' sociometric status.

2. Combined Relationship Table: Three matrix tables were transformed into a Combined Relationship Table. The table contained the subject and the object in dyads in the left hand column. The columns indicated, from left to right:

1. The subject's attitude toward the object.
2. The object's attitude toward the subject.
3. The object's attitude toward the subject perceived by the subject.
4. Discrepancy between (2) and (3).
5. The object's sociometric status perceived by the subject.
6. The object's sociometric status.
7. Discrepancy between (5) and (6).

Figures "3", and "2", and "1" were again used to indicate sociometric attitude and sociometric status. There were three combined relationship tables as the population consisted of three cabin groups.

In dealing with the actual sociometric status and the perceived sociometric status, the researcher arbitrarily used only "positive choices". If a subject received or was perceived as receiving "positive choices" from more than two-thirds of the group members, he was defined as enjoying a "high" sociometric status. If a subject received or was perceived as receiving "positive choices" from more than one-third and less than two-thirds of the group members, he was defined as having "medium" sociometric status. If a subject received or was perceived as receiving "positive choices" from less than one-third of the group members, he was defined as having "low" sociometric status.

3. Statistical Treatment: To test the first eight and the tenth hypotheses, Fisher's exact probability test was

run on the data for each subject. The median test was run on the data in Hypothesis IX.

There were nine kinds of relationships between the subject and the object in terms of the subject's attitude toward the object and the object's attitude toward the subject. They were: Positive-positive, positive-neutral, positive-negative, neutral-positive, neutral-neutral, neutral-negative, negative-positive, negative-neutral, negative-negative. These were dichotomized as "mutual" (positive-positive, neutral-neutral, and negative-negative) and "non-mutual" (positive-neutral, positive-negative, neutral-positive, neutral-negative, negative-positive, and negative-neutral).

There was another set of nine combinations between the subject's attitude toward the object and the subject's estimate of the object's attitude toward the subject. These were also dichotomized as "congruent" and "non-congruent". There were $(N - 1)$ relationships which each subject had established or perceived himself as having established with the rest of the group members. The researcher used these dichotomized categories in order to use Fisher's exact probability test.

In the following analyses, a 2 X 2 table was used for the individual subject where Fisher's exact probability test was used for individual data, the chance probability obtaining at least n statistics significant at the .05 level from the 49 calculated statistics was tested (45). When it was found to be beyond the .05 confidence, the chi-square model

for testing the significance of combined results was used to test the overall significance of the final analysis (35).

Analysis for Hypothesis I

The (N - 1) relationships, which each subject perceived as having established with the group members, were dichotomized in the rows as "congruent" and "non-congruent". The columns, which were also dichotomized as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's attitude toward him. The degree of accuracy was obtained by finding a discrepancy between the subject's prediction of the object's attitude toward him and the object's actual attitude toward him. Since one subject related to (N - 1) group members, there were (N - 1) discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's attitude toward him was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting object's attitudes toward them, depending upon their congruency or non-congruency with the objects.

Analysis for Hypothesis II

The (N - 1) sociometric attitudes, which each subject perceived as having received from the group members, were dichotomized as "positive" and "neutral-negative" in the row. The columns of the table, which were also dichotomized

as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's attitude toward him. The degree of accuracy was obtained by finding a discrepancy between the subject's prediction of the object's attitude toward him and the object's actual attitude toward him. Since one subject related to $(N - 1)$ group members, there were $(N - 1)$ discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's attitude toward him was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting object's attitudes toward them, depending upon perceiving themselves as receiving positive or neutral-negative choices from the objects.

Analysis for Hypothesis III

The $(N - 1)$ relationships, which each subject established with the group members, were dichotomized in the rows as "mutual" and "non-mutual". The columns, which were also dichotomized as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's attitude toward him. The degree of accuracy was obtained by finding the discrepancy between the subject's prediction of the object's attitude toward him and the

object's actual attitude toward him. Since each subject related to $(N - 1)$ group members, there were $(N - 1)$ discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's attitude toward him was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' attitude toward them, depending upon their mutuality and non-mutuality with the objects.

Analysis for Hypothesis IV

The $(N - 1)$ sociometric attitudes, which each subject received from the group members, were dichotomized in the rows as "positive" and "neutral-negative". The columns of the table, which were also dichotomized as "accurate" (discrepancy "0") and as "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's attitude toward him and the object's actual attitude toward him. Since each subject related to $(N - 1)$ group members, there were $(N - 1)$ discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's attitude toward him was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' attitudes toward them, depending upon

receiving positive or neutral-negative choices from the objects.

Analysis for Hypothesis V

The ($N - 1$) relationships, which each subject perceived as having established with his group members, were dichotomized in the rows as "congruent" and "non-congruent". The columns, which were also dichotomized as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's sociometric status. The degree of accuracy was obtained by finding a discrepancy between the subject's prediction of the object's sociometric status and the object's actual sociometric status. Since there were ($N - 1$) group members besides the subject, each subject had ($N - 1$) discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's sociometric status was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' sociometric status, depending upon their congruency or non-congruency with the objects.

Analysis for Hypothesis VI

The ($N - 1$) sociometric attitudes, which each subject perceived as having received from group members, were dichotomized in the rows as "positive" and "neutral-negative". The columns of the table, which were also dichotomized as

"accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicate the degree of accuracy of the subject's prediction of the object's sociometric status. The degree of accuracy was obtained by finding the discrepancy between the subject's prediction of the object's sociometric status and the object's actual sociometric status. Since there were ($N - 1$) group members besides the subject, each subject had ($N - 1$) discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's sociometric status was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' sociometric status, depending upon perceiving themselves as receiving positive or neutral-negative choices from the objects.

Analysis for Hypothesis VIII

The ($N - 1$) sociometric attitudes, which each subject received from the group members, were dichotomized in the rows as "positive" and "neutral-negative". The columns of the table, which were also dichotomized as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's sociometric status. The degree of accuracy was obtained by finding a discrepancy between the subject's prediction of the object's sociometric status,

and the object's actual sociometric status. Since each student related to $(N - 1)$ group members, there were $(N - 1)$ discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's sociometric status was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' sociometric status, depending upon receiving positive or neutral-negative choices from the objects.

Analysis for Hypothesis IX

The forty-nine subjects were categorized in a 2×2 table. The rows were divided as "high" and "low" in terms of the subject's self-confidence. The subjects who expected "positive choices" from more than half the group members were considered as "high" and those who expected "positive choices" from half or less than half of the group members were considered as "low" in self-confidence.

The columns, which were dichotomized into "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of his own sociometric status. The degree of accuracy was obtained by finding the discrepancy between the subject's perception of his own sociometric status and his actual sociometric status.

The median test was applied to determine whether the accuracy of the subject's prediction of his own sociometric

status is significantly different depending upon his high or low self-confidence.

Analysis for Hypothesis X

A 2 x 2 table was used for each subject as was done in the analyses of Hypotheses I to VIII. The objects' actual sociometric status was dichotomized as "high" and "medium-low" in the rows. The group members who received "positive" choices from more than two-thirds of the group members were considered as "high", between more than one-third and less than two-thirds as "medium", and less than one-third as "low".

The columns, which were also dichotomized as "accurate" (discrepancy "0") and "inaccurate" (discrepancy more than "1"), indicated the degree of accuracy of the subject's prediction of the object's sociometric status. The degree of accuracy was obtained by finding the discrepancy between the subject's prediction of the object's sociometric status and the object's actual sociometric status. Since each subject perceives ($N - 1$) objects, there were ($N - 1$) discrepancy scores. Fisher's exact probability test was applied to determine whether the accuracy of the subject's prediction of the object's sociometric status was significantly different from one row to another.

The analysis will reveal how many of the forty-nine subjects were significantly different in accurately predicting objects' sociometric status, depending upon high or medium-low status which the objects were enjoying.

CHAPTER V

RESULTS

In this chapter the data will be presented showing how each of the specific hypotheses was statistically tested. For hypotheses I to VIII and X, Fisher's exact probability test was applied to the data from the individual subject. The median test was applied for hypothesis IX. The .05 level of significance was used for both tests as the criteria to reject the null hypothesis.

Before the hypotheses were tested, however, analysis of variance was applied to test whether or not a significant difference exists in the accuracy of the subject's prediction of the object's attitude toward him and the sociometric status among three different cabin groups.

Individual accuracy scores in predicting the object's attitude toward the subject and the object's sociometric status were obtained as the number of "right" guesses. Both accuracy scores were sub-grouped separately according to cabin groups. Bartlett's test was applied to test the homogeneity of sample variances. In the prediction of the object's attitude toward the subject, chi-square of 1.533 was obtained. In the prediction of the object's sociometric status, chi-square of 2.026 was obtained. Since the criterion value of chi-square for the .05 level of significance

and two degrees of freedom is 5.991, the null hypothesis is accepted and the assumption of homogeneity is considered justified in both accuracy scores

Table 1 shows the results of analysis of variance for the subjects' accuracy scores in predicting the objects' attitudes toward them. The criterion value of F associated with the .05 level of significance for 2 and 46 degrees of freedom is 3.20. The obtained value of 1.24 is less than 3.20. The null hypothesis was accepted. It was concluded, therefore, that there was no significant difference in the accuracy of the subjects' predictions of the objects' attitudes toward them among three cabin groups.

Table 1. Analysis of Variance for the Subjects' Predictions of the Objects' Attitudes toward the Subjects

Component of Variability	SS	df	V	F	F _c
Between Groups	17.04	2	8.52	1.24	3.20
Combined Within Groups	314.88	46	6.85		
Total	331.92	48			

Table 2 shows the results of analysis of variance for the subjects' accuracy scores in predicting the objects' sociometric status. The criterion value of F associated with the .05 level of significance for 2 and 46 degrees of freedom is 3.20. The obtained value of 1.63 is less than 3.20. The null hypothesis is accepted. It was concluded,

therefore, that the difference of accuracy of the subjects' predictions of the objects' sociometric status among three groups, as reflected by the means, was not significant.

Table 2. Analysis of Variance for the Subjects' Predictions of the Objects' Sociometric Status

Component of Variability	SS	df	V	V	Fc
Between Groups	15.05	2	7.53	1.63	3.20
Combined within Groups	212.01	46	4.61		
Total	227.06				

1. Hypothesis 1

Hypothesis: Accuracy of the subject's prediction of the object's attitude toward him is unrelated to congruency between them.

Table 3 shows the number of subjects whose predictions of objects' attitudes toward them are significantly more accurate when they have congruent rather than non-congruent relationships. It also shows the number of subjects whose predictions of the objects' attitudes are not significantly more accurate regardless of the "congruency" or "non-congruency" of the relationship.

The analysis shows that only two out of forty-nine subjects (4%) were significantly more accurate in their predictions of the objects' attitude toward them when they had "congruent" rather than "non-congruent" relationships

Table 3. The Number of Subjects whose Prediction of Objects' Attitudes are Significantly Accurate and not Accurate in Relation to "Congruency" and "Non-Congruency"

Cabin	Significant		Not Significant	Total
	Congruent	Non-Congruent		
I	1	0	14	15
II	0	0	16	16
III	1	0	17	18
Total	2	0	47	49

with the objects, while none of the subjects were significantly more accurate in their prediction of the objects' attitudes toward them when they had "non-congruent" rather than "congruent" relationships with the objects. Forty-seven out of forty-nine subjects (96%) did not show significantly better accuracy in predicting attitudes toward them either when they had "congruent" or "non-congruent" relationships with the objects. The researcher tested the chance probability of obtaining at least two out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting objects' attitudes toward them when they have "congruent" rather than "non-congruent" relationships with the objects.* It was found

*See Chance Probability of Obtaining at Least n Statistics Significant at the .05 Level of N calculated Statistics in Sakoda, James M., Cohen, Burton H., and Beall, Geoffrey. "Test of Significance for a Series of Statistical Tests," Psychological Bulletin, 51, 2, 1954, p. 173.

.to be not beyond the .05 level of confidence. It would appear then that there is no difference in the accuracy of a subject's prediction of the object's attitudes toward him regardless of whether the subject has "congruent" or "non-congruent" relationships with the objects. Hypothesis I was supported.

2. Hypothesis II

Hypothesis: Accuracy of the subject's prediction of the object's attitudes toward him is unrelated to his estimate of the object's attitude toward him.

Table 4 shows the number of subjects whose predictions of objects' attitudes toward them are significantly more accurate when they perceive themselves as receiving "positive" rather than "neutral-negative" choices from the objects and vice-versa. It also shows the number of subjects whose predictions of objects' attitudes toward them are not significantly more accurate regardless of whether the subjects perceive themselves as receiving "positive" or "neutral-negative" choices from the objects.

The analysis shows that fourteen out of forty-nine (28%) were significantly more accurate in their predictions of objects' attitudes toward them when they perceived themselves as receiving "positive" rather than "neutral-negative" choices. None of the subjects were significantly more accurate in their predictions of the objects' attitudes toward them when they perceived themselves as receiving

Table 4 The Number of Subjects Whose Predictions of Objects' Attitudes are Significantly Accurate and not Accurate in Relation to the Subjects' Estimates of the Objects' Attitudes toward Them.

Cabin	Significant		Not Significant	Total
	Positive	Neutral-Negative		
I	2	0	13	15
II	7	0	9	16
III	5	0	13	18
Total	14	0	35	49

"neutral-negative" rather than "positive" choices. Thirty-five out of forty-nine subjects (72%), however, did not show a significantly better accuracy in predicting the objects' attitude toward them whether they perceived themselves as receiving "positive" or "neutral-negative" choices from the objects. The researcher tested the chance probability of obtaining at least fourteen out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting objects' attitudes toward them when they perceive themselves as receiving "positive" rather than "neutral-negative" choices from the objects. It was found to be beyond the .001 level of confidence.

The chi-square transformation for testing the significance of the joint probability was 198.719 at 98

degrees of freedom.* This was also beyond the .001 level of confidence. The researcher may conclude that the accuracy of the subject's prediction of the object's attitude toward him is significantly more accurate when he perceives himself as receiving a "positive rather than "neutral-negative" choice from the object. Hypothesis II was rejected.

3. Hypothesis III

Hypothesis: Accuracy of the subject's prediction of the object's attitude toward him is positively related to mutuality between them.

Table 5 shows the number of subjects whose predictions of objects' attitudes toward them are significantly more accurate when the subjects have "mutual" rather than "non-mutual" relationships with the objects and vice-versa. It also shows the number of subjects whose predictions of the objects' attitude toward them are not significantly more accurate regardless of their "mutual" or "non-mutual" relationships.

The analysis shows that twenty-four out of the forty-nine subjects (49%) were significantly more accurate in their prediction of the objects' attitudes toward them when they had "mutual" rather than "non-mutual" relationships. None of the subjects were significantly more

* The composite chi-square is given by Jones and Fiske (35) as

$$\chi^2 = -2 \sum_{i=1}^k \log_e P_i$$
 with 2 k degrees of freedom, where k is the number of independent probability values to be combined.

Table 5. The Number of Subjects Whose Predictions of Objects' Attitudes are Significantly Accurate and not Accurate in Relation to "Mutuality" Between Them.

Cabin Groups	Significant		Not Significant	Total
	Mutual	Non-mutual		
I	8	0	7	15
II	5	0	11	16
III	11	0	7	18
Total	24	0	25	49

accurate in their predictions of the objects' attitudes toward them when they had "non-mutual" rather than "mutual" relationships. Twenty-five out of forty-nine subjects (51%), however, did not show a significantly better accuracy in predicting objects' attitudes toward them whether they had "mutual" or "non-mutual" relationships with the objects. The researcher tested the chance probability of obtaining at least twenty-four out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting objects' attitude toward them when they have "mutual" rather than "non-mutual" relationships with the objects. It was found to be beyond the .001 level of confidence. The chi-square transformation for testing the significance of a joint probability was 278.200 at 98

degrees of freedom. This was also beyond the .001 level of confidence. The researcher may conclude that the accuracy of a subject's prediction of the object's attitude toward him is significantly more accurate when he has a "mutual" rather than "non-mutual" relationship with the object. Hypothesis III was supported.

4. Hypothesis IV

Hypothesis: The accuracy of the subject's prediction of the object's attitude toward him is positively related to the object's actual attitude toward him.

Table 6 shows the number of subjects whose prediction of objects' attitudes toward them are significantly more accurate when they receive "positive" rather than "neutral-negative" choices from the objects and vice-versa. It also shows the number of subjects whose predictions of objects' attitudes toward them are not significantly more accurate regardless of whether the subjects receive "positive" or "neutral-negative" choices from the objects.

The analysis shows that ten out of forty-nine subjects (20%) were significantly more accurate in their prediction of the objects' attitudes toward them when they received "positive" rather than "neutral-negative" choices from the objects. None of the subjects were significantly more accurate in their predictions of the objects' attitudes toward them when they received "neutral-negative" rather than "positive" choices from the objects. Thirty-nine

Table 6. The Number of Subjects Whose Predictions of Objects' Attitudes are Significantly Accurate and not Accurate in Relation to the Objects' Attitudes toward the Subjects.

Cabin	Significant		Not Significant	Total
	Positive	Neutral-Negative		
I	5	0	10	15
II	1	0	15	16
III	4	0	14	18
Total	10	0	39	49

subjects (80%), however, did not show a significantly better accuracy in predicting the objects' attitudes toward them whether they received "positive" or "neutral-negative" choices from the objects. The researcher tested the chance probability of obtaining at least ten out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting the objects' attitudes toward them when they received "positive" rather than "neutral-negative" choices from the objects. It was found to be beyond the .001 level of confidence. The chi-square transformation for testing the significance of a joint probability was 156.20 at 98 degrees of freedom. This was also beyond the .001 level of confidence. The researcher

may conclude that the accuracy of the subject's prediction of the object's attitude toward him is significantly more accurate when he receives "positive" than "neutral-negative" choice from the object. Hypothesis IV was supported.

5. Hypothesis V

Hypothesis: Accuracy of the subject's prediction of the object's sociometric status is unrelated to congruency between them.

Table 7 shows the number of subjects whose predictions of objects' sociometric status are significantly more accurate when they have "congruent" rather than "non-congruent" relationships with the objects, and vice versa. It also shows the number of subjects whose predictions of objects' sociometric status are not significantly more accurate regardless of whether they have "congruent" or "non-congruent" relationships with the objects.

The analysis shows that only two out of forty-nine subjects (4%) were significantly more accurate in their predictions of the objects' sociometric status when they had "congruent" rather than "non-congruent" relationships with the objects. None of the subjects were significantly more accurate in their predictions of the objects' sociometric status when they had "non-congruent" rather than "congruent" relationships with the objects. Forty-seven out of forty-nine subjects (96%) did not show a significantly better accuracy in predicting the objects' sociometric status either when they had "congruent" or

Table 7. The Number of Subjects Whose Predictions of Objects' Sociometric Status are Significantly Accurate and not Accurate in Relation to "Congruency" and "Non-Congruency"

Cabin	Significant		Not Significant	Total
	Congruent	Non-congruent		
I	1	0	14	15
II	0	0	16	16
III	1	0	17	18
Total	2	0	47	49

"non-congruent" relationships with the subjects. The researcher tested chance probability of obtaining at least two out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting the objects' sociometric status when they have "congruent" rather than "non-congruent" relationships with the objects. It was found to be not beyond the .05 level of confidence. It would appear, then, that there is no significant difference in accuracy of the subject's prediction of the object's sociometric status regardless of whether the subject has a "congruent" or "non-congruent" relationship with the object. Hypothesis V was supported.

6. Hypothesis VI

Hypothesis: Accuracy of the subject's prediction of the object's sociometric status is unrelated to his estimate of the object's attitude toward him.

Table 8 shows the number of subjects whose predictions of objects' sociometric status are significantly more accurate when they perceive themselves as receiving "positive" rather than "neutral-negative" choices from the objects and vice-versa. It also shows the numbers of subjects whose predictions of objects' sociometric status are not significantly more accurate whether the subjects perceive themselves as receiving "positive" or "neutral-negative" choices from the objects.

Table 8. The Number of Subjects Whose Predictions of Objects' Sociometric Status are Significantly Accurate and not Accurate in Relation to the Subjects' Estimates of the Objects' Attitudes toward Them.

Cabin	Significant		Not Significant	Total
	Positive	Neutral-Negative		
I	0	0	15	15
II	0	0	16	16
III	0	0	18	18
Total	0	0	49	49

The analysis shows that no subjects were significantly more accurate in their predictions of the objects' sociometric status whether they perceived themselves as receiving "positive" or "neutral-negative" choices from the objects. It would appear that there is no significant difference in accuracy of the subjects' predictions of the objects' sociometric status regardless of whether the subjects perceive themselves as receiving "positive" or "neutral-negative" attitudes. Hypothesis VI was supported.

7. Hypothesis VII

Hypothesis: Accuracy of the subjects' prediction of the objects' sociometric status is unrelated to mutuality between them.

Table 9 shows the number of subjects whose predictions of the objects' sociometric status are significantly more accurate when they have "mutual" rather than "non-mutual" relationships with the objects and vice versa. It also shows the number of subjects whose prediction of the objects' sociometric status are not significantly more accurate regardless of whether the subjects have "mutual" or "non-mutual" relationships with the objects.

The analysis shows that none of the subjects were significantly more accurate in their predictions of the objects' sociometric status when they had "mutual" rather than "non-mutual" relationships with the object.

Table 9. The Numbers of Subjects Whose Predictions of Objects' Sociometric Status are Significantly Accurate and not Accurate in Relation to "Mutuality" and "non-Mutuality" between Them.

Cabin	Significant		Not Significant	Total
	Mutual	Non-Mutual		
I	0	1	14	15
II	0	0	16	16
III	0	0	18	18
Total	0	1	48	49

One out of forty-nine subjects (2%) was significantly more accurate in his prediction of the objects' sociometric status when he has "non-mutual" rather than "mutual" relationships with the objects. Forty-eight out of forty-nine subjects (98%) did not show significantly better accuracy in predicting the subject's sociometric status whether they had "mutual" or "non-mutual" relationships with the objects. The researcher tested chance probability of obtaining at least one of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting the object's sociometric status when he has "non-mutual" rather than "mutual" relationships with the object. It was found to be not beyond the .05 level of confidence. It would appear that there is no significant difference

in accuracy of the subject's prediction of the object's sociometric status regardless of whether the object has a "mutual" or "non-mutual" relationship with the object. Hypothesis VII was supported.

8. Hypothesis VIII

Hypothesis: Accuracy of the subject's prediction of the object's sociometric status is unrelated to the quality or kind of the object's attitude toward him.

Table 10 shows the number of subjects whose predictions of objects' sociometric status are significantly more accurate when they receive "positive" rather than "neutral-negative" choices from the objects and vice versa. It also shows the number of subjects whose predictions of objects' sociometric status are not significantly more accurate regardless of whether the subjects receive "positive" or "neutral-negative" choices from the objects.

The analysis shows that none of the subjects were significantly more accurate in predicting the objects' sociometric status regardless of whether the subjects received "positive" or "neutral-negative" relationships from the objects. It would appear that there is no difference in accuracy of the subjects' predictions of the objects' sociometric status regardless of the objects' attitudes toward the subjects. Hypothesis VIII was supported.

Table 10. The Numbers of Subjects Whose Predictions of Objects' Sociometric Status are Significantly Accurate and not Accurate in Relation to the Objects' Attitudes toward Them.

Cabin Groups	Significant		Not Significant	Total
	Positive	Neutral-Negative		
I	0	0	15	15
II	0	0	16	16
III	0	0	18	18
Total	0	0	49	49

9. Hypothesis IX

Hypothesis: Accuracy of the subject's prediction of his own sociometric status is unrelated to his self-confidence.

Table 11 shows the number of subjects whose prediction of their own sociometric status are accurate and not accurate when they have "high" and "low" self-confidence.

There were twelve subjects whose predictions of their own sociometric status were accurate when they had "high" self-confidence, while eleven subjects were not accurate. There were eight subjects whose predictions of their own sociometric status were accurate when they had "low" self-confidence, while eighteen subjects were not accurate.

Table 11. The Number of Subjects Whose Predictions of Their own Sociometric Status are Accurate and not Accurate in Relation to their Self-Confidence.

Subject's prediction of his own sociometric status		
	accurate	not accurate
"High" self- confidence	12	11
	8	18
"Low" self- confidence	20	29
	49	

Chi-square value of 1.513 was obtained from these data. Since the criterion value of chi-square for the .05 level of significance at one degree of freedom is 3.841, the null hypothesis was accepted. It would appear that there is no significant difference in the subject's prediction of his own sociometric status regardless of whether he perceives himself as enjoying "high" or "low" sociometric status. Hypothesis IX was supported.

10. Hypothesis X

Hypothesis: Accuracy of the subject's prediction of the object's sociometric status is positively related to the object's sociometric status.

Table 12 shows the number of subjects whose predictions of objects' sociometric status are significantly more accurate when the objects are enjoying "high" rather than "medium-low" sociometric status and vice versa. It also

shows the number of subjects whose predictions of objects' sociometric status are not significantly more accurate regardless of whether the subjects are enjoying "high" or "medium-low" sociometric status.

Table 12. The Number of Subjects Whose Predictions of Objects' Sociometric Status are Significantly Accurate and not Accurate in Relation to the Objects' Sociometric Status.

Cabin Groups	Significant		Not Significant	Total
	High	Medium-Low		
I	3	1	11	15
II	8	0	8	16
III	5	0	13	18
Total	16	1	32	49

The analysis shows that sixteen out of forty-nine subjects (33%) were significantly more accurate in their predictions of the objects' sociometric status when the objects were enjoying "high" rather than "medium-low" sociometric status. Only one of the subjects (2%) was significantly more accurate in his predictions of the objects' sociometric status when the objects were enjoying "medium-low" rather than "high" sociometric status. Thirty-two out of forty-nine subjects (65%), however,

did not show significantly higher accuracy in predicting the objects' sociometric status either when the objects were enjoying "high" or "medium-low" sociometric status. The researcher tested the chance probability of obtaining at least sixteen out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting the object's sociometric status when the object is enjoying "high" rather than "medium-low" sociometric status. It was found to be beyond the .001 level of confidence. The chi-square transformation for testing the significance of a joint probability was 274.30 at 98 degrees of freedom. This was also beyond the .001 level of confidence. The researcher may conclude that the accuracy of the subject's prediction of the object's sociometric status is significantly more accurate when the object enjoys a "high" rather than "medium-low" sociometric status. Hypothesis X was supported.

CHAPTER VI

DISCUSSION AND INTERPRETATION

Hypothesis on the relationship between congruency and the accuracy of the subject's prediction of the object's attitude:

Hypothesis I predicted that there is no significant difference in accuracy of the subject's prediction of the object's attitude toward him whether he has a congruent or non-congruent relationship with the object. The hypothesis was supported.

Hypothesis on the relationship between congruency and the accuracy of the subject's prediction of the object's sociometric status:

Hypothesis V predicted that there is no significant difference in accuracy of the subject's prediction of the object's sociometric status whether he has a congruent relationship with the object or not. The hypothesis was supported.

It is interesting to question whether congruency is a tendency for people to feel chosen by those whom they choose, or contrariwise, to choose those they feel have selected them. Undoubtedly, there must be individual differences in the order of this cycle. In terms of subjective experience, a person's awareness of his affec-

tive response toward another seems to come sooner or with greater certainty than his awareness of another's feelings for him.

The observations made above are probably reflected in the fact that even when group members have congruent relationships with objects, the accuracy of their predictions of objects' feelings do not exceed those made when they have non-congruent relationships.

The congruent set does not operate only in connection with one's own feelings and perceptions but it also occurs in judging feelings between others as well as feelings and perceptions held by others about a third person. There is also no doubt that a general projection upon others of one's own tendency toward congruency is operating here (53). This kind of strong subjectivity is probably what prevented group members from accurately perceiving others' sociometric attitudes and status.

Hypothesis on the relationship between the object's attitude perceived by the subject and the accuracy of the subject's prediction of the object's attitude:

Hypothesis II predicted that there is no significant difference in accuracy of the subject's prediction of the object's attitude toward him whether the subject perceives himself as receiving a positive or neutral-negative choice from the object. Hypothesis II was rejected. Fourteen out of forty-nine subjects did show significantly better accuracy in predicting others' attitudes toward them when

they perceived positive rather than neutral-negative choices from the objects.

The prediction was made on the basis of a finding by Tagiuri (55) that reciprocal relationships are more transparent. Tagiuri (53) also reported that if mutuality of feelings happens to be absent the subject's perception may be inaccurate.

The researcher naively postulated Hypothesis II on the assumption that the subject's estimate of the object's attitude toward him does not involve mutuality between them. The researcher, therefore, hypothesized that the subject's estimate of the object's attitude toward him is unrelated to the accuracy of the subject's prediction of that attitude.

The above hypothesis was naive from two points of view. First, the instrument itself might not have been precise enough to obtain the necessary data. Secondly, neither mutuality nor non-mutuality was proved to be unrelated to the subject's estimate of the object's attitude toward the subject.

A question still remains, however, as to why fourteen out of forty-nine subjects did show significantly better accuracy in predicting others' attitudes toward them when they perceived positive rather than neutral-negative choices from the objects.

To explore the above question, the researcher analyzed the data on three different levels. First, it was found

that nine out of fourteen subjects, who were significantly more correct in predicting the objects' feelings when they perceived positive rather than neutral-negative feelings from the objects (Hypothesis II), were also significantly more correct in predicting objects' feelings when they had mutual feelings with them. (Hypothesis III).

Tables 13, 14 and 15 show the results of analyses I to VIII and X which indicate the subjects who predicted the objects' attitudes and sociometric status significantly better in one condition than the other. The figure indicates the level of confidence in Fisher's exact probability test while no figure indicates that the result did not reach the 5% level of confidence.

The above comparative analysis between Hypothesis II and III led the researcher to the conclusion that mutuality is not solely accountable for the fact that fourteen out of forty-nine subjects did predict the objects' attitudes toward them significantly more correctly when they felt chosen rather than rejected or given neutral choices. It was felt that dyadic relationships should be analyzed in the second level.

The above fourteen subjects' dyadic relationships with objects from whom they perceived positive choices were analyzed. Fisher's exact probability test was run to test whether there was any difference in the accuracy of subjects' predictions of objects' attitudes toward them when they had mutual feelings as contrasted with when they

Table 13. The Result of Fisher's Exact Probability Test for Individual Subjects for Hypothesis I to VIII and X (Group I)

[illegible]

Table 14. The Result of Fisher's Exact Probability Test for Individual Subjects for Hypothesis I to VIII and X (Group II)

[illegible]

Table 15. The Result of Fisher's Exact Probability Test
for Individual Subjects for Hypotheses I to
VIII and X (Group III)

Hypoth.	I	II	III	IV	V	VI	VII	VIII	X
Subjects									
1		.025	.005						
2									.05
3									
4	.05								
5									
6				.05					
7		.05							
8			.005						
9		.005	.005						
10			.005	.05					.005
11		.025	.005						
12			.005	.01					.005
13			.01						
14		.005	.01						.05
15			.01		.025				
16									
17			.05						
18			.01	.05					.01

did not. It was found that only four out of fourteen subjects were significantly more correct in predicting objects' feelings toward them when they had mutual relationships rather than when they did not.

The same analysis was made for the remainder of the subjects. Thirty-five subjects' dyadic relationships with objects from whom they perceived positive choices were analyzed. It was found that ten out of thirty-five subjects (who did not show significantly more correct predictions in objects' feelings toward them when they perceived positive choices from the objects instead of neutral-negative choices in Hypothesis II) were significantly more correct in predicting the objects' attitudes toward them when they had mutual rather than non-mutual relationships.

It would appear that there is little difference between the two groups in the proportions of subjects who were significantly more correct in predicting objects' attitudes toward them. The frequencies in each of the 2 x 2 tables for Fisher's exact probability test in both groups were accumulated separately. Four cells indicates: (2) the subjects who predicted objects' attitudes significantly more correctly when they had mutual relationships with objects, (b) the subjects who did not predict objects' attitudes toward them significantly more correctly when they had mutual relationships with objects, (c) the subjects who predicted objects' attitudes toward them significantly more correctly when they did not have mutual

relationships with the objects, and (d) the subjects who did not predict objects' attitudes toward them significantly more correctly when they did not have mutual relationships with them. In both groups only dyadic relationships in which the subjects perceived positive choices from objects were analyzed.

In Table 16 there were 111 dyadic relationships in the group in which subjects showed significantly more accurate predictions of objects' attitudes toward them when they perceived positive rather than non-positive attitudes from objects. Cell "a" indicates seventy-eight which was 70% of 111 dyadic relationships. Cell "b" indicates only 2, which was 2% of 111 dyadic relationships. Cell "c" indicates 18, which was 16% of 111 dyadic relationships. Cell "d" indicates 13, which was 12% of 111 dyadic relationships.

Table 16. Relationships between Mutuality and S's Prediction of O's Attitudes to S when S perceived Positive Choices from O (Ss who showed significant accuracies in Hypothesis II)

	accurate	inaccurate	
Mutual	a 78 (70%)	b 2 (2%)	80 (72%)
Not Mutual	c 18 (16%)	d 13 (12%)	31 (28%)
	96 (86%)	15 (14%)	111 (100%)

In Table 17 there were 293 dyadic relationships in the group in which the subjects did not show significantly more accurate predictions when they perceived positive rather than non-positive attitudes. Cell "a " indicates 152 which was 52% of 293 dyadic relationships. Cell "b" indicates only 2 which was .6% of 293 dyadic relationships. Cell "c" indicated 44 which was 15% of 293 dyadic relationships. Cell "d" indicates 95 which was 32.4% of 293 dyadic relationships.

Table 17. Relationships between Mutuality and S's Prediction of O's Attitudes to S when S Perceived Positive Choices from O (Ss who did not show significant accuracies in Hypothesis II)

	accurate		inaccurate		
Mutual	a	152 (52%)	b	2 (.6%)	154 (52.6%)
Not	c	44 (15%)	d	95 (32.4%)	139 (47.4%)
		196 (67%)		97 (33%)	293 (100%)

It appears that cell "a" of the first group is considerably larger in proportion than the second group, while cell "b" in the second group is considerably larger in proportion than that of the first group.

In total, however, there was much similarity between the two groups with reference to each cell's proportion. It was remarkable that in both groups cells "b" had extremely

small proportions (2% and .6%). This finding led the researcher to speculate that when subjects perceive positive attitudes from objects accompanied by mutuality between them, it leads the subjects to high accuracy in their prediction of objects' attitudes toward them.

But is the subject's prediction more accurate when he perceives (a) a positive attitude or (b) a neutral-negative attitude from the object of a mutual relationship? Does the mutuality still play an important role in the subject's prediction of the object's attitude toward him even when he perceives neutral-negative choice from the object?

Fourteen subjects' (those who showed significantly more accurate predictions of objects' attitudes toward them when they perceived positive rather than neutral-negative choices) relationships with objects, from whom they perceived neutral-negative choices, were analyzed. Fisher's exact probability test was run to test whether there was any difference in accuracy of subjects' predictions of objects' attitudes toward them when they had mutual feelings with objects as contrasted with when they did not. It was found that none of the fourteen subjects were significantly more correct in predicting objects' feelings when they had mutual relationships with the objects as compared with when they did not.

The same analysis was made for the remainder of the subjects (those who did not show significantly more accurate predictions of the objects' attitudes toward them when they

perceived positive rather than neutral-negative choices from objects). Thirty-five subjects' dyadic relationships with objects from whom they perceived neutral-negative choices were analyzed. It was found that only two out of thirty-five subjects were significantly more correct in predicting objects' attitudes toward them when they had mutual relationships with the objects as compared with when they did not.

There appears to be little difference between the two groups in the accuracy of the subjects' prediction of objects' attitudes toward them when the dyadic relationships in which the subjects perceived neutral-negative choices from the objects were singled out. Apparently there is little difference in the accuracy of subjects' predictions of objects' attitude toward them when they perceived neutral-negative choices regardless of whether mutual or non-mutual relationships existed.

The frequencies in each of the 2 x 2 tables for Fisher's exact probability test in both groups were accumulated separately. Four cells indicate: (a) subjects who predicted objects' attitudes toward them significantly more correctly when they had mutual relationships, (b) subjects who did not predict objects' attitudes toward them significantly more correctly when they had mutual relationships, (c) subjects who predicted objects' attitudes toward them significantly more correctly when they did not have mutual relationships, and (d) subjects who

did not predict the objects' attitudes toward them significantly more correctly when they did not have mutual relationships. In both groups only dyadic relationships in which subjects perceived neutral-negative choices from objects were analyzed.

In Table 18, there were 105 dyadic relationships in the group in which subjects showed significantly more accurate predictions of objects' attitudes toward them when they perceived positive attitudes as contrasted with when they did not. Cell "a" indicates 13, which was 12% of 105 dyadic relationships. Cell "b" indicates 17, which was 16% of 105 dyadic relationships. Cell "c" indicates 7, which was 7% of 105 dyadic relationships. Cell "d" indicates 68, which was 65% of 105 dyadic relationships.,

Table 18. Relationships between Mutuality and S's Prediction of O's Attitudes toward S when S Perceived Neutral-Negative Choices from O (Ss who showed significant accuracies in Hypothesis II)

	accurate	inaccurate	Total
Mutual	a 13 (12%)	b 17 (16%)	30 (28%)
Not Mutual	c 7 (7%)	d 68 (65%)	75 (72%)
	20 (19%)	85 (85%)	105 (100%)

In Table 19 there were 247 dyadic relationships in the group in which the subjects did not show significantly more accurate predictions when they perceived positive attitudes

from objects as compared with when they did not. Cell "a" indicates 55, which was 22% of 247 dyadic relationships. Cell "b" indicates 49 which was 20% of 247 dyadic relationships. Cell "c" indicates 41, which was 17% of 247 dyadic relationships. Cell "d" indicates 102, which was 41% of 247 dyadic relationships.

Table 19. Relationships between Mutuality and S's Prediction of O's Attitudes toward S when S Perceived Neutral-Negative Choices from O (Ss who did not show significant accuracies in Hypothesis II)

	accurate	inaccurate	Total
Mutual	a 55 (22%)	b 49 (20%)	104 (42%)
Not Mutual	c 41 (17%)	d 102 (41%)	143 (58%)
	96 (29%)	151 (61%)	247 (100%)

It appears that cells "a", "b" and "c" of the second group, (Table 19) are considerably larger in proportion than are those of the first group, (Table 18) while cell "d" in the first group is larger in proportion than that of the second group. In total, however, the proportion in each cell showed a great deal of similarity between the two groups. (It is interesting that cell "d" is larger in its proportion than are those of cell "c".) This leads the researcher to speculate that when the subject perceives neutral-negative attitudes from the object with whom he has a non-mutual relationship, his prediction of the object's

attitude is often misleading. Furthermore, when the subject perceives neutral-negative choice from the object, the presence of mutuality of feelings between them does not lead the subject to greater accuracy of predicting the object's attitude toward him as it did when he perceived positive choice.

The above finding may not completely explain the fact that fourteen out of forty-nine subjects were significantly more accurate in predicting the objects' attitudes toward them when they perceived positive rather than neutral-negative choices from the objects. It appears, however, that when the subject perceives himself as receiving positive choice from the object, it leads him to greater accuracy in predicting the objects' attitude toward him only when mutuality of feelings exists between them.

In the combined relationship tables, the researcher examined "mutual" relationships between subjects and objects which were accompanied by the subjects' estimation of positive choice from objects. It was discovered that the above described dyadic relationships were dominantly accompanied by "positive" mutuality and "positive" congruency. It is self-evident that the subjects' predictions of the objects' attitudes toward them are 100 per cent correct if the subjects perceive positive choices from the objects and also if positive mutuality and positive congruency coexist between them.

The researcher, therefore, examined to what extent the subjects' prediction of objects' attitudes toward them are significantly more accurate when the subjects have both mutual and congruent relationships with the objects as contrasted with when they do not. Fisher's exact probability test was applied to the data from individual subjects.

Table 20 shows the number of subjects whose predictions of objects' attitudes toward them are significantly more accurate when they have both "mutual" and "congruent" relationships as compared with when they do not and vice versa. It also shows the number of subjects whose predictions of objects' attitudes toward them are significantly more accurate regardless of whether they have both "mutual" and "congruent" relationships with the objects or not.

The analysis shows that thirty-nine out of forty-nine subjects (80%) were significantly more accurate in their predictions of objects' attitudes toward them when they had both "mutual" and "congruent" relationships with the objects as compared with when they did not. None of the subjects were significantly more accurate in their predictions of the objects' attitudes toward them when they had either "mutuality" or "congruency", or neither, as compared with when they had both.

Ten out of forty-nine subjects (20%) did not show a significantly better accuracy in predicting object's

Table 20. The Number of Subjects Whose Predictions of Objects' Attitudes toward them are Significantly more Accurate and not Accurate in Relation to the Coexistence of "mutuality" and "Congruency".

Cabin Groups	Significant		Not Significant	Total
	Mutuality & Congruency Coexisted	Mutuality & Congruency Not Coexisted		
I	12	0	3	15
II	11	0	5	16
III	16	0	2	18
Total	29	0	10	49

attitudes toward them regardless of whether they had both "mutual" and "congruent" relationships with the objects or not.

The researcher tested the chance probability of obtaining at least thirty-nine out of forty-nine subjects who are significantly more accurate (the .05 level of confidence) in predicting object's attitudes toward them when "mutuality" and "congruency" coexisted between subjects and objects. It was found to be beyond the .001 level of confidence. The chi-square transformation for testing the significance of a joint probability was 459.190 at 98 degrees of freedom. This was also beyond the .001 level of confidence. It would appear then that one is

able to predict the feelings of another toward himself with a greater degree of accuracy when both "mutual" and "congruent" relationships exist.

When Fisher's exact probability test was applied to the individual to test whether he is significantly more accurate in his prediction of the object's attitude toward him when positive mutuality and positive congruency exist rather than when they do not, only twenty out of forty-nine subjects (41%) were significantly more accurate when the two relationships coexisted than when they did not.

The chance probability of obtaining twenty out of forty-nine subjects who are significantly more accurate at the .05 level of confidence was beyond the .001 level of confidence. The chi-square transformation for testing the significance of a joint probability was 339.90 at 98 degrees of freedom. This was also beyond the .001 level of confidence.

While the coexistence of positive mutuality and positive congruency enables the subject to predict the object's feelings toward him perfectly, the accuracy of the subject's prediction in the above condition does not exceed that occurring when mutuality and congruency (positive, neutral, and negative) coexist.

This is due to the fact that in the second row, where positive mutuality and positive congruency do not coexist, it still includes the coexistence of neutral mutuality and neutral congruency, and negative mutuality and negative

congruency which also increases the accuracy of the subject's prediction.

Hypothesis on the relationship between the object's attitude perceived by the subject and the accuracy of the subject's prediction of the object's sociometric status:

Hypothesis VI predicted that there is no significant difference in the accuracy of the subject's prediction of the object's sociometric status whether the subject perceives himself as receiving a positive choice, rejection or neutral choice from the object. The hypothesis was supported.

The prediction was made on the basis of findings by Ausubel (3, 4, 5, 6), Schiff (46), and Trent (65, 66) that the ability to perceive one's own sociometric status and the ability to perceive others' sociometric status are completely unrelated. Adams (1) also found a very low correlation between abilities to rate self and others. Singer (11) obtained a negative relationship between perception of one's own status and perception of preferred as opposed to non-preferred persons. Dymond (21) on the other hand, found a significant positive relationship between empathic ability and insight (the ability of an individual to rate himself as others rate him).

Although there are some inconsistencies in various research results, it would appear that the type of sensitivity that enables individual A to predict accurately how

individual B feels toward him (A) is unrelated to the type of sensitivity that enables him to predict accurately how the entire group accepts B.

These two unrelated sensitivities, one of which is responsible for accuracy of predicting the object's feeling toward the subject and the other which is responsible for accuracy of predicting the other's sociometric status, seem to be accountable for the fact that there is no significant difference in the accuracy of the subject's perception of the object's attitude toward him whether he perceives positive or neutral-negative choice from the object.

Hypothesis on the relationship between mutuality and the accuracy of the subject's prediction of the object's attitude:

Hypothesis III predicted that there is a significantly higher accuracy of the subject's prediction of the object's attitude toward him when there is mutuality between them as contrasted with when there is not. The hypothesis was supported.

The effect of mutuality on the accuracy of prediction of the object's attitude toward the subject has already been examined and discussed. It was found that if congruency and mutuality of feeling are present between the subject and the object, then accuracy will occur. When congruency is singled out alone, however, the subject showed equal accuracy in predicting the object's feelings toward him whether

his prediction was congruent with his feeling toward the object or not. On the other hand, accuracy is considerably higher under conditions where the individuals have mutual feelings for each other. But why does mutuality alone increase accuracy while congruency alone does not? Why does the coexistence of mutuality and congruence increase accuracy to near perfection? These may be the questions which should be answered in future studies.

Hypothesis on the relationship between mutuality and the accuracy of the subject's prediction of the object's sociometric status:

Hypothesis VII predicted that there is no significant difference in accuracy of the subject's prediction of the object's sociometric status when mutuality does or does not exist between them. The hypothesis was supported.

The effect of mutuality on the accuracy of the subject's prediction of the object's attitude toward him has already been examined and discussed. (It was reported that the type of sensitivity which can predict another's feelings toward oneself is unrelated to the sensitivity which predicts group acceptance of an individual member.)

The accuracy of the subject's prediction of the object's feeling toward him largely depends on the coexistence of mutuality and congruency. When mutuality exists alone, the subject's perception of the object's attitude toward him still comes considerably closer to the object's

actual attitude. Since the subject's perception of the object's attitude toward him is unrelated to the accuracy of his prediction of the object's sociometric status, it is anticipated that there is little relationship between mutuality and the accuracy of the subject's prediction of the object's sociometric status.

Hypothesis on the relationship between the object's attitude toward the subject and the accuracy of the subject's prediction of the object's attitude:

Hypothesis IV predicted that accuracy of the subject's prediction of the object's attitude toward him will be significantly more accurate when the subject receives positive rather than neutral or negative choice from the object. The hypothesis was supported.

This hypothesis was based on the common sense notion that people are more receptive to a positive rather than a negative feeling from others. The present researcher has already reported that accuracy of the subject's prediction of the object's attitude toward him is almost perfect when the "positiveness" of attitude is added to the coexistence of mutuality and congruency. This indicates that the "positiveness" of the object's attitude plays an important role in the subject's prediction of the object's attitude. People do not always see the environment as it is but instead perceive it in terms of their own needs. Doubtlessly they become more receptive to others' positive rather than negative feelings toward them.

Hypothesis on the relationship between the object's attitude toward the subject and the accuracy of the subject's prediction of the object's sociometric status:

Hypothesis VIII predicted that there is no significant difference in accuracy of the subject's prediction of the object's sociometric status whether he receives a positive, neutral or negative choice from the object. The hypothesis was supported.

While the "positiveness" of the object's attitude toward the subject played an important role in his prediction of the object's attitude, it did not play any significant role in his prediction of the object's sociometric status.

In summary, it would appear then that accuracy of the subject's prediction of the object's sociometric status is unrelated to congruency, how the subject perceives the object's attitude toward him, mutuality and the object's actual attitude toward the subject. It may be concluded that the ability to predict another's sociometric status is unrelated to the like-dislike relationship between the person predicting and the person to be predicted.

Hypothesis on the relationship between the subject's self-confidence and the accuracy of the subject's prediction of his own sociometric status:

Hypothesis IX predicted that there is no significant difference in accuracy of the subject's prediction of his

own sociometric status whether he considers himself as enjoying a high, middle, or low sociometric status. The hypothesis was supported.

A facile generalization based on a doctrine of the defense of self-esteem might say that people who are insecure in themselves and in their interpersonal relationships with others might distort the reality and exaggerate their own popularity by recognizing only cues of acceptance from others while cues of rejection are perceptually denied as an act of ego defense. On the other hand some people may be overly sensitive to neutral cues because of politeness. Paranoid-like persons may be overly sensitive to cues of rejection. It may be considered that the self-awareness of one's own sociometric status is a function of the person chosen as well as the person choosing.

This part of the question should be answered, however, in future studies.

Hypothesis on the relationship between the object's sociometric status and the subject's prediction of the object's sociometric status:

Hypothesis X predicted that accuracy of the subject's perception of the object's sociometric status will be significantly higher when the object enjoys a high status rather than a low or middle status. The hypothesis was not proven but there was a tendency toward the prediction.

Ausuble (4) reported that the subject's ability to predict the sociometric rating received from others varies

directly with the sociometric status of the person perceived. The common sense notion of sociometric perception also says that it is easier to predict the sociometric status of members who enjoy very high or very low popularity.

The result in this study seems to indicate that the object's actual sociometric status is an important factor in the subject's prediction of the object's sociometric status. It is also considered, however, that other factors such as the object's self-confidence, his behavior in the group and his actual and perceived relationship may play a role just as important as the object's sociometric status. This point should be explored further in future studies.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This last chapter consists of three sections. In the first, a restatement of the problem is made. Its methodology and hypotheses are summarized. A series of findings and conclusions, resulting from an analysis of the data, constitute the second section. In the last section some implications and suggestions for further research are made.

Summary of Problem and Design

The Problem

In present-day studies of person-perception the issue of accuracy is often the focus of interest. The results of the studies have been inconsistent, however, and difficult to interpret. Consequently it is considered to be a relatively unexplored field in social psychology.

This study was especially designed to explore:

- 1) the relationship between the perceived like-dislike of two group members and the accuracy of their predictions of each other's feelings for one another;
- 2) the relationship between one's estimate of another group member's feelings toward oneself and the accuracy of that prediction;
- 3) the relationship between the actual like-dislike of two group members and the accuracy of their prediction of each other's feelings for one another;
- 4) the relationship between one's feelings for

another group member and the accuracy of that member's prediction of one's feelings;

- 5) the relationship between the perceived like-dislike of two members and the accuracy of their predictions of each other's popularity;
- 6) the relationship between one's estimate of another group member's feelings toward oneself and the accuracy of the prediction of that group member's popularity;
- 7) the relationship between the actual like-dislike of two members and the accuracy of their prediction of each other's popularity;
- 8) the relationship between one's feelings for another group member and the accuracy of that group member's prediction of one's popularity;
- 9) the relationship between one's estimate of his own popularity and the accuracy of that prediction;
- 10) the relationship between actual popularity in the group and the accuracy of another's prediction of that popularity.

Hypotheses

A hypothesis was formulated for each of the above described relationships. These hypotheses can be presented as ten different combinations between sociometric variables and the accuracy of the subject's prediction of them.

Hypothesis	Sociometric Variable (SV)	Accuracy of the S's Prediction (AP)	Existence of Relation between SV and AP
I	Congruency	S's prediction of O's attitude toward S	None
II	S's estimate of O's attitude toward S	S's prediction of O's attitude toward S	None
III	Mutuality	S's prediction of O's attitude toward S	Positive
IV	O's actual attitude toward S	S's prediction of O's attitude toward S	Positive
V	Congruency	S's prediction of O's sociometric status	None
VI	S's estimate of O's attitude toward S	S's prediction of O's sociometric status	None
VII	Mutuality	S's prediction of O's sociometric status	None
VIII	O's actual attitude toward S	S's prediction of O's sociometric status	None
IX	S's perceived sociometric status	S's prediction of own sociometric status	None
X	O's actual sociometric status	S's prediction of O's sociometric status	Positive

The Subjects

The forty-nine campers who served as the research subjects were boys ranging in age from eleven to thirteen, who were attending Camp Oakland, Oxford, Michigan. All the campers came to this camp through various social welfare agencies in Oakland County. All of the subjects were from lower socioeconomic backgrounds. Because of camp policy, the camp took new campers except a few special cases so that most of the campers were unknown to each other until they arrived at the camp. The proportion of Negro and Caucasian campers was nearly even. These forty-nine subjects were the oldest group of campers. They lived in three different cabins during different camping sessions. The number of campers in each cabin was fifteen, sixteen and eighteen respectively.

Collection of Data

Before starting the sociometric-like interview with the subjects, the researcher spent almost ten days exposing himself to the subjects in the camp site so that the subjects felt at home with him.

Each subject was then interviewed individually, answering to the sociometric-like questions. The subject was given the pictures of his cabin-mates and then was asked to sort them according to the instructions.

The picture-sociometric-like questionnaire consisted of three questions. First, the subject was asked to

indicate his feelings toward others. Next, he was asked to guess others' feelings toward him. Third, he was asked to guess others' sociometric popularity. In other words, the subject was asked to indicate "like", "dislike" and "neutral feeling" toward others and guess how others feel toward him. The subject was also asked to guess his own and others' sociometric popularity at three different levels such as high, medium and low. The subjects were interviewed once during the two-week camping session.

Treatment of Data

The sociometric data was transformed into matrices. Figures "1", "2", and "3" were given to "negative," "neutral", and "positive" choices or "low", "medium" and "high" popularities. The matrices were transformed into the combined relationship table which contained various sociometric variables for an individual and his relationship with each group member. From this table the accuracy of the subject's prediction of each object's sociometric attitude and status was easily obtained by subtracting the predicted value from the actual value.

To test all hypotheses, except hypothesis IX, Fisher's exact probability test was run on the data from each subject. The median test was used on the over-all data for hypothesis IX.

Both tests were used to determine whether a significant difference existed in the subject's prediction depending upon the presence or absence of two different levels of a

given sociometric variable. When Fisher's exact probability test was used for individual data, the chance probability of obtaining at least n statistics significant at the .05 level from the forty-nine calculated statistics was tested. When it was found to be beyond the .05 confidence, the chi-square model for testing the significance of combined result was used to test the overall significance of the final analysis.

Summary of Findings

1. Hypothesis I was supported. It was concluded that there is no significant difference in the accuracy of one's prediction of another's feeling toward him whether it is accompanied by congruent feeling or not. That is, if A feels chosen by B, A is no more accurate in recognizing B's feeling when A also chooses B than when A does not.
2. Hypothesis II was rejected. It was concluded that the accuracy of the subject's prediction of the object's attitude toward him is moderate but significantly more accurate when he perceives himself as receiving a "positive" rather than a "neutral-negative" choice from the object. That is, if A feels chosen by B, he is more accurate in recognizing B's feeling toward him than when he feels rejected by B.

It should be noted, however, that only 28% of the subjects were significantly more accurate in their guess of others' feelings toward them when they felt chosen rather than rejected.

3. Hypothesis III was supported. It was concluded that when a mutual feeling exists between individuals, one of them is significantly more correct in recognizing another's feelings toward him than when non-mutual feeling exists between them. That is, if A is chosen by B, A is more correct in recognizing B's feeling toward him when he also chooses B than when he rejects B.

It should be noted, however, that 49% of the subjects were significantly more correct in their guess of others' feelings toward them when they had similar feelings for each other.

4. Hypothesis IV was supported. It was concluded that the accuracy of the subject's prediction of the object's attitude toward him is moderate but significantly more accurate when he receives a "positive" rather than "neutral-negative" choice from the object. That is, if A is chosen by B, he is more correct in recognizing B's feeling toward him than when he is rejected by B.

It should be noted, however, that only 20% of the subjects were significantly more correct in predicting others' feelings toward them when they were chosen rather than rejected.

5. Hypothesis V was supported. It was concluded that there is no significant difference in accuracy of one's prediction of another's popularity whether there is a congruent feeling between them or not. That is, if A

feels chosen by B, he is no more correct in recognizing B's popularity when he also chooses B than when he rejects B.

6. Hypothesis VI was supported. It was concluded that there is no significant difference in accuracy of one's prediction of another's popularity whether one estimates himself as receiving a positive or negative feeling from another. That is, if A feels chosen by B, he is no more correct in recognizing B's popularity than when he feels rejected by B.

7. Hypothesis VII was supported. It was concluded that even when a mutual feeling exists between individuals, one is no more correct in his prediction of another's popularity than when no mutual feeling exists between them. That is, if A is chosen by B, he is no more correct in recognizing B's popularity when he also chooses B than when he does not.

8. Hypothesis VIII was supported. It was concluded that there is no significant difference in the accuracy of one's prediction of another's popularity whether he is chosen or rejected by the other. That is, if A is chosen by B, he is no more correct in recognizing B's popularity than when he is rejected by B.

9. Hypothesis IX was supported. It was concluded, therefore, that there is no significant difference in the

subject's prediction of his own sociometric popularity regardless of whether he perceives himself as enjoying "high" or "low" sociometric status. That is, if one thinks that he has a high popularity in his group, he is no more correct in recognizing his popularity than when he thinks he has a low popularity.

10. Hypothesis X was supported. It was concluded that the accuracy of the subject's prediction of the object's sociometric status is moderate but significantly more accurate when the object enjoys a "high" rather than "medium-low" sociometric status. That is, if B is popular, A is more correct in recognizing B's popularity than when B is unpopular.

It should be noted, however, that only 33% of the subjects were significantly more correct in their guess of others' popularity when the others were popular rather than unpopular.

Summary of Discussion

Congruency seems strongly associated with "subjectivity" and this probably leads the subject to inaccurate predictions. When the subject perceives a positive attitude from the object, it seems to lead him to a moderately more accurate prediction than when he perceives a neutral-negative attitude. When the subject perceives a positive attitude from the object which is accompanied with mutuality between them, it seems to increase further the accuracy of

the subject's prediction of the object's attitude toward him.

When the subject perceives a neutral-negative attitude from the object with whom he has a non-mutual relationship, his prediction of the object's attitude toward him often seems to be misleading. Furthermore, when the subject perceives a neutral-negative choice from the object, the presence of mutuality of feelings between them does not seem to lead the subject to greater accuracy in predicting the object's attitude toward him as it did when the subject perceived a positive choice.

When the subject perceives himself as receiving a positive choice from the object, it leads him to greater accuracy in predicting the object's attitude toward him only when mutuality of feelings exists between them.

When a dyadic relationship accompanies both a "positive" mutuality and a "positive" congruency, it is self-evident that the subject's prediction of the object's attitude toward him is 100 per cent correct. In other words, if the subject perceives himself as receiving a positive choice from the object and he also has a positive mutuality with the object, his prediction of the object's attitude toward him is always correct.

The researcher, therefore, examined to what extent the subject's prediction of the object's attitude toward him is significantly more accurate when the subject has both the mutual and congruent relationships with the object as

contrasted with when he does not. The analysis shows that thirty-nine out of forty-nine subjects (80%) were significantly more accurate in their predictions of the object's attitude toward them when they had both "mutual" and "congruent" relationships with the object as compared with when they did not. On the other hand, none of the subjects were significantly more accurate in their predictions of the object's attitude toward them when they had either "mutuality" and "congruency", or when they had neither as compared to when they had both. Ten out of forty-nine subjects (20%) did not show a significantly better accuracy in predicting the object's attitude toward them regardless of whether they had both "mutual" and "congruent" relationships with the object or not.

Ausubel (3, 4, 5, 6), Schiff (46), and Trent (65, 66) reported that the type of sensitivity that enables individual A to predict accurately how individual B feels toward him is unrelated to the type of sensitivity that enables him to predict accurately how the entire group accepts B. These two unrelated sensitivities, one of which is responsible for the accuracy of predicting the object's feeling toward the subject and the other which is responsible for the accuracy of predicting another's sociometric status, seem to account for the fact that there is no significant difference in the accuracy of the subject's prediction of the object's sociometric status regardless of whether he perceives himself as receiving a positive or neutral-

negative choice from the object.

It was found that if congruency and mutuality of feeling exist between the subject and the object, then accuracy of prediction occurs. When congruency is singled out alone, however, the subject shows no difference in his accuracy in predicting an object's attitude toward him regardless of whether or not he perceives the object's feelings toward him to replicate his own feelings for the object. On the other hand, accuracy is greater under conditions of mutual feelings between individuals. But why does the coexistence of mutuality and congruency increase accuracy to nearly perfect? These are questions which should be examined in future studies.

The accuracy of the subject's prediction of the object's feeling toward him largely depends on the coexistence of mutuality and congruency, especially the former. In other words, if mutuality exists, the subject's perception of the object's attitude toward him becomes closer to the object's actual attitude. However, since the kind of attitude the subject perceives from the object is unrelated to the accuracy of his prediction of the object's sociometric status, it is anticipated that there is little relationship between mutuality and accuracy of the subject's prediction of the object's sociometric status.

Common sense tells us that most people are more receptive to positive than negative feelings from others. It was also found in this study that the accuracy of the

subject's prediction of the object's attitude toward him is perfect when the positiveness of attitude is accompanied by the coexistence of mutuality and congruency. This seems to indicate that "positiveness" of the object's attitude plays an important role in the subject's prediction of the object's attitude. People probably do not always see the environment as it is but instead perceive it in terms of their own needs. Many of them probably become more receptive to another's positive rather than negative feeling toward them.

While the "positiveness" of the object's feeling or attitude toward the subject plays an important role in the subject's prediction of the object's attitude, it does not play any significant role in his prediction of the object's sociometric status. It would appear then that accuracy of the subject's prediction of the object's sociometric status is unrelated to congruency, the kind of attitude the subject perceives from the object, mutuality and the object's actual attitude toward the subject. It may be concluded, therefore, that the ability to predict another's sociometric status is unrelated to the like-dislike relationship between the person predicting and the person to be predicted.

The self-awareness of one's own sociometric popularity is unrelated to the accuracy of one's prediction of his sociometric popularity. One's subjectivity seems to play a large part in his prediction. It may be considered that

self-awareness of one's own sociometric popularity is a function of the person chosen as well as the person choosing.

The results in this study seem to indicate that the object's actual sociometric status is an important factor in the subject's prediction of that status. It is also considered, however, that other factors such as the object's self-confidence, his behavior in the group and his actual relationship with and perceived relationship of the group members may play a role just as important as the object's sociometric status. This point should be explored further in future studies.

Reconsideration and Implications for Further Study

The methodology used in this exploration of the relationship between feelings and perception of like-dislike and sociometric status has been limited. However, it proved complex enough to permit some quantitative measures from one specific point of view. But this study, as well as other similar studies, is just a starting point. It is clear that some detailed qualitative studies are necessary to uncover the variety of processes which the present researcher has treated. For example, nearly one half of the subjects were significantly more accurate in predicting the objects' feelings toward them when they had "mutual" rather than "non-mutual" relationships with the objects. The other half of the subjects, however, did not show a significantly better accuracy either when they had "mutual"

or "non-mutual" relationships with the objects. What accounts for such a difference? The present study does not answer this question. It may be partially solved by careful clinical interviews with the subjects on the nature of their choices and guesses and the cues used by them in predicting others' feelings toward them.

The present investigation has not limited the number of choices given and guessed by the subjects. It can be speculated that the mutual relationships of high priority choices would be stronger and therefore they would provide more salient cues as to a member's preferences than would the less intense relationships. The same logic may be applied to the mutually rejecting relationships though our culture definitely limits the expression of rejection and it may not provide the cues as clearly as would the positive relationships. This cultural modesty or politeness might have led the subjects to prefer the neutral over the negative choice. The researcher might have gained a clearer picture by limiting the subjects' responses to only the top three or four positive and negative choices.

While the common approach of sociometric studies is the description of structure, the present researcher intended to use a similar method to generalize the results for persons into indices of "tendency". Therefore, it was desirable to control certain situational factors for the indices to have the intended meaning. It has been noted that in the use of sociometric tests, the range and length

of acquaintance are not necessarily equal for all persons in a group. The researcher could not completely eliminate acquaintance prior to the camp. It would be desirable to control this condition of "prior" acquaintance in future studies.

The groups in the present research have been homogeneous with regard to age, sex and socioeconomic backgrounds. The researcher does not know what would happen to his findings if similar investigations were applied to different groups.

The data in this study were collected in one administration of the sociometric-like measures. It would be interesting to know if any tendencies of and relations between sociometric variables obtained are stable and general over repeated interviews in the same group and at different times in different types of groups.

It has been noticed that certain subjects showed consistent accuracy in their sociometric perception regardless of their relations with the objects, while some showed consistently inaccurate perceptions. It could be speculated that there are some other important related factors which may affect the subjects' accuracy of sociometric perception such as family background, intelligence, group experience, behavior and personality characteristics.

In the present study the researcher was simply concerned with the relations between various sociometric variables or relationships and the accuracy of perception. A question arises here as to what are the "independent

The researcher stated three of ten as directional hypotheses. Previous research led to the expectation that the null hypothesis should be accepted for the other seven hypotheses. These were tested with statistical models used to sense differences. To the extent that the sample size, and sensitivity of the models could be judged adequate to sense a difference that might be considered practically significant, one would argue that the test of these seven hypotheses in the null form is adequate. However, since this is a judgment difficult to make when the sample size is small and the metric without real meaning, the researcher recommends that further research in this area use correlational statistics so that the magnitude of the relationship may be judged and the inferential logic leads more clearly to specific conclusions.

APPENDIX

SOCIOMETRIC SCHEDULE

SOCIOMETRIC SCHEDULE

I would like to know how well you can tell how you feel about the boys in your cabin and how the boys in your cabin feel about you.

When we do things together with people, it is nice to know how we feel about them and how they feel about us, because then we can know better how to act with them.

It is quite natural that we like some people more than others. Some friendships take longer to develop than others. No one beside myself will ever see the answers, so don't be afraid to tell me what you really think.

There are three boxes here and you put the pictures of your cabinmates in these boxes. (Put the boxes and pictures in front of the subject.) It doesn't make any difference how many pictures you put in each box.

I. All right? Here is the first question. Put the pictures of the boys:

- a) Whom you like in the red box.
- b) Whom you don't like in the blue box.
- c) Whom you don't care whether you like or not in the white box. Before you start, would you tell me what you are supposed to do?

II. It is natural that we can't please everybody. In other words, some people like you more than others. Put the pictures of the boys:

- a) those you think would like you in the red box.
- b) those you think don't like you in the blue box.
- c) those you think don't care whether they like you or not in the white box. Before you start, would you tell me what you are supposed to do?

III. This time, I want to see how well you can tell how popular each boy is, that is, how many boys in the cabin like him. Put the pictures of the boys:

- a) whom you think that most of the boys in your cabin like in the red box (more than 10 boys).

- b) whom you think that very few boys in your cabin would like in the blue box (less than 5 boys).
- c) whom you think that about half of the boys in your cabin would like (between 6 and 9 boys).

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