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BALANCING IN GROUP DECISION MAKING.

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THIS STUDY WAS DESIGNED TO TEST THE THEORY THAT LABORATORY GROUPS MAKING COMPLEX DECISIONS WILL DISTORT THEIR PERCEPTIONS OF EACH OTHER IN WAYS PREDICTABLE FROM NEWCOMB'S A-B-X MODEL OF PERCEPTUAL DISTORTION IN WHICH "A" REPRESENTS THE PERCEIVING INDIVIDUAL, "B" REPRESENTS ANOTHER MEMBER OF THE GROUP, AND "X" THE ISSUES UNDER DISCUSSION. FOUR HYPOTHESES DEALING WITH PERCEPTUAL DISTORTION WERE TESTED IN SIMULATED SCHOOL BOARDS, EACH COMPOSED OF FOUR SUBJECTS AND A GRADUATE STUDENT, THE LATTER PLAYING THE ROLE OF A NONDIRECTIVE SUPERINTENDENT OF SCHOOLS. EACH SUBJECT RECEIVED COMMUNICATIONS FROM, AND REPRESENTED, AN INTEREST GROUP. EACH BOARD MET FOUR TIMES, AND, AT EACH MEETING, TWO DIFFERENT BUT INTERRELATED ISSUES WERE DISCUSSED AND DECIDED. SUBJECTS WERE ASKED TO RATE EACH OTHER, THE SUPERINTENDENT, AND THEMSELVES AT THE START, MIDDLE, AND END OF EACH MEETING IN RELATION TO A HYPOTHETICAL NORMAL DISTRIBUTION OF A REFERENCE POPULATION. THE TWO TYPES OF RATINGS MADE WERE (1) POSITION ON ISSUE AND (2) SOUNDNESS OF JUDGMENT. MIXED RESULTS WERE OBTAINED. IN FACT, ONE HYPOTHESIS WAS SIGNIFICANT IN THE OPPOSITE DIRECTION TO THAT PREDICTED, SO THAT THE STATIC CORRELATION BETWEEN PERCEIVED POSITION DISCREPANCY AND EXPERTISE IS HIGH AND NEGATIVE. FURTHER SEARCH FOR THE CONDITIONS WHICH LED TO THESE RESULTS WAS RECOMMENDED. (GD)

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University of Oregon
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Of the many studies which have been brought to bear on the balance theories in the last several years, one of the most realistic is Newcomb's (1961) study of the acquaintance process. Among other things, this experiment must surely become one of the classic studies of perceptual distortion. A small group of undergraduates living in the same rooming house made judgments of the value positions of the other group members. Only after they interacted for a period of weeks did the judgments which they were making begin to take on more than chance accuracy. This does not mean, of course, that their judgments were random during the early period of interaction. Instead, they were predictable from Newcomb's A-B-X model, for the subjects assumed that others whom they liked or who were similar to them on easily sampled superficial characteristics were also similar to themselves in basic values.

If individuals living together for a considerable period of time find it difficult to make accurate judgments of each other, it would be surprising if members of community decision making groups found it easy, for

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their interaction is often much briefer. Even the position taken by an individual on one particular issue, although undoubtedly more easily judged than a value orientation, may not become clear to all group members during the relatively brief discussion preceding many decisions.

Inaccurate judgments based on insufficient information should be susceptible to change through cognitive balancing. If this is the case, important consequences follow for the prediction of group decision making in naturalistic situations. It will not be possible to predict how one person will influence another simply through knowing his position and his social power over the other, as is implied in French's (1956) formal theory of social power. Instead, it will be necessary to know how the individuals misperceive each other in order to predict the effects of mutual influence.

Distortion of perception through cognitive balancing such as that postulated for community groups would take place in laboratory groups only if the groups were given problems of sufficient complexity and ambiguity to make perception of the positions of others problematical. Many studies directed towards other aspects of the decision making process have restricted subjects to selecting one of a very limited number of alternatives or to representing their positions vis-a-vis each other in quantitative terms which could not be easily misunderstood (Festinger and Thibaut, 1951; Asch, 1951; Sherif, 1958).

The present study was designed to test the idea that laboratory groups making complex decisions will distort their perceptions of each other in ways predictable from Newcomb's A-B-X model. As this model is applied to the experimental situation, A represents the perceiving individual (i.e. the respondent), B another member of the group, and X the issue currently under discussion. The relations between A and X and B and X, respectively, are the orientations toward the issue which A and B take, while the relation between A and B is A's judgment of B's expertise.

From the point of view of the experimenter, B has two orientations toward X: (1) that orientation perceived by A, and (2) that orientation as stated by B himself. When the former measure of B's position is included in the A-B-X model we use the term "individual system;" when the latter measure of B's position is included in the model, we use the term "collective system" (cf. Newcomb, 1961, pp. 9-12).

On the basis of this mapping of the experimental variables into the model, four predictions were made. Predicitions (1) and (2) are concerned with A's position movement in relation to B's position as a function of A's perception of B's expertise. Predictions (3) and (4) are concerned with A's changing of B's expertise as a function of the difference between A and B. There are two ways in which the position of A relative to B may be considered. In predictions (1) and (3), A's position on the issue is compared with A's <u>perception</u> of B's position. In predictions (2) and (4), A's position on the issue is compared with B's <u>actual</u> position (i.e. B's position as stated by B himself).

(1) If A considers B to be an expert on Issue X, he will move closer, over time, to the position which he <u>perceives</u> B to hold on that issue.

(2) Because A's perception of B's position is likely to be inaccurate, A's movement with respect to B's <u>actual position</u> will not appear to be as related to A's perception of B's expertise as is A's movement with respect to A's <u>perception</u> of B's position in prediction (1).

(3) If A <u>perceives</u> B to hold a position on issue X similar to his own, A will come to consider B to be high in expertise.

(4) Because A's perception of B's position is likely to be inaccurate, A's movement of B in expertise will not appear to be as related to the difference in positions <u>actually</u> held by A and B as to A's <u>perception</u> of the difference in positions held by A and B in prediction (3).

Procedure

The hypotheses were tested in simulated school boards, each composed of four subjects and a graduate student, the latter playing the role of a non-directive Superintendent of Schools. To make participation on the School Board a meaningful experience for the subjects, the conditions were made as realistic as the design permitted. Before the first group meeting, each subject read a fifty-five page description of his presumed community and its school system. This description probably gave him as intimate a knowledge of his community as a lower-level community leader would actually have. While subjects were not informed of the identity of the community and a few of its characteristics were changed enough to disguise it, the community described was the one Agger, Goldrich, and Swanson have called "Oretown" in <u>The Rulers and the Ruled</u> (1964).

In order to provide initial diversity of opinion of each of the issues to be discussed, each subject regularly received communications from an interest group to which he supposedly belonged. The four interest groups used were the Chamber of Commerce, Parent-Teachers' association, a labor union and the Taxpayer's League. While subjects could not always be assigned to the community group that was their first choice, they were rarely assigned to a group which they ranked lower than second. It was explained to them that although, as members of interest groups, they received communications from their groups, it was not expected that they would necessarily agree with the positions their respective groups took. The communications were arranged so that over the course of the experiment each interest group equally often agreed and disagreed with each other and with the Superintendent. One "member" of each interest group served on each School Board.

Each board met four times for one hour and forty minutes per meeting. At each meeting two different interrelated issues were discussed and decided. The data of the study were collected by means of ratings taken at the start (T1), at the middle (T2), and at the end (T3) of each meeting.

In order to give the subjects reasonably comparable experience with each other prior to each set of ratings, some constraints had to be set on their discussions of the issues. If either of the two issues had not been discussed after 30 minutes of interaction, the Superintendent brought up the issue which had not yet been discussed so that both would be discussed before the T2 rating at forty minutes. Furthermore, the group was prevented from resolving any issue prior to the T2 ratings.

The Superintendent played a non-directive role, speaking only to give requested information or correct any misconception about a matter of fact. He did, however, make an initial recommendation on how each issue should be resolved.

Ratings

Subjects were asked to rate each other, the Superintendent, and themselves in relation to a hypothetical normal distribution of a reference population. The ratings were worded in terms of the percentage of decision makers in all of the experimental groups who might be expected to hold a particular position less favorable (i.e. less in agreement with the Superintendent's recommendation) than the person being rated. The ratings were made on a form showing a normal distribution of the reference population.

This particular rating method was used to give subjects as comparable frames of reference as possible. As Cronbach (1955) has pointed out, raters differ in the means and standard deviations of the ratings they make under the same circumstances. In the present ratings, an attempt was made to equalize the means by providing a meaningful midpoint on the rating scale and to equalize the distribution of ratings around this midpoint by showing the frequency with which deviations of various magnitudes would be expected in a defined reference population.

Two types of ratings were made. On ratings of position on issue the subjects rated each other on the extent to which they favored one rather than another of two incompatible courses of action. One issue, for example, involved a question of salary increases for teachers. The question was, with only a fixed amount of money available, whether it was more important to raise salaries at the lower or the upper end of the salary scale. The midpoint of the rating scale, on this particular issue, would be the point at which these two matters are seen as being of equal importance, i.e. the proportional increase of salary with experience should remain the same as that in the salary schedule currently in effect.

The other type of rating was one of <u>soundness of judgment</u>. For these ratings the subjects were instructed to interpret the normal distribution in terms of what percentage of the time an individual was "correct" about what was best for the school district. The instructions stated that the issues confronting the board were so difficult that on the average individuals would only be correct about what was best for the school district half the time, only 20% of the individuals could be expected to be right 80% of the time, and so on down to the 1% of the subjects who could be expected to be sound in their judgment 99% of the time. In this case, then, the midpoint of the rating scale corresponds to making an equal number of correct and incorrect judgments.

The success of the rating technique in equating frames of reference was tested on <u>position on issues</u> ratings for seven School Boards (of a pilot study, Study I) by using the Superintendent as a standard stimulus. It was assumed that since the Superintendent took the same positions on the issues in all groups, differences among the subjects in their frames of reference for making ratings would be shown in how much subjects differed from one another in their ratings of the Superintendent. A set of corrected position on issue ratings, equalizing the way in which people used the rating scale, was made by multiplying each position on issue rating of each subject by the standard deviation of all subject's ratings of the Superintendent, measured from the arbitrary midpoint of the scale, and dividing by the standard deviation of that subject's ratings of the Superintendent, again measured from the midpoint of the scale.

If the rating procedure is successful in equalizing frames of reference, the uncorrected and corrected ratings should be highly correlated.

Since these ratings were correlated +.94, it was assumed that the rating method was successful enough to permit use of the uncorrected ratings. The basic data of the study are thus position on issue and soundness of judgment ratings made by each subject at the start (T1), middle (T2) and the end (T3) of each meeting.

Replications

Two replications of the study were conducted, the first (Study I) composed of seven 4-person boards and the second (Study II) composed of six 4-person boards. Because of slight differences in procedures of recruiting Ss and boards, the two replications are analyzed separately.

Male subjects were recruited by an advertisement in a campus newspaper and were paid sixteen dollars each for their participation. In the first replication a minimum grade-point-average was required for participation, while this requirement was not set in the second replication. Furthermore, while the junior author served as Superintendent of Schools for all of the boards in the first replication, another graduate student served as Superintendent for half of the boards in the second replication.

Specific Hypotheses

In what follows, each of the four hypotheses will be presented in general form, immediately followed by a statement of the way in which the hypothesis was tested.

(1) If A considers B to be an expert on issue X he will move closer to the position which he *perceives* B to hold on the issue. The average

rating for expertise which A gives to B will be higher among those Bs toward whose attitude position A moves between T2 and T3, and lower among those Bs away from whose attitude position A moves between T2 and T3. The number of cases in which this holds is the test of the hypothesis. B's position is taken as the average of A's T2 and T3 ratings of B's position.

(2) Because A's perception of B's position is likely to be inaccurate, A's movement with respect to B's <u>actual</u> position will not appear to be as related to A's perception of B's expertise as is A's movement with respect to A's <u>perception</u> of B's position in prediction (1). The difference between this hypothesis and hypothesis (1) lies in the usage of A's perception of B's position in (1) and in the usage of B's actual position in (2). There should be significantly fewer cases for (2) as compared with (1) in which the Bs towards whom A is moving have higher expertise on the average than the Bs away from whom A is moving. A's change is taken from T2 and T3 and B's position is taken as the average of B's T2 and T3 self-ratings.

(3) If A <u>perceives</u> B to hold a position on issue X similar to his own, A will come to consider B to be high in expertise. The average of the differences between A's position and A's rating of B's position on issue X at T2 will be less where A moves B up in expertise than where A moves B down in expertise between T2 and T3.

(4) Because A's perception of B's position is likely to be inaccurate, A's movement of B in expertise will not appear to be as related to the difference in positions <u>actually</u> held by A and B as to A's <u>perception</u> of the difference in positions held by A and B in prediction (3). There should be significantly fewer cases for (4) as compared with (3) in which

the B's whom A moves up in expertise are closer to A than the B's whom A moves down in expertise.

It seems well to summarize, in general terms, just what we are looking for in the way of evidence for these hypotheses and why. First of all, hypotheses (1) and (2) must be considered as a unit, and the same may be said of hypotheses (3) and (4). In hypotheses (1) and (3) the number of cases which satisfy the hypothesis must be greater than chance. In hypotheses (2) and (4), the number of cases which satisfy the hypothesis must be significantly less than in hypotheses (1) and (3) respectively. Why these tests are involved may be understood by imagining that we are testing one main hypothesis and two sub-hypotheses. The main hypothesis, which involves the comparisons of (1) with (2) and of (3) with (4) is as follows: balance occurs more frequently in the mind's eye of the perceiver ("individual system") than in the actual world ("collective system"). The two sub-hypotheses involve the fact that hypotheses (1) and (2) are seperate from hypotheses (3) and (4). The former test the proposition that predictions may be made concerning the position movement in the time of a particular person with respect to others in his group as a function of how that person rates the expertise of the others in his group. The latter test the proposition that predictions may be made concerning how one person will change the expertise of another in time as a function of the difference in position between the two people.

Results

Success of the experiment: We assumed, although there is some reason now to doubt it, that the conclusions drawn from the success of the pilot study (Study I) would apply to Study II as well. Two general aspects of the data indicate the success of Study I. First, correlations between A's own position at T1 with his position at T3 indicate that (a) change is taking place, and (b) the amount of change is different for each issue. This correlation ranges from .63 on the issue of whether to recruit teachers locally or nationally to -.13 on the issue of the site on which to build a new school. Secondly, as reported, the correlation between transformed and untransformed position ratings is +.94, indicating the success of our rating technique. These data were not computed for Study II.

Support for the static balance model: If we correlate A's perception of the B's expertise with A's perception of the distance between himself and B, we ought to find, if a balance model applies, that the greater the distance between A and B the lower the expertise rating of B -- a negative correlation. The correlations obtained for meetings in Study II range from -.25 to -.76. When we correlate A's perception of the B's expertise with the actual distance between A and B, the correlations range from -.03 to -.29. These data were not computed for Study I.

Two conclusions may be drawn from these data: (1) the generally negative correlation indicates that, at least at discrete points in time, the balance model applies to these data; (2) the generally greater correlation where the distance between A and B is perceived indicates that the individual system is more often in balance than is the collective system, a fact which supports balance theory.

The dynamic system: The data just presented are concerned with what we call the static system; i.e., the way the A-B-X system looks at discrete periods of time. Our greater concern, however, is with the dynamic system or the relationship, over time, between expertise and position discrepancy. We will be examining the data for both Study I and Study II. Two general questions of the study may be framed as follows: (1) Will A's rating of the expertise of B predict A's movement toward or away from B? (2) Will the difference in position between A and B predict how A changes his rating of the expertise of B?

Before we present the results obtained, an explanation of the designations used in the tables is required. There are three such designations: (a) There are data for the perceived position of B and for the actual position of B. (b) Data are presented separately for Study I and for Study II. (c) Since Study I utilized Superintendent G exclusively, the complete data are presented for Superintendents J and G combined, and for Superintendent G. Thus, in the tables, the data for Study I under J and G are the same data as for Study I under G, and are repeated under J and G in order to present an overall picture of data collected for both studies. For Study II, J and G refers to all data, and G refers to that data collected only by G.

The test of hypotheses (1) and (2) is presented in Table 1. The test of hypothesis (1) appears under the heading "perceived position" and the test of hypothesis (2) is a comparison of the data for "perceived position" and "actual position." The entries are the number of cases, of the total number, which satisfy the hypothesis. If the average expertise rating of the others towards whom A moves is higher than the average expertise rating of the others away from whom A moves, the hypothesis is said to be satisfied. The expectation is that the "perceived position" data will be significant in the predicted direction (at least 32/51), and that the number of cases in which the hypothesis is satisfied under "perceived position" will be significantly greater than the corresponding data under "actual position."

Table 1 about here

The overall outcome of hypothesis (1) (33/51) is significant, and that of hypothesis (2), as predicted, is also significant ($t_{obs} = 1.81$). A more detailed inspection of the table will, however, reveal that the results are mixed, Study I supporting the hypothesis and Study II not supporting the hypothesis. Further, when the data from Superintendent J are excluded (Supt. G), the hypotheses are strongly supported by the remaining data. Thus the data from one superintendent strongly support hypotheses (1) and (2), whereas the data from the other superintendent contradict these hypotheses.

Is there any reason to believe that there were differences between the two superintendents which might account for this difference in our data? We can think of only one: Superintendent J reported that he had to spend very little time explaining the rating instrument to his board members. He felt that the instrument was easy to explain and easy for his members to grasp. Superintendent G, on the other hand, felt just the opposite; i.e., that an understanding of the instrument was difficult to grasp, and that it was difficult to explain. Consequently, Superintendent G spent relatively more time explaining the instrument than did Superintendent J. Is this sufficient grounds for throwing out the results of Superintendent J? Probably not, since we have no conclusive evidence of how this difference may have affected our subjects.

But there is another reason, more compelling, for not eliminating the data for Superintendent J. That reason is found in the similarity of the results between Superintendent J and Superintendent G for hypotheses (3) and (4). The test of these hypotheses is found in Table 2.

The test of hypothesis (3) appears under the heading "perceived position" and the test of hypothesis (4) is a comparison of the data for "perceived position" and "actual position." The data are the number of cases, of the total possible number, which satisfy the hypothesis. Thus, if the average distance between A and the other is greater for people whom A moves down in expertise than for people whom A moves up in expertise, the hypothesis is said to be satisfied. The expectation is that the "perceived position" data will be significant in the predicted direction (at least 33/52) and that the number of cases in which the hypothesis is satisfied under "perceived position" will be significantly greater than the corresponding data under "actual position."

Table 2 about here

Here, neither the outcome of hypothesis (3) (17/52) nor the outcome of hypothesis (4) (difference not in predicted direction) is significant. Nevertheless the results are interesting because they lend support to the validity of the results for Superintendent J. That is, when we compare the data from Superintendent G with the data from Study II, J and G, we make a comparison between data excluding J and including J respectively. In Table 1 we note that the difference between "actual" and "perceived" is in the opposite direction when the data includes J from its direction excluding J. Having noted this, the reader will ask (as we have above) whether there is any reason to exclude the data from J altogether as invalid. Turning now to Table 2 it can be seen that any doubts as to the validity of the "J" data must be put aside. Here the data excluding J are essentially the same as the data including J.

Discussion

It is interesting to speculate on the reasons for the mixed results which we appear to have obtained. While the test of the hypothesis regarding the prediction of change in position from expertise (Table 1) yields different pictures of the two studies and the two superintendents, there is no such mixture of results for the test of the hypothesis regarding the prediction of change in expertise from position distance (Table 2).

There are at least two possible reasons for having obtained these results: (1) the question was formulated incorrectly, and/or (2) the measures used were inappropriate. Of these two reasons, there is greater room for error in the latter because there are many alternative ways of measuring movement for these data. For example, the measure of which people A moves toward and which people A moves away from has many alternatives. If we take as the position of B the average of his positions at T2 and T3, and then determine whether or not A moves toward or away from that average position between T2 and T3, then the position of B is absolute. If, however, we take as our measure the difference between A and B in position at T2 relative to this difference at T3 and say that A moves toward B if this difference is less at T3 than at T2, then the position of B is relative. In general, all measures of A's movement with respect to B can be seen as absolute, in which case we do not allow B to move, or relative, in which case we allow B to move.

Within each of these categories there are many variations. We chose the absolute measurement given in the above example. We might have chosen the absolute position of the other at T3 instead of the average of his T2 and T3 positions. The rationale for choosing the former was as follows: In making his expertise rating of B, A is not able to perceive the total movement of B, but rather perceives some value which is in between the total movement. It is this value which affects B's rating of the other on expertise. One problem which arises here is that, although the measure used may be as good a measure of B as any when we are referring to the actual position of B, it might seem more reasonable to use as values of B's position those values which A assigns to B at T3 when we speak of the position of B as perceived by A.

Conclusions

The value of this particular piece of research lies in its stimulation of more research. As an example, it seems well to discuss our further thinking about the results in Table 2.

As has been pointed out above, the result of hypothesis (3) as tested in Table 2 is "significant" in the opposite direction to that predicted. Let us assume for the moment that this result would be obtained in any number of replications of this experiment. The question is, what might be the reason for the result?

(1) We know that the static correlation between perceived position discrepancy and expertise is high and negative.

(2) Therefore, people that are low in expertise have to be disagreeing with A, and people that are high in expertise have to be agreeing with A at any one moment.

(3) B may either change or not change his position on the issue from T2 to T3.

(4) If B changes his position between T2 and T3, then A's rating of B's expertise will also change.

(a) If B comes to agree with A, then A will raise B's expertise.

(b) If B comes to disagree with A, then A will lower B's expertise.

(5) Let us now postulate that if B does not change his position appreciably with respect to A, then A will neither raise nor lower B's expertise appreciably (a testable hypothesis).

(6) Let us also postualte that if B disagrees (on the issue) with A at T2, and comes to disagree more by T3, A will not lower B's expertise appreciably. Postulate further that if B agrees with A at T2, and comes to agree more by T3, A will not raise B's expertise appreciably. These are, in fact, testable hypotheses; they rest on the theoretical assumption that A has placed B as far down or up on expertise as he is willing to by T2.

(7) Under the above circumstances, the only appreciable change in A's expertise rating of B will occur (a) when B is far from A in position at T2 and moves toward A from T2 to T3, in which case B will be moved up in expertise; (b) when B is close to A in position at T2 and moves away from A from T2 to T3, in which case B will be moved down in expertise.

The above arguments can be diagrammed in the following way:

Figure 1

	B is Low in Expertise at T2 and disagrees with A		B is High in Expertise at T2 and agrees with A	
Between T2 and T3 B can come to:	agree	no change or disagree more	disagree	no change or agree more
With this resulting change in A's rating of B's expertise:	moved up	no change	moved down	no change

If this is the case, then when B is far from A (i.e., disagrees with A) at T2 he will be moved up, and when B is near to A at T2 he will be moved down; exactly the result which we appear to have obtained in Table 2.

More than a century ago, Claude Bernard, a famous French physiologist, discovered that by puncturing the fourth ventricle of a rabbit, he could induce artificial diabetes. Bernard reports that he repeated this experiment eight or ten times afterward without result. Yet, he says, "I never thought of denying my first positive experiment in favor of the negative experiments which followed it. Thoroughly convinced that my failures were due only to not knowing the true conditions of my first experiment, I persisted in experimenting, to try to discover them." Bernard's story is a happy one, because he did succeed in finding the "true conditions" of his first experiment. Bernard's conclusion is appropriate:

> Let me assume that, instead of succeeding at once in making a rabbit diabetic, all the negative facts had first appeared; it is clear that after failing two or three times, I should have concluded, not only that the theory guiding me was false, but that puncture of the fourth ventricle did not produce diabetes. Yet I should have been wrong. How often men must have been and still must be wrong in this way! It even seems impossible absolutely to avoid this kind of mistake.

As did Bernard, we hope to be able to continue our search for the conditions which led to the results we have obtained. Thus, support we find for a static balance model convinces us that we will be able to also find support for a dynamic balance model. In this way the data may be used to find the best way to measure certain variables of the model, and thus serve as a starting point for further research in this area.

Table 1

Change in A's position
relative to B's actual or perceived position
as a function of B's expertise

	Superintendents J & G		Superintendent G	
	Actual position	Perceived position	Actual position	Perceived position
Study I	8/28	21/27	8/28	21/27
Study II	14/24	12/24	5/8	6/8
Totals	22/52††	33/51**	13/36†	27/35*

* Significant at .003

** Significant at .024

† Difference between perceived and actual significant:
$t_{.99}\ (8) = 2.90,\ t_{obs} = 3.47$

†† Difference between perceived and actual significant:
$t_{.95}\ (12) = 1.78,\ t_{obs} = 1.81$

Table 2

Change in B's expertise
as a function of the distance
between A and B's actual and perceived position

	Superintendents J & G		Superintendent G	
	Actual position	Perceived position	Actual position	Perceived position
Study I	14/28	10/28	14/28	10/28
Study II	10/24	7/24	2/8	2/8
Totals	24/52	17/52	16/36	12/36

REFERENCES

Agger, R. E., Goldrich, D., and Swanson, B. E. The Rulers and the Ruled. New York: John Wiley and Sons, Inc., 1964.

Asch, S. E. "Effects of group pressure upon the modifications and distortion of judgments." In H. Guetzkow (ed.), Groups, Leadership, and Men. Pittsburgh: Carnegie Press, 1951.

Chronbach, L. J. Processes affecting scores on "understanding of others" and "assumed similarity." Psychol. Bull., 1955, 52, 177-193.

Festinger, L. and Thibaut, J. Interpersonal communication in small groups. J. Abnorm. Soc. Psychol., 1951, 46, 92-99.

French, J. R. P., Jr. A formal theory of social power. Psychol., Rev., 1956, 63, 181-194.

Newcomb, T. M. The acquaintance process. New York: Holt, Rinehart & Winston, Inc., 1961.

Sherif, M. "Group influences upon the formation of norms and attitudes." In E. Maccoby, T. Newcomb, and E. Hartley (eds.), Readings in Social Psychology. New York: Henry Holt & Co., 1958.