Group opinion change as a function of circular vs rectangular seating arrangement¹

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Group opinion change was investigated as a function of an organized minority under circular and rectangular table arrangements. It was hypothesized that there would be less opinion change in a circular setting because of the equivalent spatial distance between all group members. The results did not indicate any differences between the two spatial arrangements, but a statistically significant opinion shift occurred under each condition.

In a review of studies on small group ecology Sommer (1967) has pointed out that investigators have only recently begun to design experiments with spatial arrangement as an independent variable. The general results of these studies have shown that spatial arrangement affects communication, friendship, and status differentiation between individuals. In turn, arrangement is a function of variables, such as group task, space, and interpersonal relationships. One specific line of research has focused upon the relationship of fixed seating locations and influence within the group. For example, in a study of small discussion groups seated around a rectangular table, Sommer (1961) found that leaders tended to assume either of the two end positions. Strodbeck & Hook (1961) in an investigation of the seating positions of a 12 man jury found that the person chosen as foreman most often was seated at one of the end positions of a rectangular table. It was also noted that jurors in the managerial and professional occupations were selected as foremen by far greater than chance frequency. When the jurors were asked which member contributed most to the group's decision, the people at the end positions were chosen more often than people at the sides. The results of these studies provide consistent evidence that people seated at head positions have more influence than people seated at side positions, and people of high status tend to gravitate to the kind of spatial position that is commensurate with social influence.

The purpose of this study was to investigate resistance to social influence in a small group situation as a function of seating arrangement. The ecological variable of a circular- vs rectangular-seating arrangement was selected because this provides for a comparison of the presence or absence of end positions. It was hypothesized that there would be more resistance to social influence in a circular table setting where all seats have the same physical relationship to one another. The social influence situation selected was an adaptation of the procedure Harnack (1963) employed in investigating the effect of an organized minority upon a group discussion. Using 20 groups composed of two confederates who attempted to change the opinions of four naive Ss, Harnack found a significant difference between pre-discussion and post-discussion group scores. The specific hypothesis of the present study was that there would be less opinion change produced by an organized minority in a circular table setting than in a rectangular table setting. Although Sommer (1961) has suggested that the use of a round or square table might enhance group spirit or cohesiveness, there has been no investigation of how social influence might be affected by table arrangement. In line with this suggestion, the round or circular table situation is seen as one that would increase the impact of a majority opinion, thus lessening the effectiveness of a minority attempt to produce opinion change.

SUBJECTS

The Ss in this study were 64 male volunteers drawn from several sections of an introductory psychology course at the State University of New York at Albany.

PROCEDURE

The procedure generally followed that of Harnack (1963), except that the experimental design included the comparison of

two seating conditions. As in the original study, two experimental confederates interacted with four naive Ss in a group discussion situation. In one condition the six group members were seated around a six-sided table and spaced equidistant from one another constituting the circular seating arrangement. In the other condition the six group members were seated around a rectangular table with four side and two end positions.

The 64 Ss were randomly assigned to one of the two experimental conditions and scheduled in groups of four. Each of the four Ss within a given group was chosen from a different course section to control for previous acquaintanceship and to insure the impression that the two confederates were students from other sections. A total of 16 groups was used, eight in each experimental condition, with each group composed of four naive Ss and the two experimental confederates.

Both the naive Ss and confederates arrived at the experimental room at the same time. They were instructed to pick one of six envelopes which were on a table in order to determine their seating positions. The confederates knew the arrangement of the numbers in the envelopes and were chosen to pick first by the E to insure that they would be sitting in positions that were opposite to each other. In the rectangular table condition the confederates were seated at the two end positions, while in the circular table condition they were seated across from one another at any of the two parallel sides of the table. The spatial relationship between the two confederates was thus held constant across the two situations.² The physical distance between the two confederates was also held constant across conditions as the length of the two far sides for each table type was approximately 5 ft.

Once the Ss were seated the E informed them that he was interested in obtaining student opinions as part of a research project he was conducting. As in Harnack's (1963) study a hypothetical case was read and the group members were asked to discuss and decide which of seven alternative courses of action should be taken. Harnack made use of the "Johnny Rocco" case that had originally been used by Schacter (1951). For the present study a case was developed which involved a college professor who concentrated on teaching but neglected research and publication. The issue raised was what action should be taken with respect to the professor since his college administration considered research and publication as important as teaching. This case was constructed for the present study because it provided a pertinent situation for college students to discuss. After the case was read, a questionnaire listing seven alternative courses of action ranging from commendation to dismissal was passed out to the group members. The Ss were instructed to choose one of the alternative responses. E then collected the questionnaires and read back to the group the responses for each S, including the fictitious responses for the two confederates. Following the Harnack procedure one of the confederates (the mode) received the modal score of the group, while the other (the deviate) received a score which was most distant from the modal score. The Ss were next told that they would have 25 min to arrive at a group opinion concerning the case. E placed a questionnaire on the table with "group opinion" marked on it, and the Ss were instructed to proceed as they saw fit. During the 25 min discussion period the mode and deviate confederates engaged in their respective roles which first involved each maintaining his opinion position, but in the last 10 min called for the mode to switch to the deviate's position and at the same time persuade the four naive Ss to do likewise. By the end of the discussion the two confederates agreed upon the next to the most extreme position, i.e., two or six. (A score of one represented commendation, while a score of seven represented dismissal.) At the conclusion of the discussion period the group score was requested. The confederates tried to get a unanimous decision from the naive Ss; but if this could not be reached, a majority vote was accepted. Each of the group members

was instructed to record his vote on the "group opinion" questionnaire. Before leaving the experimental session, the purpose of the study was explained to the Ss.

RESULTS AND DISCUSSION

Medians for the pre-discussion and post-discussion scores were calculated for each of the 16 groups. These medians were then used in calculating the overall medians for the eight rectangular and the eight circular pre- and post-discussion scores. For the rectangular condition the following medians were obtained: pre-discussion, 3.0; post-discussion, 5.5; median difference, 2.50. For the circular condition the following medians were obtained: pre-discussion, 2.75; post-discussion, 5.00; median difference, 2.25. Using the median test a nonsignificant χ^2 of .067 was obtained. These results indicate that the seating arrangement had no effect on opinion change.

For each of the two seating conditions a chi-square analysis was used to determine the extent of pre- and post-discussion opinion change. Pre-discussion scores for each S were used as the expected frequencies, and post-discussion scores for each S as the observed frequencies. A significant opinion shift was obtained for both the rectangular seating arrangement ($\chi^2 = 214.233$, $p < .001$), and the circular seating arrangement ($\chi^2 = 103.634$, $p < .001$). The direction of the opinion shift for all 16 groups was towards the punitive end of the seven sets of alternatives, and 54 out of the 64 Ss shifted their scores in this direction. The other 10 Ss maintained their pre-discussion scores. For the post-discussion score none of the groups achieved a unanimous score of six which was requested by the confederates. However, 13 out of the 32 Ss (41%) in the rectangular condition endorsed a score of six while eight out of the 32 Ss (25%) in the circular condition endorsed a score of six. This latter finding does suggest a trend for somewhat greater resistance to the pressure for unanimity under the circular seating arrangement.

These results indicate that the effects of an organized minority to produce opinion change in a group discussion situation are

successful regardless of the seating arrangement, and thus add further support to Harnack's (1963) findings. There is, however, some suggestion of greater resistance to the pressure for unanimous agreement under the circular condition, albeit slight due to the acceptable alternative of a majority vote. It is possible that seating arrangement may have an effect on resistance to opinion change for larger size groups where the nature of the spatial relationship among a large number of group members may be more salient in counteracting or not counteracting the influence attempts of a minority. One such example would be a 12 man jury situation in which the role of the foreman's influence might be reduced in a square or round table arrangement as opposed to the standard rectangular arrangement. It is also possible that table arrangement may be a factor affecting influence in groups where no leader or confederate has been selected before the discussion period.

REFERENCES

- HARNACK, R. V. The effect of an organized minority upon a discussion group. *Journal of Communication*, 1963, 13, 12-24.
- SCHACTER, S. Deviation, repetition, and communication. *Journal of Abnormal & Social Psychology*, 1951, 46, 190-207.
- SOMMER, R. Leadership and group geography. *Sociometry*, 1961, 24, 99-110.
- SOMMER, R. Small group ecology. *Psychological Bulletin*, 1967, 67, 145-152.
- STRODTBECK, F. L., & HOOK, L. H. The social dimensions of a twelve man jury table. *Sociometry*, 1961, 24, 397-415.

NOTES

1. The authors are grateful to Paul Michel and Robert Reid for their help in carrying out the study.
2. Harnack allowed his Ss a freely mixed seating pattern, so the positions of his confederates were not constant across groups.