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ABSTRACT

THIS STUDY INVESTIGATES SEATING DISTANCE AND ANGLES OF LOCATION AND ORIENTATION IN A CONVERSATIONAL SITUATION AS A FUNCTION OF SEVERAL VARIABLES: ATTITUDINAL AGREEMENT OR DISAGREEMENT BY A STRANGER, AGREEING OR DISAGREEING NORMATIVE INFORMATION, AND PERSONALITY VARIABLES. SUBJECTS WERE 52 RANDOMLY SELECTED INTPODUCTORY PSYCHOLOGY STUDENTS FROM THE UNIVERSITY OF ILLINOIS. THE PERSONALITY MEASURES USED WERE THE NEED AFFILIATION SCALE FROM THE EDWARDS PERSONAL PREFERENCE SCHEDULE, THE FIRO INCLUSION SCALES, A SOCIAL MALADJUSTMENT SCALE FROM THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY, THE INTERNAL-EXTERNAL CONTROL SCALE, AND AN ATTITUDE SURVEY. SUBJECTS HIGH IN AFFILIATION OR INCLUSION SAT CLOSER, MORE TO THE SIDE, AND LOOKED MORE DIRECTLY AT THE STRANGER. IN TERMS OF MANIPULATED SELF-ESTEEM OR UNCERTAINTY AROUSAL, WHEN DISAGREED WITH BY NORMATIVE INFORMATION, SUBJECTS SAT FARTHER AWAY WHEN THEY WENT IN TO MEET THE STRANGER THAN WHEN THEY HAD RECEIVED NORMATIVE AGREEMENT. (EK)

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Attraction and Interpersonal Behavior

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The research I would like to present as it turned out, has more to do with interpersonal behavior than interpersonal attraction. It is a preliminary study of interpersonal distance or the use of interpersonal space as a function of attraction, uncertainty arousal, and personality variables. A considerable amount of research has been done on the personal use of space, so much so that Robert Sommer at the University of California has recently written a book called Personal Space: The Behavioral Basis of Design (1969). Most of the work in this area has sought the normative distance and angle of preferred interaction under varying conditions such as size of room or shape of table. As Sommer points out in his book, many of these facts have practical implications for architecture and the design of public places such as airport waiting rooms and libraries where many people desiring minimal interaction must be accomodated or of meeting rooms where maximal interaction is desirable. Thus, for example, here at the University of Texas Academcic Center, the ordinary library tables have low partitions which minimize the visual and psychological presence of neighbors making it unlikely that every second seat will remain unused as in traditional libraries.

Some research has also focused on the effect of situational variables on interpersonal distance; for example, two people in a conversation will sit closer together in a large hall than in a living room (Sommer, 1969). Less research has been conducted on the effects of personality variables and interpersonal feelings on preferred distances. One study of seating and similarity-dissimilarity of status found that subjects sat at a table closer to peers than to those of either higher or lower status (Lott & Sommer, 1967). A couple of investigators have also found distance effects by having subjects enter a room with a folding chair (Rosenfeld, 1965) or sit in a swivel chair (Mehrabian, 1968) so as to display friendliness and unfriendliness or liking and disliking toward a real or imaginary other. But as far as I can tell no research has sought to induce attraction and dislike and look at space usage.

The present research investigated seating distance and angles of location and orientation in a conversational situation as a function of several variables: attitudinal agreement or disagreement by a stranger, agreeing or disagreeing normative information, and personality variables. The personality measures included the Need Affiliation scale from the EPPS, the Firo Inclusion scales, a Social Maladjustment scale from the MMPI, and the Internal-External Control scale. The investigation was considered exploratory, but it was expected that agreeing strangers would elicit more liking, closeness, and directness than disagreers. It was felt that normative agreement and disagreement would bias responses to all strangers positively and negatively respectively. This effect would confirm Griffitt's (1968) finding

of associated reinforcement effects in which attraction toward another is influenced by reinforcement associated with but not attributable to him. Other possibilities were that normative disagreement would act as a drive variable intensifying the discrimination between agreers and disagreers or that it would act as a self-esteem manipulation making responses to agreers and disagreers more tentative. Finally it was predicted that high need affiliation and desired inclusion would increase closeness and directness.

Method

The subjects were 52 introductory psychology students from the University of Illinois selected randomly by computer, within sex and time availability. Two weeks after filling out the personality scales and an attitude survey with 24 six-point items, subjects returned in groups of 4. They were each exposed to a copy of the attitude survey on which a bogus stranger had responded to 12 of the items. The experimenter indicated that the stranger had been instructed to fill out only half of the survey. Beside the remaining 12 items appeared endorsement percentages for the pro and con side of each issue which were supposedly the norms for the larger group in which the subject had initially taken the survey. To insure that subjedts attended to the normative information, they were asked to place an "X" on the majority side of the issue to indicate the extremity of opinion most people had checked. They were then to re-read the surveys, this time

noting the responses of the stranger. Thus, with two levels of stranger agreement (.20, .80) and two of norm agreement (.20, .80) the data formed a 2 x 2 design with 13 subjects per cell. Attraction toward the stranger was measured by the Interpersonal Judgement Scale with instructions similar to those used previously (Byrne, 1961).

After collecting the attraction data, subjects were taken one at a time to a nearby room to meet the person whose attitudes they had seen. The room was 14 x 15 feet and was empty except for two chairs, one of which was in the center rear of the room with a raincoat draped over it and an introductory psychology book beside it. The experimenter left supposedly to see what had happened to the other subject, but as he exited he suggested pulling the second unoccupied chair over to prepare for the conversation. After a few moments the experimenter returned to say that the other person had not shown up, dismissed the subject, and measured the distance between the chairs, and two angles. The angle of location was the extent to which the subject located his chair to the side or in front of the stranger, and the angle of orientation was the extent to which the chair was oriented facing the stranger regardless of location.

Results and Discussion

The means of the four dependent measures are presented in Table 1. Analyses of variance were performed for each measure to assess the effects of sex of subject, stranger agreement, and normative agreement.

Attraction.

The only significant influence on the attraction measure was the variable of stranger agreement, which was a strong one ($p < .001$) accounting for 26% of the variance. The F's for normative agreement and the interaction were both less than one indicating very little influence. We had expected to find the associated reinforcement effect shown by Griffitt in several studies (e.g. Griffitt, 1968). In addition to their own agreement or disagreement, strangers were associated in time with either normative agreement or normative disagreement, but the subject's attraction to the stranger was not influenced by these associated events.

Seating Behavior

The mean preferred seating for all 52 subjects was at a distance of 38 inches or slightly over 3 feet from chair front to chair front, located at an angle of 54 degrees to the side of the stranger's chair and oriented 18 degrees forward from facing the stranger's chair. The angle of location was correlated -.40 with distance indicating that the closer subjects placed their chairs to the stranger's, the more they put it to the side. There are probably two factors in this relationship, one of which is an artifact of the starting place of the chair off to the left rather than directly in front of the stranger's chair. Thus as the chair was moved directly forward both nearness and angle of location increased. The more psychologically relevant factor accounting for the negative relationship

between distance and angle of location is that a trade-off may be required as one person moves closer to another to avoid excessive intimacy, so that distance may be thought of as the primary dimension and angle of location as a consequence to some extent. That is, one may comfortably move closer to another person from the side than from the front. This effect is consistent with another study (McBride, King, & James, 1965) finding greater GSR responsiveness to frontal than to side approaches by others.

Normative Agreement.

Analyses of the subject's chair placing behavior showed significant effects due to normative agreement but not to stranger agreement. Thus, the subjects who were led to believe that most people agreed with their views sat 10 inches closer than those who received normative disagreement ($F = 5.5$, $df = 1/48$, p .05, $w^2 = .08$). The most satisfactory explanation of this effect seems to be based on lowering of self-esteem, effectance or uncertainty arousal, or some similar concept. Having been disagreed with by a high percentage of their peer group on a number of issues, the norm disagreement subjects presumably entered the room in a state of uncertainty with evidence of their own incompetence. Consequently they tended to sit farther away from the stranger.

This effect is consistent with the results of another experiment in which students sat farther away from their instructor's desk for a conference if they had been told they were doing poorly in the course than if they had received either neutral feedback or praise (Leipold, 1963).

Stranger Agreement.

Subjects did not discriminate between agreeing and disagreeing strangers in terms of seating distance. Attraction and distance were uncorrelated in the disagree group and show only a slight trend for liking to decrease interpersonal distance in the agree group (r = -.16). There was also nc relationship between attraction and the angles of location and orientation in the disagree group, but there was a relationship (r = -.36) at approximately the .05 level in the agree group between attraction and angle of orientation. Thus, subjects who liked the agreer most were somewhat more likely to face him regardless of where they were in the room.

A possibility which is now being pursued is that the present procedure worked against spatial effects due to differences in attraction toward the stranger by structuring the interaction as a conversation for which there may be a relatively fixed distance regardless of attraction. In addition, the procedure may have made the subject hyper-aware of himself by requiring him to enter the other subject's room and pull up a chair for himself. In a current study we have the subject arranging a chair for the stranger in his own territory and the nature of the interaction is left up to the subject.

Perscnality.

There was great individual variability in where subjects placed their chair; and it seemed likely that one of the factors would be differences in Need Affiliation and habitual ~~desire for~~ expressed Inclusion.

Consistent with these expectations the Need Affiliation scale from the EPPS was significantly negatively related to distance so that affiliative subjects sat closer (r = -.27, p = .05). Although need affiliation was negatively related to distance in every condition, this was especially true for subjects confronting the agreeing stranger (r = -.52, p < .01). This finding is corroborated by consistently negative correlations between distance and the Firo scale of ~~Desired~~ Expressed Inclusion (r = -.24, p < .10) which is conceptually related to affiliation but is statistically independent of the affiliation scale (r = .06). Correlations between distance and the Firo scale of ~~Expressed~~ Desired Inclusion are also consistently negative, although significant only in the positive norm condition (r = -.39, p < .05).

Considering the angles of interaction, affiliation is generally positively correlated with angle of location, a tendency which is strong and significant at the .01 level in the Agree condition (r = .59). Thus, along with the tendency of affiliative subjects to sit closer, they sit to the side rather than directly in front of the stranger. This was an unexpected finding, but apparently sitting indirectly is necessary to get as close as affiliative subjects desire. The Firo Inclusion scales do not show a comparable influence on the location angle, but scores on these scales are consistently negatively related to angle or orientation (r = -.31, r = -.13), significantly so for ~~Desired~~ Expressed Inclusion (p < .05) and for both scales among subjedts in the disagree condition. Thus, the more the ~~Desired~~ Expressed (r = -.51, p < .01) and ~~Expressed~~ Desired Inclusion (r = -.39, p < .05), the more directly the subject orients himself toward the stranger especially if he disagrees; that is,

they look at the other person or in the case of the disagreer perhaps we should say they keep their eye on him.

Finally, the Internal-External Control Scale was also administered without any clear expectation. The most consistent relationships that emerged were with angle of location. A significant negative correlation at the .05 level (r = -.27) across all subjects indicates that subjects who believe that what happens to them is externally controlled by luck had a greater tendency to sit directly in front of the stranger. An interpretation consistent with the test theory would be that he allowed the situation to determine where he sat and plopped himself down in front of the other person rather than manipulating the situation by sitting to the side.

In summary, we found that aspects of the subject but not of the stranger influenced his sitting behavior. Subjects high in Affiliation or Inclusion sat closer, more to the side, and looked more directly at the stranger. Also in terms of manipulated self-esteem or uncertainty arousal, and this was the strongest effect, when disagreed with by normative information subjects sat farther away when they went in to meet the stranger than when they had received normative agreement.

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Table 1

		stranger Agree	stranger Disagree	
norm Agree	Attraction	10.7	7.1	8.9
	Distance	34.8	30.5	32.7
	Orientation Angle	30	40	35
	Location Angle	62	55	58
norm Disagree	Attraction	10.2	7.8	9.0
	Distance	41.5	46.8	44.2
	Orientation Angle	22	28	25
	Location Angle	55	47	51
	Attraction	10.4	7.5	
	Distance	38.2	38.7	
	Orientation Angle	26	34	
	Location Angle	59	51	