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Interaction tendency as a determinant of personal space.

Susan Carol Lehtinen
University of Massachusetts Amherst

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INTERACTION TENDENCY AS A DETERMINANT
OF PERSONAL SPACE

A Thesis Presented
by
SUSAN CAROL LEHTINEN

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INTERACTION TENDENCY AS A DETERMINANT
OF PERSONAL SPACE

A Thesis
by
Susan C. Lehtinen

Approved as to style and content by:

[Signatures]

(Chairman of Committee)
(Head of Department)
(Member)
(Member)

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ABSTRACT

This study examined the utility of the concept of interaction tendency in explaining personal spacing behavior. Interaction tendency was defined as an aggregate of feelings about an interaction situation and as a mediator between personal spacing behavior and the kind of associations connected with an interaction. It was hypothesized that as the positivity of the associations connected with an interaction increased, interaction tendency increased, and personal spacing decreased. Two levels of task (problem solving and conversation), two levels of associations connected with the task (positive and negative), and two levels of associations connected with the other interactant (positive and negative) were manipulated, and the resultant seating behavior was observed. It was found that the independent variables were not predictive of seating behavior. Confounding variables, such as the type of task, suspicion, and the lack of unidimensionality of interaction tendency variables were proposed as possible explanations of the results. The need for further research, including the need for consideration of an attitudinal approach, was discussed.
INTRODUCTION

Several studies have been conducted regarding the ways in which people use physical space when interacting with others. One focus of this research has been on the spacing, variously termed personal space or individual distance, which person's characteristically employ in interpersonal interactions. Sommer (1969) described personal space as an area with invisible boundaries surrounding a person's body into which intruders may not come. An individual's personal spacing refers to the distance he customarily maintains between himself and other people. An examination of the studies in this area reveals that they have not been guided by any general theory. Rather, they seem to have been exploratory in nature, examining only isolated aspects of personal space. Very few studies build on former findings. In this paper, a theoretical conceptualization of personal space is suggested and its usefulness is then examined in experimental research.

Basic theoretical conceptualization. Argyle and Dean (1965) suggested that affiliative motivation influences intimacy which influences several nonverbal behaviors. There is evidence, however, that other factors influence
personal space. Several studies suggest determinants of personal space that are not encompassed by Argyle and Dean's conceptualization. Liepold (1963) reported variations in personal spacing due to variations in amount of stress. Little (1965) reported variations in personal spacing associated with variations in the setting in which the interaction took place. Rosenfeld (1965) found variations in personal spacing associated with variations in approval-seeking instructions. Thus, there is evidence that several factors other than affiliative motivation or intimacy operate to influence personal spacing. A broader, more generally applicable conceptualization is presented here.

This conceptualization postulates that personal space is a function of the interaction tendency in the specific situation being considered. Interaction tendency is defined as the aggregate of feelings that an individual has about engaging in a given interaction. Interaction tendency may include such feelings as comfort, interest, enthusiasm, and self-consciousness. It is further postulated that these feelings are a function of the kind of associations (either experienced in the past or anticipated) connected with the interaction. Thus, a person's
feelings about a specific interaction are assumed to be a function of his past or anticipated future associations with the situation or similar situations. It is assumed that each feeling can be evaluated on a positive or negative dimension and that these feelings may be summed to yield an index of interaction tendency. Thus, our initial model is additive and assumes equal weightings of feelings.

Personal space is hypothesized to be an inverse function of interaction tendency. As interaction tendency becomes more positive, the distance maintained between interactants will lessen. As interaction tendency becomes more negative, the distance will increase. This relationship will be assumed to be linear - although limited by cultural norms (as discussed below).

The diagram below illustrates this relationship.

Personal space = f(Interaction tendency) = f(Association 1...n)

Methodologies in personal space research. Two methodologies used in studying personal space and other nonverbal behaviors have been distinguished by Duncan (1969), Ekman (1965), and Mehrabian (1968). Decoding, or structural
methodologies involve a situation where instances of different personal spacing behaviors are presented, and the subjects' interpretations of them are measured. The encoding, or external variable methodology involves subjects being placed in various experimental situations where their personal spacing is measured. This approach consists, in essence, of the application of traditional psychological methods to research on personal space.

These two methodologies suggest two aspects of personal space; a communicative aspect (it communicates something) and an indicative aspect (it is a consequence of certain determinants). The emphasis of the present research is on the indicative aspects of personal space, e.g. what determines personal spacing in a given situation.

There are two general types of dependent variables that experimenters have measured, in examining the indicative aspects of personal space. Some studies measure naturally occurring behavior - they measure the actual physical distance between interactants that result from the manipulation of certain external variables. Other studies are projective, using a figure placement technique, wherein different situations are described
to a subject, and he places figures where he perceives they would be located in such an interaction. The dependent measure here is the actual distance between the interactants. Examples of both of these types of dependent measures are discussed in the research reviewed below.

**Determinants of personal space.** Personal spacing determinants can be organized into four general categories; characteristics of the individual; cultural determinants; pre-existing attitude toward the interactant; and specific circumstances of the situation. The present research considers the fourth class of determinants. In the discussion that follows, the first three determinants are briefly discussed and the fourth determinant is considered in more detail.

**Characteristics of the individual.** Williams (1963), Liepold (1963), and Sommer (1967) reported that introverts placed themselves at larger distances from others than extroverts. If one views introverts as having less positive associations linked with interpersonal interactions than extroverts, then a lower interaction tendency and a greater interpersonal spacing tendency seem logical.
Several other characteristics of the individual have been related to personal space, including sex (Sommer, 1959), homosexuality (Kueth & Wiengartner, 1964), and mental illness (Horowitz, Duff, and Stratton, 1964; Sommer, 1959; and Ziller, Megas, and Decencio, 1964). These variables may also be conceived of as influencing interaction tendency.

**Cultural determinants.** One determinant of personal spacing is the culture within which it occurs. Hall (1959) noted the presence of implicit norms within any culture or subculture regarding the permissible ranges of distance between two speakers. Watson and Graves (1966) found less spatial distance with Arabs than with Americans, using Hall's (1963) classification scheme of closeness. The conceptual framework is applicable here in the sense that within a given culture, one would expect negative consequences to be associated with deviant personal spacing behavior, thus, individual's personal spacing behavior is shaped to conform to that of the culture's generally. In this case, spacing itself becomes the situation with which feelings are associated. As spacing approaches culturally appropriate distances, feelings are assumed to become positive. As spacing deviates from cultural
norms, feelings should become negative. Thus, the feelings associated with approximating and deviating from cultural norms may serve a homeostatic feedback function which would set limits on the range of personal spacing implied by our hypothesized inverse relationship between interaction tendency and personal space.

**Pre-existing attitude toward the interactant.**
Several studies examine the influence of past interactions and of previously formed attitudes of a subject toward an interactant upon resultant personal spacing. Several studies have looked at the degree of acquaintance of the interactants. Willis' (1966) experimenters recorded the distance between themselves and friends or strangers at the moment a conversation began. They measured the distance from nose to nose between themselves and the addressee. It was found that the experimenters were approached more closely by friends than by strangers. In a doll placement task, Little (1965) found that when a situation was described as involving friends, dolls were placed closer together than when it involved strangers.

Several studies looked at the subjects' previous experience with similar interactants. Campbell, Kruskal,
and Wallace (1966) and Kuethe (1964) found that prejudiced subjects placed figures of Blacks and Whites further apart of a figure placement task than did non-prejudiced subjects.

These studies suggest that an individual's past experience with an interactant, or with similar interactants, may determine his spatial behaviors toward that interactant, or his perceptions of spatial behaviors toward the interactant. When these experiences are positive, the individual's personal spacing is less distant. Positive past consequences result in greater interaction tendency resulting in a closer interpersonal spacing. These determinants of personal space are referred to as the general attitude that the interactant has toward the other individual, or individuals similar to him, up until the interaction being examined.

Specific circumstances of the situation. Although most of the research on personal space has been concerned with specific situational variables, this research has not been integrated into any general conceptual framework. The present research proposes to investigate a conceptualization that would integrate this large group of isolated studies.
The characteristics of the specific situations which influence spacing may be sub-grouped into two categories - specific socio-emotional determinants and specific situational determinants. The purpose of this grouping is to elucidate the function of personal space, as several studies offer support for determinants of personal space which clearly fall into one or the other of these categories. Those studies are discussed below, after a more objective definition of these terms is presented. Specific socio-emotional determinants are defined as the associations connected with the social and/or emotional aspects of a specific interaction. Likewise, specific situational determinants are defined as the associations connected with the specific situation, as the activity and the setting. These are assumed to be additive such that several associations may be summed to form a socio-emotional or situational determinant index.

Specific socio-emotional determinants. Several studies have used subjects who were initially strangers, thus, a general attitudinal disposition toward the specific individual was not a significant source of variance.
These studies provide support for the idea that personal spacing varies inversely with the positivity of associations connected with the other interactant, when the situational factors are constant. Byrne (1971) found that subjects sat closer to an interactant who was described as similar to themselves and who they found more attractive than other interactants. Smith (1953) found that subjects using a size-distance table (an apparatus which the subject adjusts to bring a projected image closer to him) adjusted a picture according to their perception of the person portrayed, with pleasant people brought closer than unpleasant ones. Both of these studies suggest that closer personal spacing is associated with people who have more positive associations. One could argue that the Ss held a positive attitude toward others who were associated with positive things, but since this "attitude" was not a pre-existing one, but rather, was formed from this one specific interaction situation, it is here categorized as a specific socio-emotional factor.

Liepold (1963) gave subjects either praise, stress, or neutral instructions, regarding an interview they
were to have. He found that Ss given praise instructions sat closest to the interviewer's chair, followed by those in the neutral condition, with the subjects in the stress condition maintaining the most distance from the interviewer. Here personal spacing may be seen as an inverse function of positive associations related to the socio-emotional aspect of the situation.

Status relationships may be social relations specific to a situation. Sommer (1967, 1969) and Hall (1959) suggested that people who are of higher status keep larger distance between themselves and others. Ziller, Megas, and Decencio (1964) suggested that the greater the status difference between people, the more will be the distance they keep between figures of themselves and others in a figure placement task. In order to assess the influence of status on personal space according to the theoretical conception presented here, one would have to measure how, if at all, status affected the perceived positivity or negativity of the interaction.

Rosenfeld (1965) conducted an experiment in which females were instructed to enter a room containing a confederate and to either seek or avoid approval.
Rosenfeld found that the approval seeking subjects approached much closer than approval avoiding subjects. Here, approval seeking might be viewed as the seeking of positive associations and approval avoiding as the avoidance of those positive associations. Here, the positivity of the associations sought in the specific socio-emotional interaction was inversely related to the amount of personal space between the interactants.

The studies reviewed here suggest that there is an inverse relation between positivity of specific socio-emotional associations and distancing. In the study reported below, this relationship is examined. It is hypothesized that in an interaction situation, the more positive the socio-emotional consequences associated with the interaction, the greater will be the interaction tendency, and the smaller will be the distance between the interactants.

Specific situational determinants. Various aspects of the specific interaction situation, other than the socio-emotional aspects, have been examined. These studies involve setting and activity factors.

Little (1965) found that the setting influences personal space. He found that the distance kept between
interactants was less on the street corner than in a home, and less in a home than in an office. Cultural norms probably determine these spatial behaviors more than any other factor and the setting effect may be related to the present model in the same way that cultural norms are (page 6).

Several studies of activities and personal spacing are consistent with the present model. Sommer (1969) and Norum, Russo, & Sommer (1967) studied the arrangement of cooperating and competing individuals. At a rectangular table, subject pairs who anticipated cooperating sat side by side, and those anticipating competition sat across from one another. Thus, cooperating pairs had less interpersonal distance than competing pairs. Little (1968) conducted a study involving a figure placement task. He found that when Ss were told to place the figures as they would be if they were engaged in a conversation on a certain topic, pleasant topics produced closer placement of figures than did neutral or unpleasant topics. Mehrabian (1969b) noted in his review article that closer interpersonal distances were established when the subjects discussed innocuous topics rather than personal or embarrassing ones. It may be argued that
competing and discussing unpleasant or embarrassing topics are perceived as having more negative associations than cooperating and discussing pleasant or innocuous topics, and thus, interaction tendency is lower with the more negative situations, and spacing more distant.

The research reviewed above suggests that there is an inverse relation between the positivity of associations connected with the specific situational factors in an interaction situation, and the distance between the interactants. The present study examines this relationship. It is hypothesized that in an interaction situation that the more positive the associations connected with the situational factors, the greater will be the interaction tendency, and the less interpersonal distance the interactants will maintain.

The concept of interaction tendency has been suggested as a mediating variable to integrate research findings relating personal spacing to four categories of determinants; characteristics of the individual, cultural norms, pre-existing attitudes toward the interactant, and specific socio-emotional and situational factors. The present research proposes to examine the usefulness of the interaction tendency concept in relation to the fourth category of determinants of personal space; specific
socio-emotional and situational factors. If evidence is obtained for the proposed hypotheses, our understanding of the determinants of personal spacing will be greatly improved. Viewing interaction tendency as a basic underlying process which mediates between perceived associations and personal space is clearly a broader, more comprehensive way of understanding the several seemingly isolated studies discussed above.
METHOD

Subjects. Subjects were 105 female students attending the University of Massachusetts and enrolled in the Introductory Psychology course. Their participation in the study earned them points toward their final course grade.

Procedure. The design of the study was a $2 \times 2 \times 2$ factorial. The eight conditions were combinations of two levels of type of task (problem solving or conversation), two levels of consequences associated with the task (positive or negative), and two levels of consequences associated with the other interactant (positive or negative).

Ss were run individually. The experimenter met each subject, escorted her to a desk with a cassette player on it, and instructed her to be seated and listen to the prerecorded instructions. Each S listened to a recording which explained that she will be involved in a study examining how long it takes two people to solve a problem (or discuss a certain topic). She was told that in a short while she will be involved in a problem solving (conversation) task with another person.
In the problem solving conditions, it was explained that the experiment was examining how long it took people to solve a problem when the problem was easy (difficult), and the other interactant was a pleasant (unpleasant) person.

In the conversation conditions, it was explained that the experiment was examining how long it took two people to discuss a certain topic, when the topic was very interesting (dull) and the other interactant was a pleasant (unpleasant) person.

Then the tape instructed the S to fill out a questionnaire in front of her. Ss were also instructed that upon completion of the questionnaire, they were to go into the next room where the other interactant was, take a seat, and wait for the experimenter to come in and give further instructions. Ss were instructed not to speak to the other interactant until the experimenter told them to do so.

The questionnaire was composed of items that required responses on a 9 point semantic differential adjective scale. The questionnaire included a manipulation check of the associations connected with the task. Questions were, "The problem you will attempt to solve
will be easy...difficult" and "The problem will probably make you feel negative...positive" ("The topic of conversation will probably be interesting...dull" and "The topic of conversation will probably make you feel negative...positive"). Another set of questions, checking the kind of associations connected with the other interactant was, "Your coworker is probably pleasant...unpleasant" and "Your coworker will probably make you feel bad...good" ("Your partner is probably pleasant...unpleasant" and "Your partner will probably make you feel bad...good").

The final section of the questionnaire assessed how the S expected to feel in the experimental situation, along the dimensions of comfortable, uncomfortable; positive, negative; good, bad; self-conscious, not self-conscious; sociable, unsociable; tense, relaxed; pleasant, unpleasant; passive, active; interested, bored; and reluctant, enthusiastic.

In the 9'X15' experimental room was a line of eight chairs against the 15' wall to the S's immediate left, as she entered the room. Each chair was 4" from the next and faced toward the center of the room. A confederate was seated in the second chair from the far end of the room (see Fig. 1).
Figure 1
Diagram of the experimental room
After the S had seated herself, she was informed that the experiment was over. She then returned to the first room and completed another questionnaire. This questionnaire assessed the S's awareness of the purpose of the experiment. After the questionnaire was completed, the S was debriefed and dismissed.

The confederate, blind to the conditions, recorded which seat each S sat in, in relation to her. Also, the confederate, using a stop watch, measured the time between each S opening the door to the room and seating herself. The confederate also assessed the angle at which the S positioned herself in relation to the confederate, with a directly facing position being rated 0° and a directly perpendicular position being rated as 90°.
RESULTS

Dependent variables were responses to the questionnaire items, seating position, seating time, and seating angle. Analyses of variance were applied to these data, with the main factors being the type of task (problem solving or conversation), nature of associations connected with the task (positive or negative), and the nature of the associations connected with the other interactant (positive or negative). Five Ss were eliminated from the data analyses because they knew the confederate, and 8 were eliminated because of incomplete or improperly filled out questionnaires, leaving a total N of 92. There were between 10 and 13 Ss in a cell.

Manipulation checks of the associations connected with the task and the associations connected with the other interactant were analyzed. Ss' responses regarding their expectations of the associations connected with the task provided a qualitative check of the task variable (negative-positive). The intended effect of manipulating the associations linked with the task was achieved. Ss expected the task to make them feel more negative and to be more difficult in conditions where the task was
described as being negative \( (f=104.4, \text{df}=1/84, p<.001 \) and \( f=233.8, \text{df}=1/84, p<.001 \) respectively). Means are reported in Table 1.

Ss' responses regarding their associations connected with the other interactant provided a qualitative check of the other interactant variable (negative-positive). Again, the manipulations were successful. Ss expected the other interactant to be more pleasant and to be associated with better feelings when the other interactant was described as being connected with more positive associations \( (f=139.7, \text{df}=1/84, p<.001 \) and \( f=88.2, \text{df}=1/84, p<.001 \) respectively). Means are reported in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Questionnaire Item</th>
<th>Negative Consequences</th>
<th>Positive Consequences</th>
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<tbody>
<tr>
<td>Task will make you feel negative-positive</td>
<td>2.46*</td>
<td>6.74</td>
</tr>
<tr>
<td>Task will be difficult-easy</td>
<td>2.50</td>
<td>8.00</td>
</tr>
<tr>
<td>Interactant will be unpleasant-pleasant</td>
<td>1.90</td>
<td>7.11</td>
</tr>
<tr>
<td>Interactant will make you feel bad-good</td>
<td>3.40</td>
<td>7.30</td>
</tr>
</tbody>
</table>

* Note - scale is 1 to 9.
Ss' responses to semantic differential items regarding how they expected to feel in the interaction situation were highly intercorrelated (.33 to .64). They were summed to form an interaction tendency index. This index was analyzed as a check of the effects of the independent variables upon interaction tendency. The interaction tendency was significantly affected by all three independent variables (all p<.003). The analysis of variance is summarized in Table 2.

Table 2
Analysis of Variance of the interaction tendency index

<table>
<thead>
<tr>
<th>source of variance</th>
<th>mean square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td></td>
<td></td>
</tr>
<tr>
<td>type of task (A)</td>
<td>1634.62</td>
<td>9.55*</td>
</tr>
<tr>
<td>associations with task (B)</td>
<td>2490.91</td>
<td>14.55**</td>
</tr>
<tr>
<td>associations with interactant (C)</td>
<td>2246.71</td>
<td>13.13**</td>
</tr>
<tr>
<td>Within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>158.38</td>
<td>.92</td>
</tr>
<tr>
<td>AC</td>
<td>78.95</td>
<td>.46</td>
</tr>
<tr>
<td>BC</td>
<td>44.00</td>
<td>.26</td>
</tr>
<tr>
<td>ABC</td>
<td>507.82</td>
<td>2.97</td>
</tr>
</tbody>
</table>

* p<.003
**p<.001
The two levels of the type of task were included in the study to provide a general base from which to generalize the effects of the other two variables. Thus, it was expected that there would be no main effects for the type of task. As noted above, however, there was a main effect for the type of task on the interaction tendency index ($p<.003$). The type of task also affected specific interaction tendency variables. An analysis of variance was applied to each of the interaction tendency variables. This analysis yielded a significant interaction between the kind of task and the subject's rating of his interest in the upcoming interaction, such that most interest was reported in a conversation task that was associated with positive consequences, and least occurred in the conversation task associated with negative consequences ($F=9.8$, $df=1/84$, $p<.002$).

The kind of task and kind of consequences associated with the other interactant also significantly interacted with regard to an interaction tendency variable, the S's report of expecting to feel good or bad. Ss expected to feel best in the conversation task with the coworker who was associated with positive consequences, and Ss expected to feel the worst in the conversation task
with the coworker who was associated with negative characteristics (f=5.0, df=1/84, p<.03).

A factor analysis was applied to the ten interaction tendency variables. Three factors accounted for most of the variance. These factors were a personal emotional dimension, including the variables of comfort, self-consciousness, and tension (all loadings .71 or above); a personal activity dimension, including variables of reluctance and passivity (each loaded at .75 or above); and a more interpersonal, interaction dimension, including variables of feeling pleasant, sociable, and interested (all loadings .69 or above). The scores for the variables comprising each factor were summed to form an index of the factor. A correlational analysis was applied to each of these indices and seating, however, none of the correlation coefficients approached significance.

The behavior measures of seating distance and time to be seated yielded no significant effects. There was considerable variance in the seating distances. The overall mean for seating was 3.59, and the range of cell means was from 3.3 to 4.3. The type of task influenced the angle at which people placed themselves in relation to the confederate, with the problem solving
task being associated with a less direct orientation than the conversation task ($F=5.6$, $df=1/84$, $p<.02$).

Additional analyses of variance were performed on those $S$s who reported that they were affected by the manipulations in the desired direction. $S$s who reported on the manipulation checks that they were not affected in the desired direction ($S$s whose responses were at the midpoint (neutral) or in the opposite direction of the instructions) were eliminated from this sample. This left 77 $S$s, with 6 to 13 in a cell. This analysis reveals a main effect for seating. Seating was closer in problem solving conditions than in conversation conditions ($X=3.18$ and 3.90 respectively, $F=6.33$, $df=1/69$, $p<.01$). $S$s reported feeling more positive, more relaxed, and more interested in the problem solving task (all $p<.01$).

There was a marginal effect for the kind of associations connected with the task, such that closer seating was associated with the positively described tasks more than the negatively described ones ($F=1.69$, $df=1/69$, $p<.20$).

In an attempt to account for the variance in seating distances, two more internal analyses were performed. One analysis used extreme scores (responses that were
(1, 2, 7, 8, or 9) on the S's report of expecting to feel tense or relaxed as the independent variable and seating as the dependent variable. A borderline effect indicated that Ss who reported expecting to feel more relaxed sat closer ($\bar{X}=3.54$) than those who reported expecting to feel tense ($\bar{X}=4.18$, $N=40$, $F=3.67$, $df=1/38$, $p<.11$).

The second internal analysis used seating extremes as the independent variable and suspicion as the dependent variable. A borderline effect showed that Ss who sat the closest reported being less suspicious that the other person was a confederate ($\bar{X}=5.21$) than the Ss who sat at the more distant positions ($\bar{X}=3.33$, $N=35$, $F=3.44$, $df=1/33$, $p<.07$).
DISCUSSION

This study examined how positive and negative associations affect interaction tendency, and how interaction tendency affects seating distance. It was hypothesized that the associations connected with a situation would directly affect the interaction tendency of Ss, which would, in turn, influence their seating behavior. The significant effects of type of task and type of coworker on the interaction tendency index provides evidence that these independent variables did influence interaction tendency. When the task and the other interactant were described as positive, Ss expected to feel more comfortable, sociable, positive, relaxed, etc. Thus, the present study provided evidence for the first link of the proposed conceptualization, the link between associations connected with the interaction, and interaction tendency. The lack of significant effects of the independent variables upon seating, however, suggests that either the hypothesized relation of interaction tendency to seating does not exist, or, that there were other factors confounding the results. The discussion below focuses on the issue of the proposed link between the interaction tendency and personal space. First, evidence supporting
the proposed relation between interaction tendency and seating is discussed. Then, factors which may have confounded that relationship in this study are considered.

The analysis of variance of the interaction tendency index showed that the problem solving task was associated with more positive interaction tendency variables than the conversation task. Ss reported feeling more positive, more relaxed, and more interested in the problem solving tasks. Also, the internal analysis showed that Ss in the problem solving tasks sat closer than those in the conversation task (p<.01). Thus, for these Ss, the interaction tendency conception was useful in predicting behavior. The possibility that the nature of the task itself determined seating behavior is discussed below.

Two other findings, although of marginal significance, are supportive of the interaction tendency concept. In the analysis using only Ss who were successfully influenced by the manipulations, all of the interaction tendency variables were significantly affected by the kind of associations connected with the task, in the predicted direction. Ss who had positive associations connected with the task expected to feel more comfortable, positive, good, not self-conscious, sociable, relaxed, pleasant, active, interested, and enthusiastic. In the analysis
using only Ss who were successfully influenced by the manipulations, closer seating was associated with the positively described tasks at the p < .20 level.

The analysis of extreme scores of expecting to feel tense or relaxed, as related to seating yields an interesting trend. Ss who expected to feel more relaxed, sat closer than those who expected to feel tense (p .11). Thus, there is limited evidence that interaction tendency influences seating behavior.

Confounding factors could be responsible for the lack of significant predictive value of the independent variables. One confounding factor is the type of task. The intent of using both the problem solving and conversation tasks was to provide a general base from which to generalize the results. It was predicted that the two tasks would not differentially affect interaction tendency variables or seating. Actually, task significantly affected both variables. Perhaps Ss anticipated cooperating with the other interactant in the problem solving task, thus, sitting closer than in the conversation task. Evidence that the problem solving task did orient Ss more toward the other interactant is provided by the significant difference in the angle of seating, between
the tasks, with problem solving being associated with a more direct seating orientation than the conversation task. Some effects of the independent variables may have been washed out because of these unexpected task effects.

Another confounding variable may have been suspicion. In the post-experimental interview, several subjects reported a fear of being deceived. They stated that they were afraid that their partner wasn't going to be as pleasant as described, or that the problem that was described as "easy" was going to be difficult. These kinds of comments suggest that it is not what the experimenter tells the S to expect that is important, but rather, what the subject expects. This suggests that one reason for the lack of main effects resulting from the manipulation of associations connected with the task or other interactant was that Ss reacted to the descriptions differently; some Ss believing them, and others disbelieving. Evidence that this was a confounding factor is provided by the analysis of feeling tense or relaxed in relation to seating. Ss who felt more relaxed sat closer, regardless of what they were told
to expect. Similarly, Ss who reported being less suspicious — less aware that the other interactant was a confederate, tended to sit closer to the other interactant \((p < .07)\).

Another confounding factor could be the lack of unidimensionality of the interaction tendency variables — these variables may not all influence personal space in the same way. The factor analysis' different loadings on three factors suggested that there are personal emotional dimensions (comfort, self-conscious, and tension), personal activity dimensions (reluctant and active), and interactional dimensions (interested, sociable, and pleasant) within the interaction tendency index. Although each of these variables was affected in the predicted direction by the independent variables, they may have differentially influenced spacing behavior. The lack of correlation between seating and these factors suggests that further investigation is needed to clarify what role, if any, the lack of unidimensionality plays in determining personal space.

An alternative explanation of the results is that what was actually created by the independent variables was an attitude toward the other interactant. In the
introduction, it was recognized that a S's reactions to specific socio-emotional factors could be conceptualized as his forming an attitude toward the other person.

As Fishbein (1967) and Fishbein & Ajzen (1972) have pointed out, there isn't consistent evidence regarding any relationship between one's attitude toward an object and one's behavior toward that object. They suggest that a better predictor of an individual's behavior is his attitude toward engaging in that behavior. Thus, a better predictor of a S's spacing behavior might be an assessment of his attitude toward sitting close to the described person. Further investigation is needed to assess the usefulness of this alternative conceptualization.

Thus, it seems that there is some limited evidence for the proposed conceptualization of associations connected with an interaction affecting interaction tendency, and interaction tendency influencing spacing behavior, although research regarding an attitudinal approach to understanding personal space is needed. Future research needs to recognize possible confounding factors such as effects of different types of tasks, suspicion, and unidimensionality. The question of the utility
of the interaction tendency as a broader, more generally applicable conceptualization of personal spacing is very complex. Further investigation is needed to clarify the utility of this conceptualization.
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