

Avoidance of an act which would violate personal space*

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Male and female Es were seated at one of three distances from a water fountain in a public building. Male passersby were less likely to drink when the E was near (1 ft) the fountain than when the E was seated at less proximate positions (5 and 10 ft). This finding supports previous research on reactions to spatial invasions, while eliminating some of the problems with previous invasion manipulations.

Recent experimental studies of spatial behavior in humans have examined the physical distances which people maintain between themselves and others. This variable, termed "personal space" (Little, 1965; Sommer, 1969), has been shown to be related to such variables as the previous relationship between the interactants (Willis, 1966), the physical characteristics of the Ss (Kleck, 1969), and situational variables such as the setting of the interaction (Little, 1965).

One of the major tenets of the research on personal space is the existence of a limit on the proximity in which comfortable public interactions are possible and that violation of spatial norms leads to the discomfort of the interactants. Felipe & Sommer (1966) tested this hypothesis by having an E invade the personal space of hospitalized Ss and by observing the subsequent reactions. When the E approached and sat within approximately 6 in. of the Ss, flight and behavioral arousal reactions were the common result. McBride, King, & James (1965) have studied this phenomenon by recording Ss' GSR responses to the slow approach of an E. They found that the GSR reactions were greater when the E was near (1 or 3 ft) the S than when he was more distant (9 ft).

These experiments have shown that close personal proximity can be aversive, but both studies employed the technique of having an E approach the S until the normal limits of personal space had been violated, undoubtedly a highly novel experience for the Ss. It is possible that the novelty and uncertainty about the E's motives might be a major factor

contributing to the observed arousal. This hypothesis suggests that invasions should not be aversive if the S does not question the motives of the invader, a prediction which is compatible with the Fry & Willis (1971) finding that spatial invasions by children (5 and 8 years old) did not elicit observable negative reactions from adults. The study reported below is an attempt to investigate the affective reactions to spatial invasion in a situation which minimizes the operation of the uncertainty variable.

A field situation was devised in which the S was forced to violate the norms of personal space in order to perform an act that he would normally perform (drinking water from a fountain). If close physical proximity is aversive, then this unpleasantness should cause the S to avoid the performance of the act. This situation eliminates some of the difficulties associated with an E's approach to the S, since the E is not the invader. In addition, water drinking should provide a reasonable explanation for the S's behavior should he choose to invade, which should reduce the S's apprehension about the evaluation of his own behavior.

METHOD

In each experimental session, an E was seated in a hall of an administration building at Dartmouth College. A water fountain was prominently placed in the hallway, and the E, who pretended to be reading a book, observed the number of people who passed by the fountain

and the number who stopped to drink. In addition, the E used a hidden stopwatch to record the number of seconds that each drinker activated the fountain. All Es were instructed to avoid looking at the Ss, except for a brief glance which was necessary to identify them. Four college-aged Es, two male and two female, were employed in the study.

Proximity was varied by placing the E in a chair which was 1 ft (near condition) or 5 ft (far condition) to the right of the fountain. Data were also gathered in a control condition in which the E was seated on a bench opposite the fountain and approximately 10 ft from it. Es changed positions every 30 min, and the time at which each condition was run was counterbalanced over days.

Many of the people who passed the fountain were employed in the building where the fountain was located, and, since they soon became aware of the experiment, they were not included in the data after the first day of testing. The data of female Ss were not included in the analysis because there were not enough female passersby to perform adequate statistical analyses. Informal inspection of the data for female Ss revealed trends similar to those which were evident in the data for male Ss.

RESULTS

It was predicted that the unpleasantness of close physical proximity would prevent Ss from drinking when the E was seated in the near position. As may be seen from the summary data in Table 1, a smaller percentage of Ss drank from the fountain in the near condition than in the far and control conditions ($\chi^2 = 9.75$, $df = 2$, $p < .01$). This tendency is significant when the E is female ($\chi^2 = 6.57$, $df = 2$, $p < .05$) and approaches significance for male Es ($\chi^2 = 4.64$, $df = 2$, $p < .10$).¹

For the analysis of the amount of time each drinker activated the fountain, the data were transformed logarithmically to correct the skew of the distribution. For male Es, Ss in the near condition drank for shorter periods of time than those in the other conditions. While the F for the overall analysis of variance fails to reach significance ($F = 2.43$, $df = 2/41$, $p = .10$), the a priori comparison of

Table 1
 Summary of Drinking Data

Condition	Male Experimenter			Female Experimenter		
	N	Percentage Drinking	Mean Drink Time (Sec)	N	Percentage Drinking	Mean Drink Time (Sec)
Near	82	12.2	2.75	97	7.2	5.71
Far	73	19.2	5.29	83	16.9	4.04
Control	86	23.3	4.78	87	19.6	3.08

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the near condition with the average of the other conditions is significant ($F = 3.89$, $df = 1/41$, $p < .05$). Analysis of the drinking time data for female Es revealed a significant overall effect ($F = 3.27$, $df = 2/37$, $p = .05$), but the critical comparison of the near condition with the other conditions was not significant ($F = 2.38$, $df = 1/37$). The trend is in the direction opposite to that in the data of male Es.

DISCUSSION

As predicted, Ss tended to avoid an act they would normally have performed, drinking from a fountain, if the performance of that act would have caused them to come in close physical proximity to another person. This result supports the idea that the invasion of personal space is aversive

and the nature of the experimental situation lessens the possibility that uncertainty contributes substantially to the basic effect.

The failure to find clear-cut effects on the drinking time measure is not surprising in view of the competing influences that probably operated on this behavior. While the unpleasantness of close proximity should have served to lessen the amount of time each drinker spent at the fountain, it could also be argued that the drinkers in the near condition should have been thirstier than the drinkers in the other conditions since they were motivated enough to drink in spite of the unpleasantness of personal space invasion.

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NOTE

1. These tests are two-tailed.