

Desire for Control and the Perception of Crowding

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The role that individual differences in the general desire to control events play in the perception of crowding was examined. Male undergraduates worked on tasks requiring a great deal of movement in a small room with either two or five other subjects. It was found that subjects scoring high on a measure of general desire for control reported higher levels of discomfort and perceived the room as more crowded than did subjects scoring low on desire for control at both levels of density. The results are interpreted in support of the hypothesis that perceptions of crowding result from a perception that one's control over the situation has been restricted.

One interesting finding from research on crowding is that density, the number of people per square foot, is not necessarily related to the feeling of being crowded (Stokols, 1972). When large numbers of people are in a relatively limited amount of space, some individuals report relatively little discomfort or perception of crowding. One of the theories advanced to account for this phenomenon is that the perception of crowding is related to the perception of personal control. Schmidt and Keating (1979) argue that under certain conditions of high density individuals will perceive that their control over their environment is being reduced. For example, individuals working on a task that requires a great deal of movement in a small room probably will experience a restriction of their ability to work as they please on the task. The discomfort that results from this restriction in control then is attributed to the high density, resulting in the perception that one is being crowded. Consistent with this line of reasoning, Rodin, Solomon, and Metcalf (1978) found that subjects who were given an increased amount of perceived control over an otherwise crowded situation (allowed to push the buttons in a crowded elevator or given a position of power over a group interaction in a crowded room) perceived less discomfort and less crowding than did subjects not given this increased control.

The purpose of the present experiment is to examine the role individual differences in desire for control plays in the perception of crowding. Burger and Cooper (1979) introduced the concept of desire for control, the extent to which individuals generally are motivated to control the events in their lives. They developed the Desirability of Control Scale to assess this individual difference.

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The scale has been found to have reasonable psychometric properties and has been found to account for significant proportions of variance in several different settings, including research on learned helplessness (Burger & Arkin, 1980), gambling (Burger & Cooper, 1979; Burger & Schnerring, 1982), depression (Burger, in press), and even choice of place to die (Smith, Wallston, Wallston, Forsberg, & King, in press).

It was predicted that individuals high in the desire for control would exhibit greater discomfort and report perceptions of greater crowding than would persons low in the desire for control when placed in a high-density room. Persons who maintain a high desire to control events should find the small restrictions of a high-density room more of a threat to their perceived freedom and control and become more uncomfortable with these restrictions than would individuals low in the desire for control. They should then perceive high-density situations as more crowded than would low desire for control persons. If this is found, additional support would be provided for the Schmidt and Keating (1979) hypothesis that perceptions of restricted control are related to perceived crowding. It also would add to the understanding of the desire for control construct.

METHOD

Subjects

Sixty-six male undergraduates served as subjects in exchange for class credit. All had taken the Desirability of Control (DC) Scale (Burger & Cooper, 1979) several weeks earlier as part of a large test package. Subjects were not aware of the relationship between the testing and the research at the time of the experiment.

Procedure

Subjects were informed that the experiment concerned how people performed on tasks in a group setting. It was explained that they would be working on a series of puzzles for a 20-minute period. Subjects were told that the room they would be working in had seven large envelopes attached to the walls. After solving a puzzle, subjects were to go to one of these seven stations, depending on the answer to the puzzle, and select another puzzle to work on. The experimenter emphasized that the purpose of the experiment was to see how many puzzles the subjects could solve correctly within the allotted period of time.

Puzzles consisted of a series of arithmetic calculations which also called upon the subject's general knowledge, such as asking what was the year Columbus discovered America minus the number of pints in 16 fluid ounces divided by the square root of 49. Subjects averaged less than a minute per puzzle. This required them to move to another station and obtain another puzzle, find a space to work the puzzle, and work on the puzzle many times during the 20-minute period. The

task was designed to create a great deal of interference between behaviors and outcomes, in other words, a great deal of frustration in one's efforts to exercise control over the situation, which is a prerequisite for the perception of a restriction of one's personal control in the situation (Schmidt & Keating, 1979).

Subjects were divided randomly into groups of six or three people. The experimenter verified at that time that no two subjects within a group were acquainted with each other. In a few instances where subjects did know each other, one was replaced with another subject. At any given session only groups of six or groups of three were created. In this way subjects were not aware of the manipulation of number of subjects per room. Subjects were given a clipboard, a pencil, and a folded paper containing their first puzzle. They then were escorted into the experimental rooms. Each room was 6 feet (1.83 meters) by 6 feet and contained no furniture. Heating and lighting were adequate in all rooms. Seven envelopes were taped to the walls in each room, dispersed at approximately an equal distance from one another. The experimenter then instructed subjects to begin working on their puzzles, and closed the door.

At the end of the 20 minute period, subjects were taken from the room and were asked to complete a short questionnaire. The questionnaire contained several questions about the task and their experiences in the room. Two key questions were concerned with the subject's perception of crowding. Subjects were asked to indicate on 9-point scales the extent to which they felt uncomfortable during the task (1 = not at all uncomfortable, 9 = very uncomfortable) and the extent to which they felt crowded during the task (1 = not at all crowded, 9 = very crowded).

RESULTS

Subjects were divided by a median split of their DC Scale scores into high and low desire for control halves. A 2 (high or low DC) by 2 (high or low density) ANOVA was conducted on each of the two items on the questionnaire concerned with crowding and discomfort. Two significant main effects emerged on the item asking subjects the extent to which they felt crowded during the task. High-DC subjects reported higher levels of perceived crowding than did low-DC subjects, $F(1, 62) = 6.54, p < .02$. In addition, subjects in the high-density room perceived more crowding than did subjects in the low-density room, $F(1, 62) = 9.46, p < .003$. The interaction between desire for control and density was not significant.

The findings from the item that asked subjects the extent to which they felt uncomfortable followed a similar pattern. A significant main effect for desire for control was found, $F(1, 62) = 4.01, p < .05$, with high-DC subjects reporting more discomfort than low-DC subjects. A significant main effect for density was found, $F(1, 62) = 7.13, p < .001$, with subjects in the high-density room feeling greater discomfort than subjects in the low-density room. Once again, the interaction was not significant. The means for these two items are presented in Table 1.

TABLE 1 Mean Crowding and Discomfort Ratings

	<i>High Density</i>		<i>Low Density</i>	
	<i>High-DC</i>	<i>Low-DC</i>	<i>High-DC</i>	<i>Low-DC</i>
Crowding	6.19	4.85	4.47	3.55
Discomfort	5.56	4.22	3.95	3.24

Note: The higher the number, the more crowding and discomfort on 9-point scales.

DISCUSSION

The results support the hypothesis that individual differences in the general desire to control the events in one's life are related to perceptions of crowding in high-density situations. High-DC subjects placed in a small room with five other people reported greater discomfort and more perceived crowding than did low-DC subjects. This finding is consistent with the notion that high-DC individuals will react most strongly to the restrictions to their freedom and control in such a situation. According to the Schmidt and Keating (1979) hypothesis, these high-DC subjects reacted to the restrictions with negative affect that then was attributed to the high-density conditions, and reported as perceived crowding.

The results from the low-density conditions were not entirely as expected, however. Apparently the placement of three people into a room as small as the ones used in this experiment still resulted in some restrictions of behavior when subjects worked on this type of task. A re-examination of the room with three occupants confirmed that this certainly may have been the case. Although the perceived crowding and discomfort was at a level below that of subjects in the high-density condition, the desire for control effects were powerful enough to produce significant differences among the subjects even in the less densely-packed room.

The findings therefore provide additional support for the loss of perceived control interpretation of perceived crowding. Future work in this area might focus specifically on the second link in the Schmidt and Keating hypothesis; that subjects make attributions to the high density situation because of its salience. Only the first part of the hypothesis, the perceived lack of control, was examined in this research. The findings also provide a greater understanding of the desire for control concept, and demonstrate its applicability to another aspect of behavior linked theoretically to personal control. Practical applications of these findings include matching work environments with individual differences in desire for perceived control and altering work situations to allow for the perception of more control. Of additional help would be the reduction of features in the work situation that inhibit the perception of freedom and control.

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