

The Effects of a Crowded Deliberation Environment
on Mock Jurors' Attitudes and Decision-Making

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Abstract

This study examined the effects of crowding on juror attitudes and decision-making. Participants were placed in a mock jury scenario, given a hypothetical court case, and asked to reach an individual determination of the guilt or innocence of the defendant. Participants then deliberated a verdict and completed a second questionnaire to assess perceptions of their surroundings and attitudes toward the defendant. Individuals in the crowded condition were more likely to find the defendant guilty than those in the uncrowded condition. Additionally, crowded participants rated the room as more uncomfortable compared to the room ratings of the uncrowded participants.

Introduction

Social scientists have explored the behavioral effects of population density and feelings of being crowded in a variety of contexts. These research contexts range from comparisons of population density in cities (see Knapp and Hall, 2001) to studies that manipulate levels of density and feelings of crowding in various small group situations (see, for example, Freedman, 1975). The primary basis for the current study is the large time gap in the published research on this issue. As is shown in the following sections, most of the work on density was conducted in the 1970's. Second, the generalizability of findings on density and human behavior can be examined by assessing effects in a variety of environments. Additional justification for examining density and crowding in the jury deliberation context is the likelihood that room size and other environmental conditions associated with jury deliberation rooms across the U.S. may sometimes be problematic.

While specific room dimensions of deliberation rooms are not generally accessible in the literature on legal and courtroom communication, it is not difficult to find reports of dilapidated and outdated courtroom facilities in general. For example, commenting on "courthouse woes," in Scranton, Pennsylvania, the Times-Tribune (2006, 2) reported "heating and air conditioning systems are ancient. Offices are crowded. Court hearings are often jammed into jury deliberation rooms." Arguing the need for a new justice center, Maley et al. (2002), noted that the existing facility "squeezed" 32 courts into a facility that had been designed for 16. "...hearings and even some jury trials are conducted in tiny ad hoc meeting rooms where security risks are great and

justice is cheapened.” A task force that assessed the conditions of jury service in the U.S. called attention to the “cold and crowded jury assembly rooms” in Los Angeles County (Law Reform Committee, 1997). The Multnomah County auditors’ office report (1994) of needed renovations in their 81 year old courthouse noted that jury deliberation rooms ranged in size from 223 square feet to 690 square feet. This would allocate 18.6 square feet to 57.5 square feet per person in a 12-person jury. The size range of the Multnomah County deliberation rooms approximates the space range used by Freedman (1975) in his seminal mock jury deliberation research.

Freedman’s high density conditions were up to 16.67 feet per person, with low density rooms ranging from 30 to 50 square feet per person. Assuming that environments affect mood, which, in turn affect human judgments and behavior, attributes of the courtroom environments, including inadequate space for jury deliberation, have the potential to affect trial outcomes.

To further explain the bases for the current study, we will begin with definitions of density and crowding, and proceed to examine the types of research pertaining to behavioral effects of crowding.

Definitions of Crowding

There is no universal definition of crowding. Social scientists have adopted different theoretical and operational definitions of this concept. As a consequence of the variation in how the term crowding is used, one must analyze the research of other scholars with caution.

Jonathan L. Freedman, a social scientist who has contributed much to our understanding of crowding, draws a distinction between density and feelings of crowding. Freedman (1975, p. 9) defined density levels in terms of the amount of space available per person in a given area. Simply and mathematically:

$$\text{Density} = (\text{units of space}) / (\text{number of people occupying space})$$

Yet this physical state of density must be differentiated from feelings of crowding. Freedman (1975) stated that crowding is an individual, subjective feeling. This perception may be influenced by other factors such as odor and temperature (p. 9). Additionally, he asserted that the subjective feeling of crowding carries heavily negative connotations. To Freedman, density is not necessarily negative but crowding always is:

The physical state [of density] is neither good nor bad by itself. In contrast, the sensation of being crowded is almost by definition a negative one. People do not say, “I feel crowded, isn’t that nice?” “Three’s a crowd” is not meant invitingly.

Whenever a person experiences a sensation of being crowded, he is saying he does not like a situation he is in (p. 10).

Despite Freedman's careful differentiation between density and crowding, he did not follow his own delineation. That is, Freedman operationalized crowding in his research in terms of the amount of space per person (density). This was also the case with the related studies reviewed in the following sections. The current study does use Freedman's distinction. Density is manipulated in order to induce crowding, a feeling state. Unlike Freedman, crowding was established with a self-report manipulation check to assess feelings of crowding (see method and results sections).

Besides variations in conceptual definitions of crowding, there are significant variations in operational definitions as well. (p. 144). In his research involving jury deliberations, Freedman et al. (1972) used high densities that ranged from 10 to 16.67 square feet and low densities from 30 to 50 square feet, depending on the number of individuals in the small and large rooms, which ranged from 6 to 10 square feet. In contrast, Griffitt and Veitch (1971) operationalized low density as 12.73 square feet per person, which is a higher level of density than some of Freedman et al's high density conditions.

Density and Non-Human Animals

While the issue of how density and crowding affect the behavior of non-human animals is far removed from effects on jury behavior, we mention the animal research here because it was a precursor to the research on crowding and human behavior. Perhaps researchers found it easier to experimentally crowd rats than humans in studies of density and crowding effects. This early research (see, for example, Calhoun, 1962) demonstrated both the adverse behavioral effects of crowding, e.g., increases in aggression and infant mortality, and also raised awareness of the need for such research on human populations. Calhoun concluded: "In time, refinement of experimental procedures and of the interpretation of these studies may advance our understanding to the point where they may contribute to the making of value judgments about analogous problems confronting the human species" (148).

Density and Human behavior

Researchers have examined the effects of density on human behavior with both survey and experimental methodologies. Correlational studies comparing negative social behavior such as crime and juvenile delinquency between high and low density communities have sometimes reported positive relationships between density and social problems (see, for example, Freedman,

1975; Galle, Gove, and McPherson, 1972). Other surveys have failed to demonstrate such relationships (see Pressman and Carol, 1971; Galle, McCarthy and Gove, 1974).

The experimental research on the impact of density on humans in intrapersonal and small group problem solving contexts is most relevant to the mock jury scenario of the current study. Researchers have examined the effects of high density on task performance and affective judgments about environments and people.

Griffitt and Veitch (1971) placed participants in low density, 12.73 square feet per person, or high density conditions, 4.06 square feet of space per person. The participants were engaged in various intrapersonal tasks, such as word puzzles, for approximately 45 minutes, then completed the dependent measures. The data indicated universally negative effects of density. Participants in the high density condition reported more negative moods, more negative ratings of the room, and less liking for a person who was described to them in a written scenario.

Freedman (1975) conducted a similar experiment designed to test effects of density on emotional reactions and aggressiveness. Participants were divided into all-male, all-female, and mixed-gender groups; they were then placed in a mock jury situation in which they listened to a variety of cases. Participants made individual determinations of guilt or innocence, determined the severity of punishment if they judged the defendant to be guilty, and rated their fellow participants on several measures. These findings demonstrated that gender is a potentially relevant variable that merits consideration in studies of density, crowding, and human behavior. While the data showed no consistent pattern as a function of crowding for mixed sex groups, all-male groups in the high density condition liked each other less, rated their fellow participants as less friendly and as poorer jury members, and gave more severe sentences than all male groups in the low density condition. The all-female groups reacted oppositely. That is, they liked each other more, rated their fellow jurors as more friendly and as better jury members, and gave less severe sentences in the high density condition.

The Density-Intensity Theory

In seeking to explain the complex responses to density exhibited by humans, Freedman (1975) posited the density-intensity theory, which states that density by itself has neither good nor bad effects on people, but rather acts to intensify an individual's typical reaction to the situation, whatever that may be.

To test this theory, Freedman (1975: pp. 99-101) placed individuals in high or low density conditions in which they would read a speech and receive feedback from others in the

room. The others were instructed to give all positive feedback or all negative feedback. Participants then completed a questionnaire regarding their feelings about the experience and the other members of their group. In this study, there was no overall effect of density on responses. However, participants in the pleasant condition, the one in which they received all positive feedback, gave more positive responses in the high density room than in the low density room. Participants who received all negative feedback gave more negative responses in the high density condition than in the low density condition. These findings are in accord with the density-intensity hypothesis.

Rationale for Research

As noted above, there are gaps in the extant research on human crowding. The bulk of the research was performed during the period of 1960-79, with a few studies in the 1980s. Communication research has demonstrated how effects of certain variables change over time. For example, studies of tactile communication have demonstrated that levels of touch between opposite sex friends in physical areas have changed over time (Rosenfeld et al., 1976). It is not unreasonable, then, to postulate that shifts have occurred in other areas of nonverbal communication behavior, such as responses to crowding.

The current study used a mock jury scenario to investigate the relationship between crowding and determinations of guilt or innocence, severity of punishment, and affective judgments about the defendant, fellow jurors and the room. Others have looked at similar questions. Griffitt and Veitch (1971) manipulated density and observed a change in affective judgments; Freedman (1975) looked for similar relationships in his mock jury experiment.

A problem in these earlier studies is that crowding is defined strictly in terms of density. Ironically, early scholars took care to differentiate the physical state of density from the subjective one of crowding, *but* referred to the physical state in their works as “crowding.” The current study manipulated density as a means of inducing two levels of participants’ subjective feelings of crowding. This represents a unique contribution to the research on crowding because it is the first research to assess whether participants actually felt crowded in high density conditions.

Specifically, the present investigation was designed to assess the effects of crowding on the deliberations of mock juries by posing the following research questions:

RQ1: Does crowding affect determinations of guilt?

RQ2: Does crowding affect participants’ evaluations of the defendant?

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RQ3: Does crowding affect participants' evaluations of other members of the jury?

RQ4: Does crowding affect participants' evaluations of their surroundings?

This project explores questions that have not been addressed in approximately two decades. It extends research on the effects of perceptions of crowding on juror attitudes and affective judgments. In a society that places a high premium on "justice for all," the implications for the justice system are significant.

Method

Design and Participants

A total of 144 students (72 males and 72 females) enrolled in an undergraduate communication course at a large university in the southern United States were randomly assigned to "crowded" or "uncrowded" conditions. Same sex groups of six participants were used, resulting in a total of six trials in each of the 2 (crowded/uncrowded) x 2 (male/female participant) cells. The same conference room was used for both the crowded and uncrowded conditions. A barrier of furniture was used to reduce available space in the crowded condition. Density in the uncrowded condition was 46.57 square feet per person, compared to 4.32 square feet per person in the crowded condition. The manipulation approximates the low density manipulations used by Freedman (1975) and Griffitt and Veitch's (1971) high density operationalization. The high density manipulation also represents a personal space violation according to Hall's work on proxemics. Hall (1966) argues that co-workers conducting impersonal business tend to maintain distances of four to seven feet. The 4.32 square feet afforded participants in the high density condition represents just over a 2x2 foot space.

Procedure

All sessions followed a scripted, standardized procedure. Participants were asked to review an 800 word summary of the facts of a case in which only circumstantial evidence was available to prosecute a black male charged with breaking and entering a pharmacy with the intent to commit a felony. The case used was held constant across mock jury groups. The summary included the defendant's alibi for each piece of evidence. For example, the perpetrator had allegedly sawed through bars on the window in order to gain access. A hacksaw with the defendant's initials had been found at the crime scene. However, the defendant claimed that all of his tools had been recently stolen. No usable fingerprints could be lifted from the hacksaw. Previous research using this case has yielded control group guilty verdicts by approximately 50% of the respondents (see, for example, Pryor and Buchanan, 1984). The ambiguity regarding the

defendant's guilt or innocence introduced the potential for extraneous factors, such as feelings of crowdedness, to influence participants' judgments.

After reading the case materials, participants were asked to complete a questionnaire on which they rated the likelihood of the defendant's guilt/innocence, perceptions of crowding, evaluations of the defendant's trustworthiness and likeability, and the comfort of the environment. Participants were then asked to deliberate for five minutes to reach a verdict. Groups that did not reach consensus in the allotted time were defined as hung juries. Finally, the participants responded to another questionnaire that included semantic differential items to rate the competence and likeability of their fellow participants as a group, as well as a second measurement involving scaled responses to perceptions of crowding.

Results

A series of 2 (crowded/uncrowded) x 2 (male/female participant) ANOVAs were used to analyze perceptions of crowding and tests of the four research questions. Since sex of participant yielded no significant main effects and no significant interactions with crowding, the remainder of the results section focuses primarily on the effects of perceptions of crowding on the dependent measures.

Manipulation Checks

Participants were asked to assess how crowded they felt when deciding the verdict individually and also during the deliberation. Responses to both questions indicated that perceptions of crowding were successfully manipulated. Based on 5-interval scales (1 = very crowded; 5 = very uncrowded), the mean responses to the question prior to deliberation were 2.40 for the high density condition and 4.22 for the low density treatment ($F=101.89$, $p<.001$, $\eta^2 = .42$). The corresponding means obtained following the deliberation were 2.83 and 4.21 ($F = 58.29$, $p<.001$, $\eta^2 = .29$).

Tests of Research Questions

Research Question 1 (RQ1) asked if crowding would affect determinations of guilt. Participants reported their individual verdicts on a 1-4 scale that included the positions of certainly guilty, probably guilty, probably not guilty, and certainly not guilty. Compared to the uncrowded condition mean, 2.58, participants in the crowded condition perceived the defendant to be more guilty ($M = 2.24$, $F = 11.69$, $p<.001$, $\eta^2 = .077$). Research question 1 was also tested by using the group decisions that were reported on the same scale following deliberation. Of the 24 mock jury groups, 8 failed to reach consensus (3 crowded; 5 uncrowded)

and were classified as hung juries. Consistent with the individual verdict data, a one-way ANOVA based on the responses of the remaining 16 groups (9 crowded; 7 uncrowded), demonstrated greater perceived guilt in the crowded ($M = 2.11$) than in the uncrowded ($M = 3.00$) conditions ($F = 15.08$, $\eta^2 = .52$). To assess the gender and gender x crowding interaction effects on group verdict it was necessary to include all 24 groups, including those that failed to reach a verdict. This was accomplished by assigning the hung juries a “3” on the verdict, which produced a 5-point scale (certainly guilty, probably guilty, no decision, probably not guilty, certainly not guilty). The two-factor ANOVA again produced a significant main effect such that the defendant was rated as more guilty in the crowded condition ($M = 2.5$) than in the uncrowded condition ($M = 3.58$, $F = 11.90$, $p = .003$, $\eta^2 = .37$). Neither the gender main effect nor the gender x crowding interaction approached significance. There were also no significant differences in the time it took groups to complete their deliberation as function of crowding or gender.

RQ2 asked if crowding would affect participants' evaluations of the defendant. The effects of crowding on participants' ratings of the defendant's trustworthiness and likeability were both nonsignificant. The 5-interval scales for the trustworthiness and likeable measures ranged from 1 (very untrustworthy) to 5 (very trustworthy), and 1 (very unlikeable) to 5 (very likeable). The mean ratings of the defendant's trustworthiness were 2.65 in the crowded condition, compared to 2.76 in the uncrowded environment ($F = 1.05$, ns). The corresponding mean ratings for likeability of the defendant were 2.68 and 2.72 ($F = .11$, ns).

RQ3 asked if crowding would affect participants' evaluations of other members of the jury as a whole. No significant main or interaction effects were obtained on judgments of other group members on two 5-interval items, with scale points ranging from 1 (very incompetent) to 5 (very competent) and 1 (very unlikeable) to 5 (very likeable). The mean competence ratings were 4.03 for the crowded condition and 4.28, uncrowded ($F = 3.42$, $p < .07$, $\eta^2 = .024$). The corresponding mean likeable ratings were 4.04 and 4.17 ($F = .74$, ns).

RQ4 asked if crowding would affect participants' evaluations of their surroundings. The scale range was from 1 (very uncomfortable) to 5 (very comfortable). Participants in the crowded condition rated the room as more uncomfortable ($M = 2.73$) than did those in the uncrowded condition ($M = 4.11$, $F = 85.91$, $p < .001$, $\eta^2 = .38$).

Discussion

This investigation found that individuals who felt crowded rated the defendant in the court case scenario as more guilty than did their counterparts in uncrowded groups. This finding was obtained on both individual (before deliberation) and group deliberation measures.

Our data produced no significant gender effects. Freedman's (1971) data from same sex mock juries showed that while males reacted more negatively to crowding, e.g., gave more severe sentences, rated each other as poorer jury members, and liked other participants less, females reacted oppositely. Compared to the uncrowded situation, females gave more lenient sentences, and rated each other as more likeable and as better jury members in the crowded condition. These differences in gender/crowding effects may be a reflection of the evolution of social norms since 1975. Due to changes in socialization, women may be less inclined to respond to conditions such as crowding by becoming more positive and cooperative. In our study, women's responses were identical to men's. This may result from increased equality between the sexes.

Our findings of non-significant differences on affective judgments of the defendant and other group members are generally at odds with the findings of Griffitt and Veitch (1971), who reported that affective ratings were generally lower in the high density than low density condition. The means from the current study show that affective ratings for the defendant were consistently negative (below the midpoint of the 5-interval scale), while ratings of group members were consistently positive (above 4 on the five-interval scales). It seems likely that affective judgments of a defendant would be influenced by the type of crime or other scenario given to the evaluators. This investigation's use of a breaking and entering case is unique to the research on density and crowding. Control group data (Pryor and Buchanan, 1984) based on this same breaking and entering scenario also yielded negative affective judgments of the defendant.

Regarding ratings of group members, it is also possible that the deliberation time limit (five minutes) was too brief to allow conditions to affect group members' judgments of each other. In contrast, Freedman's (1971) findings were obtained using four one-hour sessions. Still, participants in this experiment, like those in the Griffitt and Veitch (1971) study, did rate the room more negatively in the crowded condition.

It should also be noted that environmental differences in the experimental settings may have influenced the findings. Griffitt and Veitch, for example, placed their subjects in experimental chambers of varying sizes. This may well have a different impact than the

conference room used in this study. The room density was also varied in different ways. Griffitt and Veitch manipulated density by using different-sized chambers whereas Freedman increased the number of individuals in a given room. Density was manipulated in this study by using furniture to decrease the available space.

Limitations

The current research has several limitations. First, it utilized groups of all-male and all-female participants. While this procedure allowed for assessment of gender-specific crowding effects, it was not reflective of the mixed genders found in actual juries. The demographic make-up of the mock juries used for the current research also differed from the demographics found in typical juries. College students, for example, are generally younger and may differ in other ways demographically from the general population.

Finally, deliberation time afforded actual juries is markedly longer than the limited time used for the current research. Although actual juries deliberate for hours or even days, the current deliberations were limited to five minutes. This may well be the most serious limitation of the current investigation. It is possible that crowding effects are exacerbated by the length of time spent in the crowded environment. The findings for Griffitt and Veitch (1971) and Freedman (1975), reported earlier, demonstrate strong density effects with longer exposure times to the high dense conditions. Still, that significant effects of crowding on verdict and room ratings were obtained in the current study with only a 5-minute exposure to the treatment suggests that even brief exposures to high density and feelings of crowding can affect feelings and judgments. Replications with longer exposures to the conditions are needed to determine whether the nonsignificant effects of ratings of fellow jurors were a function of the comparatively brief deliberation time. From a different perspective, it is also possible that juries who spend hours or days together may develop a cohesiveness that mitigates negative crowding effects, or, alternatively, a disharmony that accentuates negative effects of crowding.

Future Research

Participants in this study were placed into all-male or all-female groups. Future researchers may be interested in creating a crowding situation that more closely mirrors the demographics found in actual juries. Future research should also examine possible interactions between length of deliberation and effects of crowding.

While the current study examined possible gender effects of crowding, future research could examine other possible correlates to crowding and jury deliberations. For example,

differences in temperature, combined with crowding may impact deliberations. Future research could benefit from incorporating analysis of additional demographic variables, such as how the racial composition of the mock jurors and of the defendant in the scenario may impact the perceptions of the defendant and other jurors. Additionally, by altering the race of the defendant, researchers might learn more about the correspondence of race and crowding during the deliberation process. It might also be helpful to examine cultural effects of perceptions of crowding. For example, people in collectivistic (group oriented) cultures may experience less response to crowded conditions than do people in individualistic (person oriented) cultures.

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