

# ENVIRONMENTAL NUMBNESS IN THE CLASSROOM<sup>1</sup>

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## ABSTRACT

Following research on deleterious effects of surroundings on the behavior of users of other institutions, a naturalistic study of classroom-student interaction was conducted. Instructor-experimenters observed and recorded the behavior of university students in a laboratory which had been slightly altered to maximize difficulty of movement in the room. The amount and frequency of student alteration of the inhospitable furnishings was compared with person-furnishing distances in a non-institutional, personalized setting. The results indicated a strong tendency for students to accept without alteration a rather uncomfortable classroom arrangement. A brief discussion of possible implications for student attitudes toward school follows, one of these being that a specific inhospitality may lead to a diffuse negative feeling and may affect communicative behavior.

HOMO SAPIENS is commonly and correctly regarded as the greatest living shaper of the natural environment. Especially in contemporary society, when one gazes over a skyline, expressway, or dam, the image of "conqueror of the environment" (3) seems a truism. People have tremendously altered certain of earth's elements in active pursuit of the comforts and amenities first envisioned by the inventive members of the species.

Only recently has a broad awareness come that the shaper is, in part, shaped by his creations. When planners are proportionately few and users are not consulted in the design of a building, a danger arises that the needs of those who must spend large parts of their day in the structure will not be met. Mankind conquers while man lives; beneath the imposing skyline, micro-environments of dubious comfort and dignity exist. Not all these are in slums and ghettos; new and architectural award-winning structures have come in for their just share of the criticism (1).

Sommer (4) has discussed numerous types of buildings, including schools, in which the arrangement of furniture has apparently played an important role in behavior and communication. He found no malice on the part of institutional authorities, but rather an ignorance of the principles of design coupled with a *de facto* default in this matter on the part of maintenance workers, who are not interested in facilitation of learning in the users.

Users of public and semi-public buildings seem to develop an "environmental numbness" (5) to unpleasant sounds, sights, and arrangements. In one informal experiment, visitors were seated in front of a very annoying fan. None complained, but when finally the sound was consciously brought to their attention, nearly all acknowledged its unpleasantness. Sommer (4) feels that prolonged exposure to an institutional setting tends to lead to "institutional sanctity" or the feeling on the part of the

user that whatever the setting, unpleasant or not, any change is regarded as improper by the user. The genesis of institutional sanctity is related to the same societal more which leads to the stiff suppression of user-initiated changes in the design of the environment, as in the case of People's Park in Berkeley and the custodian's everyday war on graffiti.

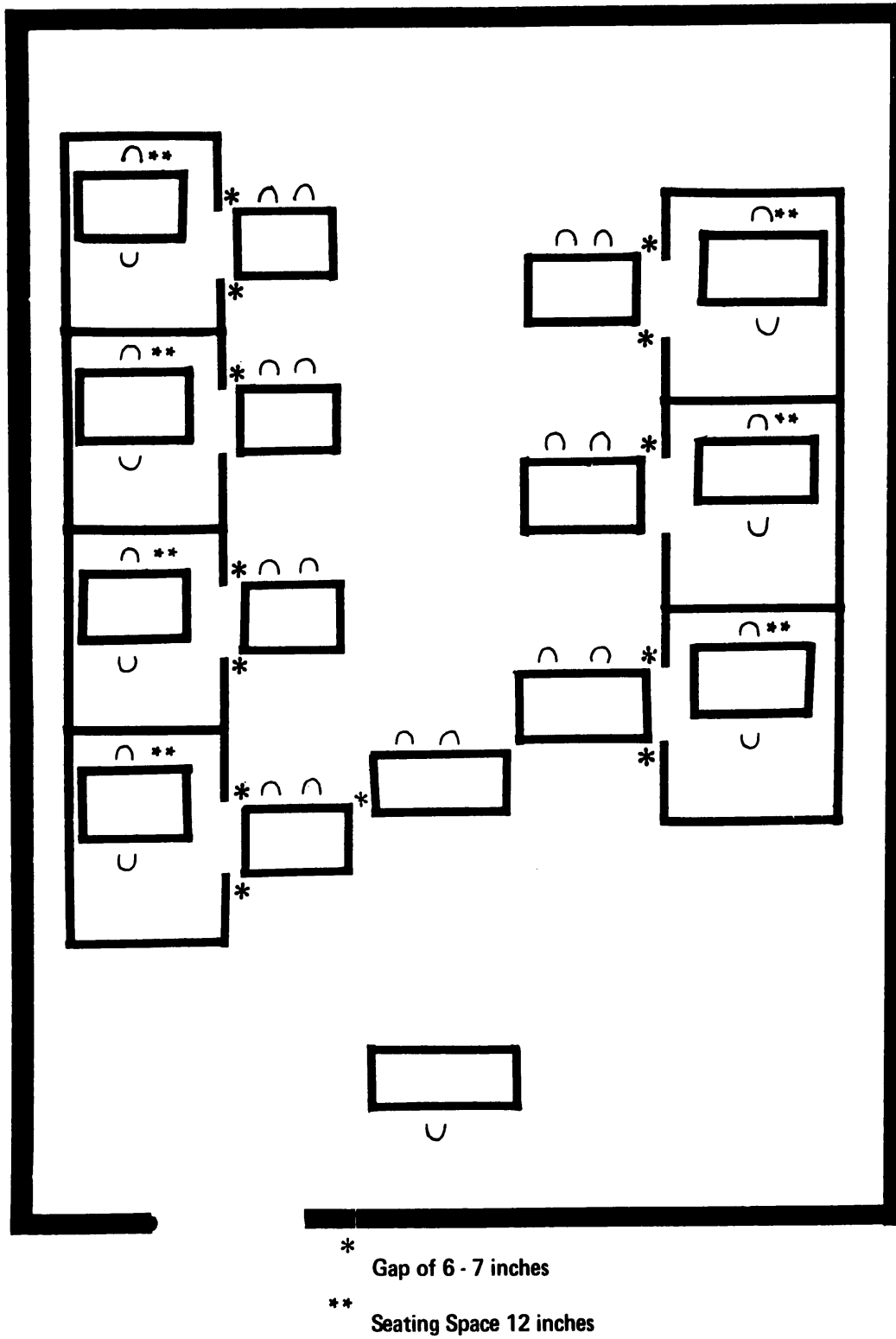
A previous study (2) of student reaction to surroundings found that students will, in their dormitories, handle an unliked but school-owned piece of furniture (a stiff chair and study desk) by ignoring it. Most students, and especially those with the higher grade-point averages, were found to study on the floor, the bed, or a lounge chair. The present study was designed to investigate student behavior in a situation where no alternative was available; they had to either accept or alter their surroundings. It was hypothesized that in the institutional setting, the students would not substantially change an inhospitable arrangement, despite their membership in a relatively high environmental awareness group.

## Method

A university course in experimental psychology routinely conducts a didactic experiment in short-term memory early in each semester. The laboratory used for this purpose affords an opportunity for naturalistic observation and appropriate mis-arrangement of furnishings. The tables and chairs in the laboratory are of light construction, which no student would have difficulty in moving. The floor consists of waxed and polished tile.

The laboratory procedure calls for a pre-experimental discussion, the memory experiment, and a post-experiment discussion of results. The first and third parts take place in the open center area of the room (see Figure 1), and the

Figure 1.—Schematic Diagram of Laboratory



experiment occurs in cubicles constructed from movable partitions along the sides of the room. During the experiment, pairs of students test each other, alternating *E* and *S* roles.

Prior to four laboratories sections, the tables and cubicles were carefully arranged as in Figure 1. This arrangement was on the whole the same as the students had previously experienced, except that all passages were reduced to the minimum necessary for a slender to medium-sized male to pass through without being forced to move the furniture. Thus, at each asterisked gap in Figure 1, the distance between articles of furniture was set at 6-7 inches. In order to pass, as the students had to do to move from central tables to cubicles, it was necessary to turn sideways and, depending on girth, maneuver carefully to avoid moving furniture. Of course, all students also had to pass through the frontal barrier from the entryway to their seating places at the beginning and end of the class, or to consult with the teacher if he happened to be in front of the barrier of tables.

Inside the cubicles, further "tight squeezes" were present. One side of each cubicle was arranged so that the distance between the back of the chair and the nearest table edge was 12 inches. The other chair, because of the size of the cubicles, had a much greater distance, allowing its occupant plenty of room to move. Although this 12-inch distance seemed certainly too close for ease of movement and comfort, a small naturalistic investigation of chair-table distances was made in situations where people felt free to set this distance, or at least had no impediment physically blocking the back of their chair.

In an academic office complex, an observer walked through the corridors and at every open door quietly asked the occupant, if they were involved in deskwork, not to move. After explaining that it was not a hold-up, the observer measured the distance where the person had been sitting (back of chair to edge of desk). The mean distance was 19.1 inches, with a standard deviation of 4.8 inches. Only one of 32 people sat at 12 inches or less. It was observed, incidentally, that a strange sex difference seems to obtain in desk seating patterns. Nine of the 32 people sat at an angle to the desk (their distance was to the center of the chair back), and eight of these were male. The sample was equally divided between males and females. This difference did not seem to be task-related as all people except one were reading or writing—the one typist cannot explain the female tendency to sit with evenly placed chairs.

In the carefully designed inhospitality of the laboratory, the instructors measured how often and how much furniture was adjusted. The cubicles were examined after class, and the central area tables were examined after the pre-experimental discussion (while the students were involved in the experiment in the cubicles), after the mid-experiment switch in *E-S* roles (which necessitated students coming out of the cubicles and, often, through the frontal barriers, as well as switching chairs in the cubicles), and after class. The observation and measurement was done covertly. At these times, the inhospitable distances were reset when they had been adjusted and recorded.

Three instructors participated after explanation and training in the experimental procedure. Thirty-four students unwittingly served as *Ss*. The following week they were informed of the experiment and queried as to their recollections of the experience.

### Results

The two measures used, frequency and amount of furniture adjusted, were applied to two types of furniture, the central area tables and the cubicle chairs. Since the cubicle chair distance could only be increased by pushing the cubicle tables away, the data actually consist entirely of amount and frequency of table movement.

An estimate of total tight-squeeze passages was first made, in order to compare that number with central area table movements made. Each student had to enter and leave through the frontal barrier, and make the return trip once in mid-class for picking up role instructions in the memory experiment. In addition, each student had to make three entries and exits from a cubicle for the same reasons. Beyond that, students often emerged from the cubicles with a question, but as no count of the exact number of these queries was made, they are not included in the total. The total, a conservative one, is 238 passages through barriers no more than 6-7 inches wide (7 passages  $\times$  34 students).

The frontal barrier table gaps were adjusted by students exactly twice. The cubicle-entryway passages were adjusted twice by moving tables and three times by moving a cubicle wall panel. In all seven cases, adjustment just sufficient for passage without turning sideways was made. Thus, slightly more than 97% of all passages yielded to the position of the table and whatever else formed the other half of the tight gap. In less than 3% of all passages did students fail to accept this Scylla and Charybdis situation. And then they only moved the tables barely enough to squeeze through themselves. None of the 34 seemed remotely close to suggesting that the whole situation was uncomfortable or changing the room as a whole. Of course they had never received any direct communication that such behavior was not allowed.

The cubicle chair-table distances were, if anything, relatively tighter than the central area table distances, and a little more adjustment was observed. The mean adjustment from 12 inches was 1.9 inches. When the distribution, however, was skewed, 70% moved their distance 2 inches or less. Essentially, a few people moved the table quite a bit and most moved it not at all or only incidentally, perhaps accidentally. The most adjustment, to 17 inches, was done by three subjects. This is still 2 inches less than the mean of the naturalistic observation. The difference between the means of the 32 naturalistically observed people involved in deskwork and the 17 students' chairs (used by 19 students because some two of them switched chairs when the *E/S* roles were switched in the memory experiment) was significant ( $t = 4.17, p < .001$ ).

### Discussion

The data suggest quite strongly that students in a classroom will repeatedly (seven or more times) accept an im-

pediment rather than adjust it to levels of comfort. Most of these students also accepted, in the same space of about 90 minutes, an uncomfortable seating arrangement in cubicles. They spent a great majority of their sitting and walking time in the class experiencing and yielding to minor barriers of furniture. None of them made more than a short-range adjustment of tables and chairs to accommodate his or her own body at the moment, and even these subjects were very rare. One instructor-experimenter noted that two of the seven adjustments were a necessity—the student was simply too large to fit through a 7-inch gap.

All the observers noted student efforts to avoid moving the furniture, such as grunts, swiveling of hips, and willingness to line up for passage through a tight squeeze. The tables came to seem magically immobile; one knew they required only a tiny amount of effort to move, yet they withstood over 238 carefully maneuvered people-passages.

The following week when all students were told of the experiment and asked to recall their experience of it, surprisingly few (one) even remembered there being any form of impediment. Others were at a loss to recall it, although one volunteered the explanation that perhaps the tables were “supposed” to be that way. In their previous classes, tables and chairs were relatively disordered, with large handy gaps, as the author discovered when he began to set up a thorough system of impediments. If the present results are generally valid, one wonders how long it would take for students to get the tables disordered! (Of course maintenance workers might change table positions in the course of their duties.)

Why students adjust to furniture rather than adjusting it is not clear. The differences between the naturalistically observed deskwork situation and the experimental situation provide several hypotheses worth further investigation. Possibly, in student perception, institutionally owned furniture is not a part of the student's personal area of control. Yet the offices, where movement had been observed, also contained furniture not owned by the individuals. The differences which are salient are (a) that furniture is perceived as within personal control in an office and not in a classroom and (b) that the office is an individual (or perhaps a twosome) domain, while the class is a group of people. Probably the office group was an older group,

and this indirectly or directly mediated the results. However, there is little doubt the experimental distances were below the comfort range for most people.

If task-involvement in the memory experiment, to the detriment of personal comfort, is advanced as a hypothesis, another implication arises. Though no check of student attitudes was made in this study, one would expect such repeated minor discomfort to develop into a variety of irritations and negative attitudes among the students. If they do not know why they feel badly toward a given class or situation, they are apt to ascribe it to whatever is most handy—the teacher, the school, their classmates. This could be the beginning of an unfortunate deterioration in whatever valuable relationships other efforts in the school had begun. The example used in this study, slight frequent altercations with tables, is not in itself significant; yet it may typify a range of subtle frustrations in classrooms which are below the threshold of awareness for all concerned. But if they are pointed out or discerned through a careful survey of the physical plant, even a new award-winning one (4), they can often very easily be changed or at least ameliorated.

#### FOOTNOTE

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