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A Setting-Specific Analysis of Crowding

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Although the term *crowded* has been applied to many situations, most of the time spent by urban dwellers in crowded environments occurs in a relatively small number of settings. The everyday life of a city resident usually involves a fairly limited set of activities. Employed persons get up in the morning, travel on mass transit, walk or drive to work, remain at work all day (except for a lunch break), and then return home in the evening. During evenings and weekends, they shop and use recreational facilities such as parks, restaurants, and theaters. On occasions they may participate in a demonstration or large meeting or otherwise be part of a large public gathering. We submit that the majority of situations that people label as being crowded occur in one of these contexts.

There are several implications for applied research on crowding that follow from our suggestion that people are crowded in this limited set of situations. If we are to understand how crowding affects people and how it may be ameliorated, we must design studies focusing on each of these settings. The limited number of settings makes this feasible. If we are to understand crowding in residences, we must concentrate our research on variables relevant to residential crowding. Thus, seating strangers very close to each other for a short period of time and studying their task performance may shed very little light on the effects of living in a crowded apartment. Research manipulating the degree of privacy available and measuring ability to resolve conflict cooperatively would seem more relevant to residential settings.

The concern of this chapter, then, is the creation of appropriate laboratory analogues to real-world situations in which people become crowded. To create such analogues a careful consideration of the real-world situation is necessary.

For example, the applied researcher must consider what events in the environment precipitate the perception of crowding in that particular setting. He must know what kinds of activities are engaged in and are disrupted by crowding in that setting. Moreover, he must make a distinction between logical possibilities and applied reseach priorities. Although it might be interesting to know how the crowded subway rider feels about the person next to him, from an applied standpoint it is probably more important to assess the effects of the ride on his subsequent interactions with family members at home. Similarly, in terms of effective interventions, real-world considerations may be taken into account. One possible intervention in crowded subways is to provide much more space by building many additional subway cars, but practical considerations render this a low probability occurrence. Alternate strategies, such as exploring social manipulations related to traveling in the company of friends and thereby reducing the salience of the crowded environment, may be a more profitable investment of research efforts.

We would note that the basic researcher is much less subject to these constraints. He need not be concerned about shaping his experimental paradigm to conform to real-world contours. But the person who wishes to study the gross social effects of living in a crowded apartment or traveling daily on crowded public transportation facilities confronts a different problem. If he goes to the laboratory, he does so in order to create a controlled setting from which to generalize about real-world phenomena. To do so he must use a laboratory paradigm that is not conceptually different from the real-world setting about which he wishes to generalize. Although it is probably the case that some students of crowding have a basic research orientation, most of them hold an implicit value assumption about the importance of applied research. This assumption dictates a concern with generalizing from the laboratory to the real world. A survey of the introduction and discussion sections of journal articles concerned with crowding would support this hypothesis.

QUESTIONS TO BE ASKED BY THE APPLIED RESEARCHER

There are a large number of ways in which a laboratory paradigm may conceptually differ from the real-world situation that interests the applied researcher. Before beginning to design a study of crowding that has applied implications, the researcher must decide which setting he wishes to study. There seem to be five prototypical settings in which crowding occurs: residential settings, work settings, mass transit settings, shops and restuarants, and large public gatherings.

Once the setting has been chosen, the researcher must determine specific events that evoke the label "crowded" in that setting. This question is centrally important because it determines what paradigm he will choose to cause his subjects to feel crowded. Crowding always involves an imbalance between people and available space, but there seem to be three events that may occur as a result

TABLE 1

List of Questions to Be Asked in Designing Crowding Studies

A. Which central event will be manipulated to evoke the label "crowded"?
   1. Will persons lack the ability to control interpersonal interaction (i.e., will they lack privacy)?
   2. Will persons be in close physical proximity to others?
   3. Will persons experience congestion and a scarcity of resources?

B. How will concommitant environmental conditions be handled?
   4. How intimate is the relationship between the person and others with whom he is crowded? Are they family, associates, or strangers?
   5. What is the age composition of the crowded group?
   6. What is the sexual composition of the group?
   7. What is the distribution of ages within the group?
   8. What is the racial composition of the group? Is it homogeneous?
   9. What is the distribution of socioeconomic status in the group?
   10. Is the crowding a chronic situation or is it a one-time occurrence, or is it episodic (i.e., briefly occurring but repeated over several occasions)?
   11. What important activities occur in the setting? Are there tasks that must be accomplished, or is the maintenance of affective relationships the more important need in the setting?
   12. What physical features of the situation (such as heat, noise, or odors) that occur in addition to the inadequate people-space ratio may add to the stress of the situation?
   13. What important psychological factors (such as danger and unpredictability, norms, the opportunity for social comparison, adaptation, sensitization, etc.) may be inherent in the real-world setting?

C. What effects can be expected given the setting in which crowding occurs and the important central events in that setting? Which effects should be studied first given the large number of possible effects that can be studied?
   14. Are tasks performed in the setting and is it reasonable to expect that the performance will be affected by crowding?
   15. Is mood likely to be affected?
   16. Is the perception of the environment altered and is it a concern that should be given a high research priority?
   17. Are communication patterns likely to be affected?
   18. Is crowding in this setting liable to result in social pathology (crime, delinquency, etc.)?
   19. Are emotional and physical health likely to be affected? How?
   20. Would this form of crowding adversely affect the perceived quality of life?

D. In what time frame can the effects of crowding be expected to occur?
   21. Do the important effects occur prior to crowding when the person anticipates participating in a crowded setting?
   22. Do the important effects occur while the person is in the crowded setting?
   23. Do the important effects occur immediately after crowding?
   24. Do the important effects occur only after a sufficient accumulation of exposure to the stressor on repeated occasions?

E. What is the most useful research strategy for studying the effects of crowding in a given setting?
   25. Should the method be a laboratory analogue, survey research, archival research, interview, or field experiment?

of this imbalance. Each of these events will evoke the label "crowded." These events are congestion-resource scarcity, an inability to control and limit interactions with others, and extremely close physical proximity to others. We discuss each of these events in greater detail later and note their place in each of the prototypical settings.

Once the researcher has determined his central crowding manipulation, another set of setting/experiment similarity issues must be met. These involve such dimensions as the age and sex of the crowded interactants, the time frame in which crowding occurs, and other physical factors such as heat or noise that are salient aspects of the real-world environment. A more complete outline of these issues appears in Part B of Table 1.

To illustrate the importance of these issues for the ability to generalize about the effects of crowding, let us consider just one of them – the time frame in which crowding occurs. Crowding may be acute – that is, a one-time, short-term occurrence such as being in the midst of a public rally or demonstration. It may be chronic, as when people live together for many years in a crowded apartment. Finally, it may be episodic – that is, of short duration but occurring repeatedly, such as daily commutation on crowded mass transit facilities. In most laboratory studies of crowding, subjects are exposed to a single, short crowding incident. The effects of chronic exposure to crowded living conditions may be quite different from the effects of such short-term exposure.

Not taking such considerations into account may result in totally unjustified generalizations. For example, the common finding of studies of acute crowding involving extremely close interaction distances is that women react more positively than men (Freedman, Levy, Buchanan, & Price, 1972; Stokols, Rall, Pinner, & Schopler, 1973; Epstein & Karlin, 1975). However, our studies of crowded dormitory rooms at Rutgers show that in chronic situations involving lack of control over interpersonal interactions and resource scarcity, young women suffer more severely from crowding than do their male counterparts. The same interdependent style that leads to positive outcomes for women in the acute time frame seems to expose them to additional stress over long periods of time in this crowded environment. These results emerged only through study of chronic crowding. No acute experiment, no matter how carefully designed, could have revealed this pattern of results.

Thus, laboratory studies of crowding in residences may be best conducted on populations whose experience of crowding occurs not in the laboratory but in their real-world living conditions. The work of Baum and Valins (1973) and Baron, Mandel, Adams, & Griffen (1976) on residents of crowded dormitories are examples of how such research may be conducted.

Once the applied researcher is reasonably certain that his laboratory paradigm does not obviously differ from his real-world setting, other issues must be raised involving measurement. Here the central question is, "What effects seem both probable and important in the real-world crowded environment?" In some settings, crowding may disrupt task performance; in others communication may be

important; in chronic or episodic crowding, there may be effects on health or social pathology. The choice of appropriate dependent variables is a very complex issue. It is easy to choose to measure reactions to crowding that are essentially irrelevant to applied concerns. In the early stages of our own work, for example, we carefully studied the effects of crowding involving close physical proximity on cohesion within the crowded group. However, crowding involving extremely close physical proximity occurs most frequently and importantly on mass transit facilities. It is probably of only minor interest, then, to understand how much cohesion such crowded interactants are liable to develop. The most important interpersonal effects of crowding probably have to do with how individuals react to others in their work and home environments after they leave the crowded subway. Therefore, rather than group cohesion during crowding we might have more effectively studied the aftereffects of crowding on such processes as conflict resolution. Sherrod's (1974) work on frustration tolerance after such crowding and Singer, Lundberg, and Frankenhaeuser's (1978) work on catecholamine levels after subjects rode commuter trains reflect a more appropriate choice of dependent variables. A list of questions having to do with measurement issues is included in Part C of Table 1.

Another series of questions involves a consideration of technological interventions that may ameliorate the effects of crowding. First, the researcher must ask what event in the crowded situation is most clearly related to user stress in the setting? For example, when one is standing in line outside a crowded restaurant (congestion), he is in close proximity to others (close physical proximity), and their presence might inhibit intimate conversation (lack of control over interpersonal interaction). However, for most people the crucial problem stems from having to wait before they can react (congestion). Effective interventions would have to address themselves to this problem in particular. A second question is: What intervention strategies are most practical? Are social or architectural interventions possible? Finally, the researcher should ask, "What measures can I use to assess the effectiveness of the intervention?" Rather than relying on his own judgment, the researcher or architect should gather input from the users of these facilities.

EVENTS THAT EVOKE THE LABEL "CROWDING"

We believe there are several events that occur in crowded settings that are responsible for evoking the label "crowded." The most salient events we have been able to identify are congestion and resource scarcity, an inability to control and limit interactions with others, and close physical proximity to others.

Lack of Control Over Interpersonal Interaction

Lack of control over interpersonal interaction has been discussed extensively in terms of privacy needs (Altman, 1975) and in terms of excessively frequent,

unwanted interaction (Baum & Valins, 1973). This problem seems most important to crowding in work and residential settings. For example, in work settings constant interruptions by others may interfere with the performance of tasks. Such interruptions may occur intentionally, as when a colleague stops to chat at an accessible desk or inadvertently, as when conversations of nearby others are distracting. In dormitories Valins and Baum (1973) have found unwanted interactions with others to be a central element in a crowded residential environment. In the home, people may often wish to limit their interaction with others. For example, a husband and wife may wish to argue without the concurrent problem of dealing with their children. Inadequate space makes this type of interaction control impossible. Lack of control over interpersonal interaction is less important in other settings. In a crowded restaurant, the problem is not that one does not wish to be interrupted by other people waiting in line but rather that a number of people wish to use the same set of limited resources at the same time. Once inside the restaurant, however, tables spaced too closely together may inhibit intimate conversation. In this way, lack of control over interpersonal interaction may play a role in this setting.

Congestion

Congestion occurs when a number of people attempt to use a limited resource. Congestion in the context of crowding occurs when those people are physically present and their presence impedes the expected temporal flow or ease of progress toward the goal region. When this occurs, there often seems to be a tendency for people to congregate relatively closely together near the goal region. The analogy here is the proverbial "theater on fire." Even though the theater may be half empty, the need for rapid access to the doorway may produce a traffic jam. There are numerous examples of crowding related to congestion in city life. The traffic jam produced by too many cars attempting to use a given highway, the line at a popular movie, the cluster of people around an office Xerox machine, or children waiting their turn to use the slide in the park – all these cause a temporal delay in goal attainment. Congestion has an obvious role in crowding in residences and work settings and in shops and recreational facilities. It may play an important role in mass transit when inability to find a seat may influence reactions to crowded buses or subways.

Although congestion seems to be the central event in some crowded environments, it seems less important in other settings. As noted, once one is inside a crowded restaurant, congestion may be much less salient. Similarly, once one is positioned on a crowded bus or subway, other factors such as extremely close interaction distance may be central to the experience of crowding.

There is one form of congestion that gives rise to the label of "crowding" but that has no spatial component. This occurs when there is a shortage of roles or activities compared with the number of persons who wish to participate. Wicker (1972) has referred to this as "overmanning." Overmanning may be illustrated by the comment that the field of teaching is too crowded. An overabundance of

participants may cause entrance requirements to become more stringent. Wicker believes that once one is in the setting overmanning can lead to decreased efficiency due to such factors as diffusion of responsibility and a lowered sense of involvement in the activities.

Close Physical Proximity

When people are forced into extremely proximate interaction with others, the situation is frequently labeled as being crowded. The close proximity to others contributes to the perceived lack of control often found in crowded environments (Sherrod, 1974; Singer et al., 1978). In the city, extremely proximate interaction with others is found most clearly in mass transportation. The "sardine can" quality of a rush-hour subway is an instance in which people are clearly exposed to this aspect of crowding. Although this is an important event in some forms of crowding, it is totally irrelevant in some other crowded settings. In crowded apartments, people may never have to approach one another very closely. Here other events such as lack of control of interpersonal interaction and congestion dictate that the situation is crowded.

SETTING-SPECIFIC FEATURES AND THEIR IMPLICATION FOR RESEARCH DESIGN

Let us now turn to a description of the settings in which crowding occurs. In each of these settings, we will attempt briefly to answer the questions we have previously posed. These answers are not meant to present an all inclusive picture but rather to raise some points that seem important in considering these settings. To aid the reader we have placed numbers in parentheses at various points in the discussion of residential crowding. These numbers refer to questions found in Table 1. The reader who is interested in considering the types of questions we have found helpful in conceptualizing each of these settings is advised to consult Table 1 at the appropriate points in the discussion.

Residential Crowding

Crowding in residences was probably the most important form of real-world crowding in stimulating research on the effects of crowding. Early studies on crowding often refer to the potentially severe effects of residential crowding on slum dwellers and point to Calhoun's (1962) work on the disastrous effects of such crowding on rodents. Crowding in residences usually involves two events: lack of control over interpersonal interaction and congestion (1, 3). The first event may be seen in light of the concept of optimum spacing. Here we are concerned with finding the best spacing pattern possible to avoid critical negative interactions. interactions not easily forgotten, forgiven, or even accepted, in family life. The husband who comes home in a bad mood may have a high probability of arguing with his wife if he is forced, by the space available, into

her physical proximity. A den into which he can retreat may lower the probability that an argument will occur. Arguments of this kind can be quite disruptive; they can comprise a critical negative interaction. Optimal spacing can help to lower the probability that this will occur. Alternately, although enough space is usually available, the lack of sufficient facilities in one area may cause considerable friction in the family. For example, in a family of four or five people, all of whom have to leave the house by 8:30 A.M., the availability of only one bathroom may give rise to conflicts. Once again crowding, now in the form of congestion and resource scarcity, gives rise to an increase in the probability of a critical negative interaction.

Crowding in residences most often takes place with members of one's family (4). There are some major exceptions to this: these occur mainly among young adults in such situations as dormitories and shared apartments. Alternately, the aged and other institutionalized populations are other instances in which crowding in residences does not occur within a family unit (5). When attempting to study families in residences, however, differential roles and expectations comprise an important constellation of variables (13).

Crowding in residences is a chronic problem (10). In considering the effects of congestion-resource scarcity and lack of control over interpersonal interactions on the crowded family, one must consider the development of patterns of interaction. Conceptualizing this problem within a stress paradigm, chronic difficulties may lead either to adaptive coping mechanisms or to increased sensitization (13). Depending on the severity of the stress, we may first see one pattern and then the other. Avoidance responses and other patterns based on anticipation of a chronically crowded environment may also be important. It should be noted that these patterns may require time to develop (24). One might find a very different pattern of interaction among crowded roommates when they are studied at the beginning and at the end of the semester.

In speaking of residential crowding, the goal of the setting may be seen as very diverse (11). In most families, the home is used for both affective maintenance and the performance of a variety of tasks. Both functions are appropriate and necessary in the setting. Crowding may interfere with the ability of a husband and wife to resolve a conflict easily because of the interfering presence of children (17). Alternately, cooking in a kitchen that is simultaneously occupied by children at play may constitute an instance of congestion-related task interference. Task interference may also take place in the realm of cognitive activities (14). Children have to do homework, adults may wish to read books, magazines, or newspapers, and these may be interfered with by the congestion and lack of control over interpersonal interactions seen in the crowded home. Finally, when we talk about the functions of a home, we must note that it is supposed to function as a retreat from the outside world, a retreat that provides for rest, recreation, and relaxation. Crowded conditions that interfere with these functions may take their toll on mental and physical health (19).

As to the question of which effects are important, the effects of residential crowding on both the individuals in the home and their interactions, the family as a unit must be examined (22, 23). In the first case, the effects of residential crowding on work and school performance and the social lives and health of individual family members must be considered. A child who cannot do his homework easily or well because he is constantly interfered with by other family members, the adult who sets off for work in a bad mood (15) because of difficulties over use of the bathroom – these are examples of individual effects. Other important questions concern family interaction in general. Such issues as group cohesion, conflict resolution, and communication patterns seem to be fruitful areas for study.

Important effects of crowding in residences may occur before, during, and after actual crowding events. People may avoid spending time at home or refuse to invite friends to the home because of a lack of control over interpersonal interactions in the home (1, 21). The work of Mitchell (1971) provides evidence for the occurrence of this process. Furthermore, the research of Baum and Greenberg (1975) on the anticipation of crowding seems relevant here. The irritation that may arise among family members due to crowding is an example of how people may be affected while in the setting (22). Lowered tolerance for frustration at work after a crowded morning at home is an example of the aftereffects of residential crowding (23). The problems we find most interesting here concern effects on family interaction.

Finally, we must consider intervention strategies to ameliorate the problems of crowded residences. Although we have no clear and practical ways to alleviate crowding in residences, several things may be tried. First, the use of partitions to afford greater control of interpersonal interaction might be helpful. Second, scheduling may be helpful. Cooperative scheduling rather than competitive congestion may reduce fights over who gets to use the bathroom first in the morning. Other strategies such as providing apartments with more space and better facilities would clearly be helpful, but unfortunately seem less practical.

Crowding in Work Settings

There are a number of similarities between residential crowding and crowding in work settings. As in residences, the events that precipitate crowding in work settings usually involve congestion-resource scarcity and lack of control over interpersonal interaction. For example, congestion occurs when many persons have to wait their turn to use a Xerox machine. Lack of interpersonal control over interactions occurs when conversation from adjacent work-related activity interferes with one's ability to concentrate on required tasks. A combination of the two occurs when a shortage of partitioned office space prevents needed privacy. In crowded work settings, interactions occur with associates. Norms governing these interactions differ from the norms governing kinship interactions or interactions with strangers. Furthermore, one's affective set toward co-workers

may be positive, neutral, or negative, which may then ameliorate or aggravate crowding experiences in the work environment.

As in residential environments, crowding in work settings is usually a chronic problem. Although workers may sometimes move to new and more spacious quarters and otherwise find ways to reduce problems related to crowding, this is more the exception than the rule. In work settings, the interference with task performance is an obvious problem. However, questions of morale must also be considered because they play an important role in work efficiency. With respect to task interference, the type of tasks workers are engaged in must be considered. For example, crowding may affect attentional capacity (Cohen, 1978). The attentional demands placed on a flight control operator differ from the demands placed on a manual laborer. Heightened arousal stemming from crowding may facilitate the performance of simple tasks while interfering with the performance of complex ones. In issues involving morale, turnover and absenteeism can often be traced to low morale stemming from uncongenial work environments and are problems of serious concern to management. It should be noted that social comparison processes may also play an important part in lowered morale. The individual who is aware that comparable others in a different office have more abundant facilities or greater amounts of privacy may feel especially thwarted and may experience a lowering of morale.

The potential for intervention strategies seems greater in work settings than it does in residential settings. If the owners of a company can be convinced that an intervention can increase productivity and hence profits, they should be highly motivated to try it. Industrial designers have had considerable experience planning environments that seek to minimize task interference. We believe that user evaluation studies would probably be helpful in deciding between possible intervention strategies such as partitioning, the use of modular office furniture, and so on. Surveys of users that are sensitive to and focus on concerns about congestion and lack of privacy will probably suggest strategies that are different from surveys based on the assumption that the critical problem is aesthetics, traffic flow, or the like.

Finally, one must consider problems related to overmanning. Ironically, featherbedding may have consequences for morale when it results in there not being enough work to go around. Wicker has treated this subject extensively, and the interested reader is referred to his discussion (Wicker, 1972).

Crowding in Transportation

The rush-hour subway rider is cramped, jostled, pushed, and hassled by strangers who are often smelly, weird looking, and indifferent. Seats are often impossible to find, and the struggle to get to the exit before the doors crush your fingers must give nightmares to a fair number of New York City commuters. Thus, transportation crowding involves both extremely close physical proximity and congestion-resource scarcity.

Transportation crowding usually occurs with strangers. Norms governing interaction on mass transit usually dictate a minimization of involvement and a high degree of ritualization, which suggests some nonobvious factors in an appropriate experimental design. In our own program of research, we have found that whereas groups of males maintain low levels of interaction when asked to sit in a small room, groups of females and mixed sex groups in this same environment tend to engage in considerably higher levels of interaction. Thus, the use of groups of males seems to capture more closely the phenomenology of crowding in mass transit facilities. Transportation crowding is usually episodic – that is, it occurs for brief periods on a regularly recurring basis. When we consider the goal of the setting, the temporal context is especially important. Crowding in this context must be seen as an intermediate stage between two other settings – home and work. It follows that mass transit crowding should be considered in context. Crowding after a long and frustrating day's work may be quite different from crowding early in the day. Similarly, if one is involved in a conflict after being crowded, his behavior may be less constructive than if he had had a chance to relax.

Transportation crowding may also function as a conduit or medium through which styles that may be adaptive in one setting are brought into other settings in which they are less adaptive. For example, a clerk in the Division of Motor Vehicles treats waiting customers as numbers. He is usually serious, often harsh, and generally all business. A car salesman, a clerk in a delicatessen, and a Wall Street broker spend most of their working day competing, pressuring people, and acting superficially. Such behavior may increase their income, but the money earned may have to be spent on alimony payments if these behavioral styles are carried over into interactions at home. The pushing and shoving and rush to find a seat on the train may fan the competitive flames started at work and keep the embers burning until crossing the doorsill, whereas a chance to relax might have put out the fire. Hence, coping strategies used to mitigate the stress of the work setting may have severe effects on marriage and family life, if they are brought into the home as behavior residues. One other case of transit crowding should be noted – crowding on city sidewalks. Manhattan lunch seekers daily experience close physical proximity and congestion at noontime. However, in American cities, the level of crowding seldom reaches the level seen on buses and subways. If one has the time, a crowded city sidewalk may still display the diversity and verve of city life rather than its dehumanization and alienation.

Some of the limitations of laboratory paradigms should be considered here. Most of the laboratory studies of crowding seem most applicable to transportation settings. However, although it is easy to employ a crowding manipulation that creates close physical proximity, some of the other aspects of transportation crowding are not easily recreated in the laboratory. In the New York subway system, for example, the person next to you might well be dangerous. Readers of New York newspapers have become accustomed to reading of acts of violence

occurring on mass transit facilities. Such information creates an atmosphere of fear that may be an important component of the stress associated with close physical proximity to strangers on buses and subways. Because laboratory environments are considered safe by subjects (Epstein, Suedfeld, & Silverstein, 1973), it is difficult to incorporate the unpredictability and danger of mass transit crowding in laboratory experiments.

A variety of intervention strategies might be effective in alleviating the effects of mass transit crowding. In our own program of research, we are presently studying the effects of traveling with a friend and the effect of relaxing for a short period immediately after being crowded but prior to arriving at home. Staggered work hours represent an ongoing attempt to reduce crowding in mass transit facilities. However, these strategies may be needless. Exorbitantly high fares combined with dangerous and dirty facilities may effectively reduce the incidence of transportation crowding in the foreseeable future.

OTHER SETTINGS

We have dealt at length with three settings in which crowding occurs. We will now discuss briefly the types of crowding that occur in shops and restaurants and at large public gatherings.

Shops and restaurant crowding most often involves congestion-resource scarcity. The waiting line at the checkout counter or outside a crowded restaurant is prototypical. Lack of control over interpersonal interaction may also be a factor, as is the case when an intimate conversation at the dinner table is inhibited by the presence of nearby others. However, it seems clear that laboratory paradigms designed to study crowding in shops and restaurants should concentrate on congestion.

In the situations mentioned above, crowding takes place in the presence of strangers, although one is frequently accompanied by friends and relatives. Crowding in this context tends to be epsiodic. There are certain predictable times when crowding is at its worst in stores and restaurants. Most city dwellers can fairly accurately predict how crowded a store will be at different times during the week. Although they may stay away from the store at peak shopping hours, the vision of crowds at the sales counters may dampen their enthusiasm for shopping and decrease the quality of city life. Probably the most negative aspect of this form of crowding is the sense that goods and services are not worth the trouble it takes to attain them. Repeated exposure to these experiences may lead individuals to avoid partaking of many of the available resources that lend richness and appeal to city life.

Finally, let us consider crowding in large public gatherings where close physical proximity may play a role. Congestion in the form of insufficient seats or people blocking one's view of events may also be important. Although most of

the group may be strangers, usually at least one other person is a friend in crowds at demonstrations, parties, and sporting events. There are frequently norms that encourage interaction among strangers in such cases. These norms differ from those in mass transit settings where interaction with strangers is discouraged. Large public gatherings usually have a central focus. The task is usually to attend to that focus. Here, for the first time, some degree of crowding may add to the enjoyment of the event. The party that cannot get off the ground because too few people have attended and the play whose cast is upset because of the sparse audience are examples of the negative effects of too few people. The important sociopsychological variables here are those of mob psychology. Contagion effects, deindividuation, depersonalization, and diffusion of responsibility may occur when individuals are part of a large public gathering.

THE QUALITY OF CITY LIFE

We have noted that crowding occurs in conceptually different settings. Yet urban dwellers go from one setting to another in the course of a typical day. All the experiences they have in all these settings have a positive or negative effect on the way they feel about themselves and their world. In effect, this urban "gestalt" is greater than the sum of its component experiences. Thus, cities are both crowded and exhilarating, noisy and exciting, dirty and vibrant. Furthermore, a city also has a personality in the eyes of each of its inhabitants, a personality that differs depending on whether one experiences the positive or negative aspects of city life. The literature from another area of social psychology provides an analogy here. Solomon Asch has described how certain central traits influence person perception (1946). He has shown, for example, that a person described as intelligent, industrious, and warm is seen as a likeable sort of chap whereas his counterpart, who is described as intelligent, industrious, and cold, is seen as a ruthless Machiavellian. Thus, the warm-cold distinction organizes our reactions to the individual. So it is with a person's perception of city life. We suspect that a crucial determinant of a person's attitudes toward cities lies in his position on a "vibrancy-hassled" dimension. For those people whose perception of the city is organized around its central trait of vibrancy, the crowds, the noise, and the traffic jams all testify to the excitement of city life. For example, panhandlers are quaint, and sidewalk hawkers are interesting rather than annoying. The opposite is true if one's perception is that the city is a hassle.

We suggest that there is a threshold above which the city no longer appears vibrant but, rather, is seen as a hassling environment. Just as certain acts transform our perception of individuals from sane to crazy, so certain events may tip the balance in favor of a characterization of the city as a difficult place in which to live. Repeated and prolonged experiences of crowding may play an important part in such balance tipping.

SUMMARY

In this chapter several points have been made. Crowding has been used as a global term to describe a variety of different situations. Applied research must create conceptual analogues to real-world settings. To aid the researcher in constructing appropriate laboratory paradigms, three types of events that precipitate the label "crowding" have been delineated and five settings in which crowding occurs have been described. In conducting laboratory research on any of these settings a number of questions need to be asked. Answers to these questions will help to guide the choice of dependent and independent variables that should be used in creating the appropriate laboratory analogue. Furthermore, we attempted to provide some tentative answers to the questions we have raised. The list of answers is meant to be suggestive rather than exhaustive. Finally, we have noted that the quality of city life is affected both positively and negatively by the multitude of crowded settings that are an integral part of the city. We acknowledge our own bias in favor of applied research. Certainly we are not suggesting that others need to conduct research that can provide answers to real-world problems. We have always had a high regard for basic research, but our own preference is due in large measure to our personal socialization as "practical theorists." For those sharing our "applied" predilection, we hope this schema is a useful guide

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