

CROWDING AND PRISON VIOLENCE

Integration of Research and Theory

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A review of the literature on social density/crowding effects indicates the need for a process explanation of the density, violence, crowding relationship. The mediational variables that should be included in such an explanation are age, transiency, and their relation with social density and crowding, as described in the model. Unique to this model is the treatment of crowding as a cognitive-evaluative state and as a dependent variable. In an attempt to indicate its utility, the model is, in the final segment of the article, applied to a concrete situation.

On the basis of his review of the crowding effects literature, Lawrence concluded that there "is no clear demonstratable relationship between high density and aberrant human behaviour, or between the crowding of the individual and aggression" (1974: 718). Although his review is a good one, it suffers from a weakness common to the genre. Routinely, extensive reviews (cross-species and cross-situational) are preferred to the intensive analysis of crowding theory and research on those real-life settings that appear to be best suited to unravelling the

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complexity to be discovered there. Prisons, because they are more closed and also more homogeneous than other kinds of real-life settings (e.g., cities) constitute a social context especially well suited to this analytical task.¹

Would Lawrence's conclusion still apply when prisons, which he did not review, are selected as units of analysis? This is the question I shall be trying to answer in the pages that follow. More specifically, this article attempts first to answer an empirical question: Is the relationship between social density and various violent "behavioral sink" phenomena (self-injury, assaults, homicides) invariant across the same kind of prison in different societies and also across different prisons in the same society?² Should an empirical generalization be found to exist, one could then pose the second or theory question: What factors or mechanisms underly the relationship?

Following the order in which these questions are posed, my inquiry will be organized in the following way. First, the form, strength, and direction of the relationship between crowding and trouble in prisons will be examined. Then, an attempt will be made to theoretically integrate the findings described in the first part of the article. The theoretical task is guided by these observations.

First, the effects of social density upon social behavior are mediated by social control processes. Therefore, research findings should be integrated with well-established social learning principles relevant to the process of social control. If, as Schmidt and Keating hypothesize, "crowding is an attributional label applied to a setting when situational density results in a loss of personal control" (1979: 210), the thesis being proposed here is that this occurs because social density is functionally related to social control processes that, in turn, influence the individual prisoner's sense of autonomy.

Second, social density influences the behavior and attributions of both prisoners and guards. As mediating social control processes involve interactions and attributions among and between guards and inmates, an adequate theoretical integration would seem to require a focus on both groups. The fact that neither of these two points seems all that relevant to most of those

whose work is being reviewed here is a surprise. It is also an opportunity.

Third, extant research on violence in prisons indicates that age is not only strongly and inversely associated with violence but also that this relationship is invariant across a variety of prisons (Ellis, 1974, 1982a; Bennett, 1976).³ An examination of inmate population increases in different prison systems (e.g., Georgia, North Carolina, California, Canadian penitentiaries) indicates that these increases are mainly due to the influx of younger inmates. These findings strongly suggest that age must be included in any attempt to explain density effects. The same suggestion applies to transiency because transiency is related to violence and also with inmate population increases.

Finally, where age and/or transiency have been included as conditional variables, the ways in which they are influenced by social density and in turn influence other variables associated with violence, remain unspecified. An adequate theoretical integration should include an attempt to specify mediating associations or influences.

CROWDING AND PRISON VIOLENCE: RESEARCH FINDINGS

The results of various attempts to investigate the relationship between density (social and spatial) and prison violence are presented in Table 1. An examination of this table yields the following conclusions. First, social density appears to be consistently associated with infractions and the associations are statistically significant. Second, the associations between social density and infraction rates is strongest in relatively large institutions containing youthful or young adult inmates. Third, apparent consistency in findings occurs despite variations in (a) the societies in which prisons are located as well as in different state prison systems within a given country (the United States), and (b) in the researchers who studied the same prison at different points in time. Fourth, taken together these findings are based on the study of over 150 separate prisons containing over 50,000

TABLE I
Crowding Effects in Prisons: A Summary of Research Studies

Author(s)	Date	Subjects		Data		Measurement			Controls on Population Composition	Findings	Caveats	Crowding Effects Isolated?
		Prisons	Prisoners	Aggregate	Ind.*	Spatial Density	Social [†] Density	Crowding [‡]				
1. Megargee	1977	1 Federal (youth)	558	Yes	No	Yes (institution)	No	No	None	Spatial density is significantly associated with the rate of disciplinary violations ($r = 0.42$, $p = 0.005$) in the young adult institutions studied.	The effects of spatial density are compounded with those of social density (transiency).	No
2. Nacchi et al.	1977	37 Federal institutions (all)	20,000	Yes	No	No	Yes (institutions)	No	None	A significant association between social density and assaults ($r = .26$ for all institutions, $r = .47$ for youth and $r = .63$ for young adult prisoners).	Effects of changes in composition of population on assaults compounded with changes in social density.	No
3. McCain et al.	1980	6 Federal institutions	1,400	Yes	No	Yes (within institutions)	Yes (within institutions)	Yes (individuals)	None	Living units which contained the youngest inmates had the highest infraction rates ($p < .001$).	Aggregate data measures and measurement of infraction rates only in El Reno combine to vitiate any attempt to isolate age effects from those of social density.	No
4. Jan	1980	4	9,036	Yes	No	No	Yes (institutions)	No	No	The association between social density and assaults and disciplinary confinements strongest in youthful offender institutions	Over the three year study period population composition changes coinciding with changes in social density could explain the results.	No
5. Carr	1980	70 (Georgia Prison system)	>10,000	Yes	Yes	Yes (institutions)	Yes (institutions)	No	Yes	Strong and statistically significant association between crowding and infraction rates in Alto, an institution for youthful offenders	Within institution measures of social density not made and effects of crowding independently of transiency not demonstrated.	Yes (transiency expected)
6. McCain et al.	1980	Oklahoma State Prisons (all)	>3,500	Yes	No	Yes	Yes		No	violent deaths highest during years in which population density was greatest ($p < .05$)	Density measures compounded with each other and density with changes in composition of inmate population.	No
7. Ellis	1982	Canadian Federal Penitentiaries (N = 31)	>9,000	Yes	No	Yes	Yes		No	Variations in social density are associated with changes in relevant offence rates ($p < .05$).	Some sources of compounding as in the preceding archival study. Changes in reporting of infractions constitute a further source of compounding.	No

(continued)

TABLE 1 (Continued)

Author(s)	Date	Subjects		Data		Spatial Density	Measurement		Controls on Population Composition	Findings	Caveats	Crowding Effects Isolated?
		Prisons	Prisoners	Aggregate	Ind.*		Social Density	Crowding				
B. Farrington & Nuttall 1980	55		>21,000	Yes	No	Yes (institutions)	Yes		No	Prisons with highest assault rates were large overcrowded institutions (>600 inmates) housing younger inmates.	Density measures compounded with each other and with changes in population composition.	No

1. Square feet of living space per inmate (inmates the same, space varies).
2. Prison population divided by prison capacity (inmates vary, space does not).
3. Subjective perceptions and evaluations of individual inmates.

*Individual

American, Canadian, and English prisoners. Fifth, while age, transiency and/or size of the prison population are strategically implicated in most of the findings, crowding effects have been isolated and are clearly implicated in only one.

The fifth and final conclusion is perhaps the most important one because it indicates that despite their best efforts, all but one of the students of the problem have failed to discover an unambiguous relationship between social density and/or crowding per se and violence in prisons. The consistency in findings allegedly supportive of a positive, linear relationship between social density and violent infraction rates may, on closer examination, turn out to be largely a function of shared methodological inadequacies. Conversely, the failure to isolate crowding effects is due, in part, to the failure to collect both aggregate and individual (inmate and staff) data and to control for those variables (age, size, race, urban/rural residence, offense type, custody grade, institutional career phase, transiency, prison type) that theory and/or research indicate are important in the setting in which social density effects are being investigated.

SOCIAL DENSITY EFFECTS: METHODOLOGY AS CAUSE

To point to the failure to isolate social density effects and to demonstrate a relatively unambiguous relationship between density and prison violence is to draw attention to the internal validity of the studies presented in Table 1. The predominant concern of those researchers whose work is most often cited (e.g., Nacci et al., 1977; Jan, 1980; Gillis, 1979) is not with internal but with external validity.⁴

Threats to the internal validity of most of the studies presented in the Table arise in the contexts of both data collection and data analysis. Because the problems in both contexts are shared ones, the consistencies described in Table 1 may well be artificial, that is to say, a by-product of poor, shared methodology.

In this connection, consider first, the way in which the independent (social density) the dependent variable (assaults) were measured. All of the studies used institutional statistics to

measure the former and officially (staff) reported data (infraction rates) to measure the latter. This leaves open the possibility that social density and assaults are not really positively associated with each other, as they report, but that institutional staff respond to increasing social density by *reporting* more of the assaults they know of. They do so because this is one way in which inmates may be moved out of their institution and/or their area of responsibility (cell block, range, dormitory) within the institution. Assaults that hitherto had been dealt with informally are now officially reported by staff because such reports represent one way of reducing social density, and/or of confirming, for occupational reasons, a relationship between "crowding" and violence in prisons.

Internal support for this explanation of homogeneous findings comes, in part, from the studies themselves. Thus, regardless of the unit of measurement (an entire prison, a cell block, range, or dormitory), the results are the same. This means first, that neither Nacci et al. (1977) nor Jan (1980) can really say that increases in assaults occurred in those residential units *within* institutions that were most socially dense. It also means that one may expect to find a positive relationship precisely because it does not really matter where, in the institution, social density increases, just as long as it does increase. As a matter of fact, it is entirely possible that staff in less socially dense areas (cell blocks, etc.) will also increase the number of assaults they officially report as a way of influencing the number of additional inmates they subsequently receive.

In sum, failure to collect self-report data from staff (e.g., on formal and informal social control strategies and on assaults they are aware of) and from inmates (on assaults) constitutes a serious and shared inadequacy. This shared problem may be responsible not only for the spurious consistency in findings but also for a spurious inconsistency regarding the mediational effects of age on the association between social density and assaults.

The findings of Nacci et al. (1977) and Jan (1980) indicate to them that the relationship between density and assaults is unrelated to offender age. In turn, I would suggest that reliance

on poor measurement strategies and even poorer models of statistical analysis vitiates the drawing of valid conclusions regarding the linkages they investigated. For example, although both researchers rely on official data (staff reports) to measure the dependent variable, neither attempts to measure the actual number of assaults known to staff, reported or not. In our North Carolina study we did this and discovered the underreporting of assaults to be greatest in youthful institutions (Ellis, 1974).

Second, we discovered that the most violent or troublesome youthful offenders would be "casaded" up to adult institutions while relatively benign older inmates serving relatively short sentences would be cascaded down to youthful offender institutions to carry out a variety of institutional tasks.

Third, age and institutional type (security level) are confounded in their analysis. Fourth, the failure to compute partials, to control for variables known to vary with both social density (e.g., population composition variables) and assaults (e.g., density level of the institution) seriously jeopardizes the validity of their findings.

To rely upon staff reported data on assaults (infraction rates) is, as social theorists remind us (Becker, 1963; Kituse and Cicourel, 1968, 1972; Lemert, 1967), to formulate a theory of *staff* behavior in the face of actual and/or expected increases in social density. In this specific connection, none of the researchers whose results are reported in Table 1 seem to be fully aware of the theoretical implications of their measurement decisions. This, at least, is what I infer from their failure to measure and subsequently control for staff-related variables. This is a serious problem. It is also a shared one.

Equally serious and also shared is the danger of falling into the "spurious precision" trap by reporting results in terms of aggregate, zero-order correlations alone. Thus, not merely the magnitude but even the sign of the correlations between social density and infraction rates reported by Jan (1980), Megargee (1977) and by Nacci et al. (1977), could change if individual data on the same variables were collected and analyzed in the same way (Hannan, 1970; Paulus, 1980). Where, as in Carr (1980), individual and aggregate level data on the same variables are

collected, they should also be entered in the same (e.g., regression) equations. In no study, including Carr's, was this done.

Finally, all but one of the studies reported in Table 1 relied exclusively on archival data. This makes it very difficult, if not impossible, to separate the effects on violent infraction rates, of social density and changes in the physical movement of inmate populations. In almost any through-time archival study, the latter variable will almost certainly vary with the former even when no major changes (e.g., Megargee, 1977) occur within the institution being studied.

The problems characterizing the research studies presented in Table 1 are serious. They can however be improved upon. Methodologically, this may mean modifying and implementing the kind of research model suggested by Braucht, Loya, and Jamieson (1979). Theoretically, attribution theory and labeling/social reaction formulations, are not only relevant but *require* the kind of double-interaction research model (person/prison and staff-inmate) identified above. Substantively, research on violence in prisons plus Carr's research on crowding and infraction rates (1980) indicate that the effort to integrate theory and research on this topic can be quite useful. Moreover, the kind of prisoner group (youthful prisoners) and the kind of prison (large prison) in which social density effects on violence are most likely to discovered has been clearly identified (Carr, 1980).⁵

If it is to be conducted with economy, the attempt to actually discover and isolate social density effects on violence will require some sort of theoretical guidance. To provide such guidance is the major purpose of the model that will be described in the following.

RESEARCH AND THEORY: AN INTEGRATION

"Prisons," observes Hans Toch, "are more frequently described as 'crowded' than other institutions and crowding is seen as a cause of mental illness, violence, riots and recidivism" (1977: 30). Crowding, he goes on to say, is a label applied to a prison

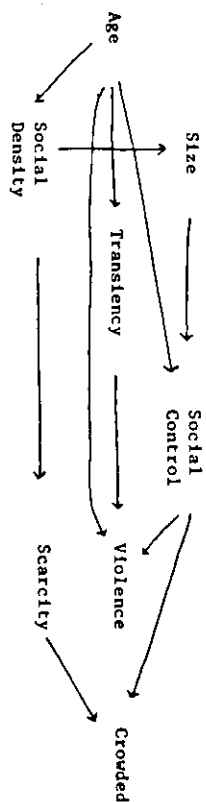


Figure 1: A Model Showing the Interrelationships Among Variables Mediating the Effects of Social Density on Prison Violence

characterized by "offenses to the senses" (given off by other inmates) rather than an "invasion of space" contingent upon a mere increase in the number of inmates. Toch's treatment of crowding as a dependent variable is useful. There is, however, more to the label-generating process than noxious smells, sights, and sounds. What this might be is suggested not only by Toch's own work on violence but also by the prison density effects literature reviewed here. It is with the concept of crowding that the discussion of the model (Figure 1) purporting to explain prison research results begins.

CROWDING

At a fairly high level of generality, crowding can be defined as an aversive or noxious cognitive-evaluative condition. As such, it is a condition individuals attempt to evade or avoid if they can. More specifically, crowding in prisons is defined as an attributional label applied by guards and inmates to a prison in which increases in the number of new inmates in relations to the amount of space available are regarded as increasing the "pains of imprisonment" (Sykes, 1958) beyond the levels they had gotten used to, expect, or believe "ought to be."⁶

Crowding, in the sense described here, is treated as the major dependent variable and is analytically separated from social density for a number of reasons. First of all, social density levels

and attributions and evaluations of crowding vary markedly both across societies and across different social groupings and situations in the same society (Fromm, 1973; Schmidt and Keating, 1979). Because individuals interpret and label given social density levels in different ways and also because the attributions themselves have independent effects on prisoner behavior, it seems important not to simply assume that variations in a structural variable (social density) are invariably associated with particular kinds of variations in psychological states (meanings). Crowding, in other words, is problematic. The attribution is made only under certain environmental conditions. Social density is one of these structural conditions.

VIOLENCE AND CROWDING

The violent behavior referred to in this model is intentionally expressed behavior that harms another individual or individuals and/or another person's property. This definition covers both the kind of violent behavior whose probability is largely a function of consequences which attend its expression as well as the kind of violence that may be elicited by anger or stress. Regardless of the kind of violence involved, its amount, seriousness, and distribution will influence the label that is applied to the prison. With social density held constant, the greater, more serious and more widely distributed (across prisons) the violence, the more likely is the prison to be labeled crowded. This occurs partly because a crowded prison is thought to be the kind of prison in which such behavior commonly occurs. Second, an increase in social density—any increase in the prison space ratio to which inmates have become accustomed or believe ought to exist—is, for a number of reasons, aversive to them. Violence that normally occurs for a number of other reasons can be used in an attempt to restore pre-existing social density arrangements when the label crowded is successfully applied to the institution. If, in the former case, prisoners apply a "situated reason" (crowding) for violence (Mills, 1959), in the latter they make strategic use of the attribution "crowded."

SOCIAL CONTROL AND PRISON VIOLENCE

Social control is a process in which guards and inmates, as individuals and as members of groups, attempt to make less probable behavior or conditions they define as illegal, deviant, or more generally, aversive to them.⁷

Included as social control variables are not only sanctions (positive and negative) and the probability of their contingent application, but also the moral effects of the rules/laws and of the ways they are actually, or are perceived to be, enforced. The perceived legitimacy of the criminal justice system and of its constituent parts are vitally implicated in social control at the level of both society and its prisons (Andenaes, 1975: 342). Meanings attributed by prisoners, meanings that are at least partly contingent upon crowding, may help undermine the moral effects of legal and administrative rules or norms.

Prisoners struggle daily to resist being labeled "animals."⁸ Having to live under crowded conditions, under conditions that they discover have been deemed unfit for animals (Lieber, 1981; Greenhouse, 1981: 10), does not seem to encourage them to maintain beliefs they once might have had in the moral worthiness of the criminal justice system generally and of its "corrections" division in particular. Social control, then, is associated with violence via its sanctions aspect (the probability and salience of contingent benefits and/or burdens) and its moral or perceived legitimacy aspect.

TRANSCIENCY AND SOCIAL CONTROL

Transiency refers to the rate at which persons in prison living/work/recreational spaces are changed. The transiency of a prison varies with the degree to which any given inmate has to interact or deal with relative strangers. Transiency, then, refers to an outcome—the proportion of relative strangers in a prison—that is caused by physically moving persons out of a given prison space and by replacing them with others.⁹

The effects of transiency on violence are, as the model indicates, indirect. That is to say, their effects on violence are mediated by the changes they induce in social control variables and in the amount and nature of competitive social relations. Among others, the association of transiency with trouble has been emphasized by Colvin (1981), Davidson (1974), and Polisky (1962) for U.S. prisons; McGuigan et al. (1977) for Canadian penitentiaries; and alluded to by Morris and Morris (1963) and Farrington and Nuttall (1980) for English prisons. In attempting to build upon their contributions I shall, following such social control theorists as Hirschi (1978), take deviation (the inclination to behave violently) as given and attempt to explain variations in conformity with official and inmate roles regulating inmate violence. Transiency, I shall argue, makes conformity more problematic because it undermines three bases of restraint among prison inmates: coercion, exchange and attachments to conforming others.¹⁰

In societies generally as well as in prisons, conformity is a function of both "ropes of" and "stakes in" conformity (Harris, 1982: 14). Via such processes as identification and generalization, attachments to conforming others constitutes a rope that binds individuals more strongly to a rule regulated way of institutional life. In prisons with transient populations however, one important basis of attachments to staff—the presence of inmates who are in one place (e.g., range) long enough to get to know individual staff members and vice versa—is undermined. By inhibiting the development of staff-inmate attachments, transiency undermines an important basis of informal social control.

Second, transiency decreases the ability of staff to coerce conformity by punishing inmates. As a process of social control, coercion depends for its effectiveness on the ability of staff to inculcate in inmates a fear of the consequences of violent behavior that outweighs the gains contingent upon behaving violently. Fear of consequences covers both the likelihood of being discovered and also the severity of the contingent sanctions. Discovering deviants is, in prisons, to an important degree a function of the willingness of inmates to inform on each other. In

transient prisons, inmates are often not in one place long enough for them to obtain the variety of benefits (e.g., desirable institutional jobs) that the staff member to whom they gave information can bestow upon them. One result is fewer snitches in prisons with transient populations. The fewer the snitches, the smaller the amount of inmate deviance—including its violent form—that is discovered by staff. The smaller the number of discovered violent deviants, the fewer the number of violent inmates available to be punished.

Third, the process of social exchange, a process that is very important in underwriting social order in the prison, is also undermined by transiency (Sykes, 1958). Most (or much) commodity or service exchanges in a prison are based on credit. Credit, implying trust, helps underwrite the exchange process. Transiency helps undermine prisoner exchanges by making the granting of credit too risky. Inmates who owe may not be in the institution long enough to repay the debt or to enable the creditor to coerce payment.¹¹ Just as transiency decreases the prisoners "stake in conformity"—they have little to gain by establishing a reputation for credit worthiness in this institution because they won't be there very long—it also decreases the probability of contingent harm—for welching on a deal—for the same reason.¹²

SOCIAL DENSITY AND SOCIAL CONTROL

Social density, as the model indicates, has only indirect effects on violence. This means that social density influences violence via its effect on size, on transiency, on social control variables, and on scarcity. Social control variables are influenced by social density in a number of ways.

SOCIAL DENSITY AND SIZE

As the numerator in the mathematical operation that yields the social density index, increases in social density are always

associated with increases in the size of the prisoner population. As the size of the prisoner population increases, the task of managing or controlling prisoners becomes more difficult (Bennett, 1976; Berman, 1981; McGuigan, 1977; Mohr, 1971; Wilsnack, 1976). Associated with decreases in the effectiveness of social control strategies is an increase in violent interactions.

SOCIAL DENSITY AND TRANSIENCY

Given relatively fixed economic parameters, one correctional response to an increase in the number of prisoners is to "cascade" prisoners "up" to more secure or "down" to less secure institutions. From the least secure there may be more releases and from the more secure there may be more paroles. Within the institution, the more secure there may be more paroles. Within the institution, simply moving an inmate from the main or general population to segregated and perhaps solitary confinement can less easily be done. Instead, an inmate from elsewhere in the prison must be moved to replace him. Social density, then, causes an increase not only in the rate of movement in and out of an institution but also causes inmates to be moved into and out of different living spaces within the same institution.

Density seems to increase the reliance of prison staff on "static" security measures. These involve, "both the physical restraints built into the institution and the security routines in effect" (Mohr, 1971: 16). Static security measures constitute aversive forms of control. These, unlike positive forms (dynamic security measures) tend to be more closely associated with escaping and/or avoiding detection than with either inhibiting violent behavior or behaving in alternative ways (Skinner, 1973).¹³ Given a congregate inmate society, security measures are less effective in regulating deviant behavior (except at the Pennsylvania [Cherry Hill] System extreme.) These less effective social control measures tend, to an increasing degree, to replace reliance on "the program" (dynamic security measures) as social density increases.¹⁴ One consequence is an increase in violent forms of deviant behavior.

Further, escaping from or otherwise avoiding staff mediated punishments is facilitated by the fact that density makes effective

surveillance more difficult. Under socially dense conditions then, the salience probability of inmate mediated rewards—rewards contingent upon behaving violently—remain the same or increase. The *probability* of staff-mediated negative sanctions, on the other hand, decrease. Violent behavior, under these conditions, would increase. The increase will probably be greater if the *salience* of staff punishments also decreases. Under socially dense conditions the ability of staff to move inmates to a "worse" prison condition (e.g., a punitive segregation cell) decreases because these tend to be already occupied by prisoners. They may have to be moved back to a "better" situation (e.g., mainline population) sooner than might otherwise have been the case in order to make room for the incoming troublemakers. The "sentence" for deviant behavior in prison, the time actually served in a worse-than-mainline-living condition is reduced. Other inmates see those inmates who have been punished for behaving violently returning to the general population much more quickly than had hitherto been the case. Because of the perceived decrease in the severity of institutional sentences for violent behavior, the general and individual deterrent effect of staff sanctions is reduced. This constitutes the third way in which social density influences social control in the prison.

CROWDING, SCARCITY, COMPETITION, AND VIOLENCE

Many material and social/psychological wants are, for humans everywhere, scarce relative to the demands for them. In prisons, a number of important wants or resources are, as a matter of policy, deliberately made even more scarce than they are thought to be for most free persons. This is called the "principle of less eligibility." The "pains of imprisonment" (Sykes, 1958: chap. 4) represent an attempt to implement what this principle calls for. The prison then, under a normally operating population-resource ratio, is characterized by greater scarcity than would be true for most "free" societal contexts.

Now prisoners are/were, on a more or less intermittent basis, also free persons. As such, they bring with them to the prison the

same wants as legally free persons. Imprisonment, most discover, means a marked reduction in the quantity and quality of resources available for satisfying their biogenic and socially induced wants. When these already reduced resources—material and psychic—are held roughly constant and the demand for them increases because of increased population pressure, what Fromm (1973: 132) calls "malignant scarcity" is present.¹⁵ Malignant scarcity is present when the satisfaction of basic biogenic and/or social needs becomes problematic. At this point, means of want satisfaction are likely to be selected exclusively on the basis of their technical efficiency. The routine and mutual reliance on technically efficient (rather than legitimate) means of satisfying wants characterizes Hobbes's "natural [war of all against all] condition."

In addition to the degree of scarcity, the nature of the things made scarce also influences the probability of violent behavior. Evidence from a variety of sources (Foster, 1965; Colson, 1974; Rapaport, 1960) indicates that zero-sum forms of competition are more strongly associated with violent exchanges than are non-zero-sum forms. High social density, by increasing scarcity, also increases reliance on taking rather than exchanging, asking, sharing, and so on, and to this extent makes almost everything competed for zero-sum in nature. In addition, a number of resources competed for constitute, for inmates, disjunctive rather than conjunctive outcomes (Thibaut and Kelly, 1965: chap. 14).¹⁶ In general, high social density, by increasing anonymity, makes "individuality" scarce. One way of establishing a reputation as an individual, one way of standing out from the many, is to acquire more scarce and desired resources than others. Insofar as these can only be had by depriving others of them, violent exchanges are made more probable.

AGE

To begin with, the model indicates that age has direct effects on violent infractions. In addition, age is also indirectly associated

with violence, via its effect upon social control, transiency, and social density.

AGE AND SOCIAL CONTROL

Deviant behavior, as both Short and Strodtbeck (1965: 283-291) and Lemert (1967) have suggested, can usefully be reported as a form of risk-taking behavior. Risk-taking, according to Cohen (1960: 147), involves "embarking on a task without being sure of success." Evidence from a variety of sources indicates that risk-taking varies inversely with age and positively with group membership (Schwartz, 1969; Wallach et al., 1962). As prisoners get older, they tend to be less inclined to take risks; and among younger and older persons, those who make decisions as part of a group tend to make riskier decisions than those who make decisions on their own. Youth prison inmates are not only younger but also a greater proportion of inmates in them belong to a clique or subgroup. For this reason, violence, always a bit of a gamble, is more likely to occur in youth than in adult prisons, even when the probability and severity of punishment is perceived as equal in both kinds of institutions (Kogan and Wallach, 1964: 3).

Another way in which age is associated with social control is via its effect upon guard attributions and therefore the patterning of guard-administered sanctions. Prison regimes vary along a continuum specifying the conditions under which punishment may be made contingent upon transgressions. *Actus reus*, *mens rea*, and *parents patriae* represent three principles which can be Guttman-scaled according to their requirements for legitimate punishment. The "Rule of Men," guided by the *parents patriae*, stands at one extreme of the regime continuum with the "Rule of Rules," guided by the principle of *actus reus*, at the other.

These two social control regimes are not equally effective in regulating deviant behavior. Specifically, the Rule of Men is less effective (Glaser 1969: 120; Matza, 1964). The less effective Rule of Men is more likely to be implemented in youth rather than adult institutions for a variety of reasons. Included among these is

the fact that a regime based on a *parens patriae* conception is more congruent with the character and the attributes "kids" are thought to possess by adults who happen to be guards (Ellis, 1982a: 33-40).

AGE AND TRANSIENCY

Prisoner subgroupings (e.g., cliques) are implicated in the instigation, facilitation, and inhibition of violent behavior in prisons (Carroll, 1974; Davidson, 1974; Jacobs, 1977). The greater prevalence of inmate cliques and other subgroups in youth prisons, when combined with differences in the transiency of youth and adult prisoner populations, creates different potentials for violence in the two types of institution.

In this connection, consider first the interrelationship between group membership, ranking within groups, and transiency. Youth prisons not only have more cliques but more of the cliques they do have are characterized by more rigid dominance hierarchies with identifiable leaders, elite subordinates, and co-members. In adult prisons, differentiation of the inmate population into cliques tends to be much more weakly associated with the hierarchical ranking (stratification) of these cliques than is the case in youth prisons. One reason for this is that cliques in youth prisons, much more so than in adult prisons, constitute the primary locus for status acquisition (Polsky, 1962). To the extent that position and status hierarchies within cliques depend upon fighting ability, or more generally the ability to coerce others successfully, transiency increases the number of aggressive exchanges within cliques by constantly opening up new high status positions to lower order clique members.

Note too that the more frequently leaders and clique members have to be replaced, the more frequently it would be necessary for clique members to fight to move up. Also, as newly arrived inmates become group members, they represent an implicit challenge to ranked inmates in the groups they join. Under these conditions, the interaction between inmates is not only more

likely to include coercive attempts but also begins to approximate the relations a gambler has with a one-armed bandit (slot machine). In fight after fight an inmate may lose. One coercive attempt after another may fail because the person he most wants to successfully coerce is above him in rank and has this exalted rank because he has already demonstrated he has "the right stuff." However, after a number of attempts, an average number, which varies for any given individual, the next fight—one does not know which one—may be won. This one win, because it confers the generalized rewards accruing to *rank*, may well wipe out all past losses and ensure a relatively successful carceral career.

In adult prisons, the rewards contingent upon the use of coercion tend to be specific. Thus, one may secure quiet or privacy by beating up a persistently noisy or nosy cell mate. In youth prisons, partly because of their involvement in cliques, the rewards contingent upon inmate aggression are more likely to include rank rewards in addition to individual response rewards. In other words, beating up a noisy inmate would be associated not only with quietness but also adds to and/or confirms one's reputation for toughness in the eyes of other group members. Indeed, compared with inmates in adult prisons, young inmates are not only more likely to use available opportunities for status enhancement, via the use of coercion, but actually create such opportunities. Thus, one can put oneself in a position to be jostled and then react aggressively to the jostle.

It is important to note here that successful coercion is not only more likely to be doubly rewarded in youth prisons but also that the rewards accruing to rank are, like money, cigarettes, or sex, generalized rewards that can be used to satisfy a whole variety of wants. Equally important is the fact that the condition—rank—that produces generalized rewards is an outcome that occurs as part of the variable ratio schedule of outcomes. Contingent burdens that ordinarily would inhibit further violence (losing a number of fights) do not have this effect when they are imbedded in the (variable ratio) patterning of outcomes described above. This is one way, then, in which transiency and membership in hierarchically organized groups interact to make violence, always a bit of a gamble, more probable in youth prisons.

AGE AND SOCIAL DENSITY

With capacity and living arrangements (single cells, open dorms, dorms with cubicles, etc.) held constant, increases in the social density of prisons are almost always caused by increases in the numbers of younger people admitted into them. Sentencing policy and prison population dynamics combine to create this state of affairs. Thus, the crimes for which individuals are most likely to be put in prison are committed by younger persons, and when "accelerated releases" from prisons are used to make space for newly sentenced younger inmates, a cycle of young prisoner influx and accelerated release is set in motion. While this cycle is most likely to occur under socially dense conditions, its first part—most incoming prisoners are young—remains true even when prison populations do not exceed prison population capacities (Carr, 1980).

Having described, in somewhat abstract terms, the linkages between each of the variables in the model, I now wish to describe, in more concrete terms, the applicability of the model to a real-life prison situation that, with local variations, probably repeats itself in all or most of those prisons that inmates and staff label as crowded. The situation I have in mind is one that existed (and still does) in a large medium security federal penitentiary housing relatively young (median age = 24), male prisoners.

A "get tough" sentencing policy applied mainly to younger, predatory offenders resulted in an increase in the social density of the institution. Because the increases in numbers soon exceeded the amount of residential space available, one entire range was equipped with an additional bunk. Here, double-bunking replaced single bunks. All new (incoming) inmates were required to spend the initial 6-10 weeks of their sentence in cells on the double-bunk range. Assignment of individual inmates to cells was done on a sequential, random basis.

To the general (single-bunked) inmate population, a double-bunk cell was a low-status residence. Only inexperienced inmates and/or those who did not have the "balls" to do something about it, remained on the double-bunk "sissy" range for the entire (6-10

weeks) period they were supposed to. To the individual inmate assigned to a double-bunk cell, the assignment usually meant a very unpleasant experience. The "pains of imprisonment" were more keenly felt for a number of reasons.

First of all, to the inmate who had done a lot of time in other penitentiaries (perhaps maxi pens) and/or in this penitentiary on a previous occasion, but who was now in with a "fish" inmate on a "fish" range (meaning double-bunked), assignment to a double-bunk cell meant a loss of face. Second, the inmate may discover that his cellmate refuses to wash and thus, gives off a foul odor and the cell itself is filthy because of the cellmate's careless use of the cell's toilet bowl. Third, the cellmate may be a clean or clean-living person but also one with a homosexual sex preference. Fourth, the amount of living (cell) space he had gotten used to has been cut in half. Personal belongings that he had previously been able to display in the cell (e.g., photographs) he could no longer display. The music he had formerly chosen to listen to on his radio may not be liked by his cellmate. Finally, he could no longer experience the privacy that formerly had been enjoyed by virtue of single-cell residence. Without the privacy of a single cell—a haven in the heartless public world of the prison—his secrets could easily become "public" spectacles.

• Because of double-bunking, then, valued activities have been interfered with, valued things have been made scarce. Inmates who become more angry and experience greater stress, and who associate these aversive internal status to double-bunking, are far more likely to label the penitentiary as crowded than are inmates who are housed in single cells and/or inmates experiencing goal-blocking and behavioral interference for reasons other than double-bunking (Sundstrom, 1975).

The penitentiary, labeled crowded by inmates (and staff), also contained a relatively transient inmate population. This was partly due to the fact that younger inmates usually received shorter sentences, partly because a greater number of younger inmates were being sent to the penitentiary. One administrative response to increasing social density was, as indicated earlier, to double-bunk inmates. Another was to move them out of the institution via paroles or transfers. So, in addition to inmates

entering and leaving the institution, inmates within the institution were being moved from the double-bunk range to the ranges housing the general inmate population.

To the individual inmate in a double-bunk cell, this meant having to experience the relatively hazardous process of coming to terms with a relative stranger perhaps two or three times during a period that was aversive enough as it was. Violent behavior, in this situation, was a fairly reliable way of being moved out of the fish range, to a single-cell, segregated range. In this way, an inmate could not only hasten his eventual return to the general population, but also restore or confirm his reputation as a "solid con."

To the general population of inmates, transiency helped undermine informal patterns of inmate social control. Specifically, dominance hierarchies were either prevented from being established and/or were being disrupted if they did become established. Thus two inmate leaders on a particular range are moved out. For their high-rank positions, there is competition, not only among indigenous inmates but also from one of the newcomers who just moved in and who brings a reputation for toughness with him. The other new inmate, not wishing to be exploited because of his newcomer status, acts far tougher than he may really wish to. The potential for violence increases because he is seen as a threat and/or a potential victim. In this manner, transiency is associated with violence—violence that is seen by inmates to be related to social density (that is, to their being treated "like fucking animals"). This leads inmates to apply the label "crowded" to the penitentiary in which they are confined.

Transiency not only influences informal inmate social control processes, it also influences the ability of staff to regulate inmate behavior. Thus, by increasing the size of the inmate population, social density makes surveillance more difficult. One manifestation of the difficulty is the request, by staff, for inmates to be required to wear numbers on their uniforms large enough for the tower guards to identify them when they congregate in outside (yard) areas.

Second, transiency tends to undermine those informal social control strategies that depend, for their effectiveness, on fairly intimate knowledge of the individual inmate by staff. One major area of tension for staff (and inmates) is associated with their involvement in a situation in which there are always a sizable minority of inmates who staff know very little about as individuals. The process of finding out can be quite hazardous for both staff and inmates, who are strangers to each other. In addition, staff find it difficult to maintain informal social control arrangements with inmate leaders because these inmates are, from the perspective of staff too, "here today, gone tomorrow."

Third, increases in the size of the inmate population when combined with increases in its transiency decrease the likelihood of inmates being placed on report for violent infractions. If population size has a direct effect on staff reports (via surveillance), then transiency has an indirect effect via the difficulty staff report experiencing in getting inmates to inform on each other when they are part of a relatively large, transient population. The increased access that inmates have to each other—access that makes it easier to punish snitches—is perhaps one reason for this state of affairs. Another is that inmates who believe that they too will soon be moving elsewhere (to another range, another institution) have a decreased stake in establishing a snitch relationship with any given staff member. Because of this movement, the inmate may not find the staff member around when it comes time to return the favor.

Finally, social control has a direct effect on the labeling of the prison as crowded. Quite apart from the bureaucratic solution of increased regimentation—which further reduces inmate feelings of personal autonomy—penitentiary administrations react to increased size and social density by markedly reducing organized recreational, occupational, vocational, leisure activities. The congregation of men made idle by administrative policies designed to prevent trouble by requiring staff to do only those things which are necessary to keep the penitentiary in operation, inculcates in the inmates the aversive cognitive-evaluative label identified as "crowded" in the model.

SUMMARY

My review of extant theory and research on crowding and prison violence indicated that the most useful way of theoretically integrating and building upon this body of work was to (1) conceive of crowding as a cognitive-evaluative state, (2) treat crowding as a dependent variable, (3) explicitly include social control processes into the theory, (4) make the theory a process one, and (5) include other variables known to be strongly associated with prison violence (i.e., age and transiency).

The variables included in the model were identified by one or more of the researchers whose work was reviewed. Building upon their work took the form of a methodological review, and the specification of and rationale for linkages between variables. The methodological review indicated first, that shared methodological faults played some part in explaining the consistency in findings and second, that objections to the inclusion of certain variables (e.g., age) in the model were not well founded. The specification of linkages and of a theoretical rationale for them was necessary because these were either left unstated or were poorly developed by the authors in whose studies they appear.

As the model (Figure 1) was not actually tested, it should perhaps be evaluated on the basis of its theoretical merits alone. However, I have also maintained that this model is a more useful one than previously formulated others. The inclusion of a utility criterion would seem to require that the model be applied to a particular case. This I attempted to do in the final part of the article. It seemed to fit quite well but that should not be too surprising as my experience with this particular case helped generate the model in the first place.

CONCLUSIONS

The research reviewed here indicates that the relationship between social density, violence, and crowding is mediated by a number of variables. The most important of these variables were

identified and the relationships between them specified in a theoretical model (Figure 1). About the theory described by this model, these conclusions seem relevant.

First, in the prison/crowding effects literature, the conception of crowding as an attributional label and its treatment as a major dependent variable is, as far as I know, unique.

Second, as a *process* explanation it is quite rare. Routinely, one discovers "empty-box" or status theoretic formulations in the prison crowding literature, in which the reasons why (or how) social density causes variations in prison violence are left unexamined.

Third, the theory not only explicitly identifies social control as a strategic mediational variable, it also directs attention to the possibility that the usual way in which prison violence researchers view the relation between social control and violent forms of deviation may not be the most useful way. Specifically, the model says that variations in social control cause variations in violent forms of deviation rather than vice versa.

Finally, in so far as measurement and theory are interrelated (Guttman, 1974), the theory described in Figure 1 requires that reported infraction rates, as a measure of institutional violence, be treated not simply as a more or less accurate measure of the actual amount of violence, but as a subject that must be fully investigated in its own right. Only where this is done can one be reasonably sure of the amount of variation explained by *actual* increases in inmate violence *and* the amount of this increase that is a function specifically of increases in social density.

NOTES

1. In this connection, see Gillis (1979) Hirschi and Gottfredson (1982: 8), Paulus et al. (1973), Street, Winter, and Perrow (1966), and Sykes (1958).

2. According to Calhoun, a "behavioral sink" is a density-dependent outcome. Specifically, the concept refers to the general social deterioration that is caused by extreme crowding. In his extremely crowded prisoner rat society, Calhoun observed males whose behavior varied between "sexual deviation, cannibalism and frenetic over-activity" at one extreme to "pathological withdrawal" on the other. Nonhuman animal evidence from

other prisoner societies (i.e., 200s) certainly seems to provide a sound basis of support for this proposition. Thus Zuckerman (1932) found overcrowding to be associated with extremely high rates of intragroup violence in the captive baboon societies they studied. Here, stress and violent attacks led to the virtual decimation of these two societies of captives.

3. A rigorous test of this invariance hypothesis would require evidence concerning the conditional probabilities of behaving violently across prisoners differing in age. In none of the studies reviewed here was this evidence presented.

4. According to Campbell and Stanley (1963) internal validity has to do with the question: Is the treatment (independent) variable and only the treatment variable associated with the observed change in the dependent variable? External validity has to do with the question: To which populations can these results be generalized with confidence? The relation between these two kinds of validity is zero-sum. In so far as a researcher's concern is to generalize *valid* findings, the internal validity of a study has precedence over its external validity (1963: 126).

5. This is, methodologically speaking, the most sophisticated of all the studies reported in Table 1. See also Bennett (1976) and Ellis (1982a).

6. This conception of crowding is very similar to Rapoport's definition of crowding as "excessively high effective density, i.e., undesirably high perceived density, when the various mechanism for controlling unwanted interaction with other people are no longer working well and all the cues indicate potential interaction demanding attention" (1975: 153). See also Carr (1980: 19), Luo (1973: 223), Paulus (1980), Schmidt and Keating (1979: 210), Toch (1977: 31).

7. Important contributions to the study of the relationship between social control and prison violence have been made by Lemert (1967: v), Cloward (1957), Davidson (1974), Jacobs (1977), Mathiesen (1965), Street, Vinter, and Perrow (1966), Sykes (1958). Taken together, these references cover both the conventional relation (violence → social control) and the "anomalous inversion" (social control → violence) formulated by Lemert (1967). For a very useful discussion of the topic, see Ditton (1979).

8. Based on informal conversations with guards doing their job of guarding in crowded prisons, I discovered that high social density sustains guard attributions of animality principally via its effects upon personal hygiene and eating. Prisoners do not always have the best (i.e., middle class) table manners. Where eating has to be done in shifts and speeded up if all are to eat within the time allotted for the meal, manners do not tend to improve. A listener is likely to hear guards used such words as "slobs" and "fuckin' pigs" more frequently as the time inmates have to eat decreases. Similarly, taking a shower is speeded up, so speeded up in some cases that all the soap cannot be removed. To guards, "they even stink like animals." As a matter of fact, inmates have been killed by other inmates because "they stank," they refused to wash. In discussions with inmates on prison homicides, one discovers that prisoners, like the rest of us, find it easier to hurt a person regarded as "strange" or animal-like in some way than it is to hurt "another human being." Density, by increasing animal-like behavior and conditions in a prison, may increase the number of targets while providing a behavioral basis for neutralizing guilt.

9. Clearly, there are other ways of increasing the proportion of relative strangers in a prison. In fact, an entire prison of relative strangers was central to the Pennsylvania (single-cell, solitary confinement) System. See Rothman (1971). The discussion that follows applies to both inmate/inmate and inmate/staff relationships. Staff/inmate dealings become even more discontinuous when a highly transient staff must deal with a highly transient inmate population. In this connection, see McGuigan et al. (1977).

10. For an extended discussion of informative, coercive and exchange solutions to the problem of social order, see Ellis (1974).

11. Even in an institution with a relatively stable population, it is sometimes difficult for inmates to reach others they may want to harm. See Davidson (1974: 172-175).

12. Because of the startling contrast between appearance and the reality he observed in Trenton prison, it was quite appropriate for Sykes (1958: chap. 3) to emphasize the structural defects in the power of custodial staff. Presumably the contrast was not perceived by Goffman (1961: 48-70) because he seems to see structural defects only in the power of inmates.

13. Dynamic security measures, according to Mohr, involved "staff participation with inmates in the programme . . . the whole institutional programme . . . jointly devised by inmates and staff . . . and removal of unnecessary annoyances and frustrations" (1971: 16).

14. In this connection, see Lieber (1981) and Mohr (1971).

15. Clearly, malignant scarcity can also be caused by drastically reducing resources while keeping the population roughly constant. Under extreme conditions, a lethal population policy is likely to be implemented. In this connection, see McKee (1976).

16. For example, the more physical space occupied by one inmate the less space there is for others. Similarly, increase in prestige or rank in a social group are, or are perceived as being, at the expense of other group members. Again, the homosexual partner of one inmate cannot simultaneously be the partner of another. Note too, that in van den Berghe's causal model of human aggression, competition (zero-sum) for resources is held to be "the root cause of aggression."

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