



Crime and Place: Plenary Papers of the 1997 Conference on Criminal Justice Research and Evaluation



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Ralph B. Taylor

Gordon Bazemore

Barbara Boland

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Christopher Stone

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Crime and Small-Scale Places: What We Know, What We Can Prevent, and What Else We Need to Know*

Ralph B. Taylor, Ph.D., Temple University, and Visiting Fellow (1997), National Institute of Justice

Criminal justice researchers and practitioners recently began to shift their focus from people to places—from people who commit offenses to specific places where offenses occur (Weisburd, 1997). Some argue that such a shift in focus will result in more effective crime prevention and suppression policies.

My presentation reviews the lessons learned from this new emphasis on specific places.¹ I examined results from a small number of interventions designed to reduce crime or disorder (or both) in “hot spots”; that is, in specific places with high crime rates. These efforts showed some success in reducing crime or disorder at specific sites, but they also showed stronger effects on some crimes than others and greater reductions in disorder than crime. Some of the benefits produced by these targeted interventions were both more modest and shorter lived than expected.

It appears that changing from an offender-centered view to a place-centered view has brought police some success and shows potential for other areas of criminal justice practice, such as parole and probation. We may be able to prevent crime or disorder more effectively if we integrate our theorizing and practice in this area with the work of analysts outside criminal justice who have been studying places for some time. More specifically, I propose turning to ecological psychology, changing our units of analysis from hot spots to behavior settings, and

using tools in spatial epidemiology to help us describe and understand how crime and disorder cluster in both time and space. These viewpoints may help us predict how crime differences will shift in the future, dramatically enriching what we know about crime and place and what we can do about it.

Progressing down the cone of resolution

Geographers use a “cone of resolution” to organize knowledge about spatial processes at different levels of analysis (see exhibit 1) (Brantingham et al., 1976; Harries, 1974).² Spatial patterns observed for crime rates vary as you progress down the cone to increasingly smaller scales of analysis. But even more important than the shifting spatial patterns, as you change levels of analysis “from national to city-block-level[s of] analysis, . . . this changes our perception of the ‘where’ and the ‘what’ of the crime problem . . . [and] the questions that can reasonably be asked of the data at each level” (Brantingham et al., 1976, p. 264). The theoretical processes behind the spatial patterns also shift as you move down the cone of resolution. The appropriate theoretical tools for understanding the spatial and temporal differences should be used at each level of display and analysis.

Over the last century and a half, criminological researchers have moved progressively down this

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Crime and Small-Scale Places

cone of resolution (Brantingham and Brantingham, 1981; appendix A). In the past 10 years, criminological researchers and police departments have looked closely at the relationship between crime and specific street addresses. The following section describes what is being learned about both crime and prevention at this level. But first we consider why we have moved in this direction.

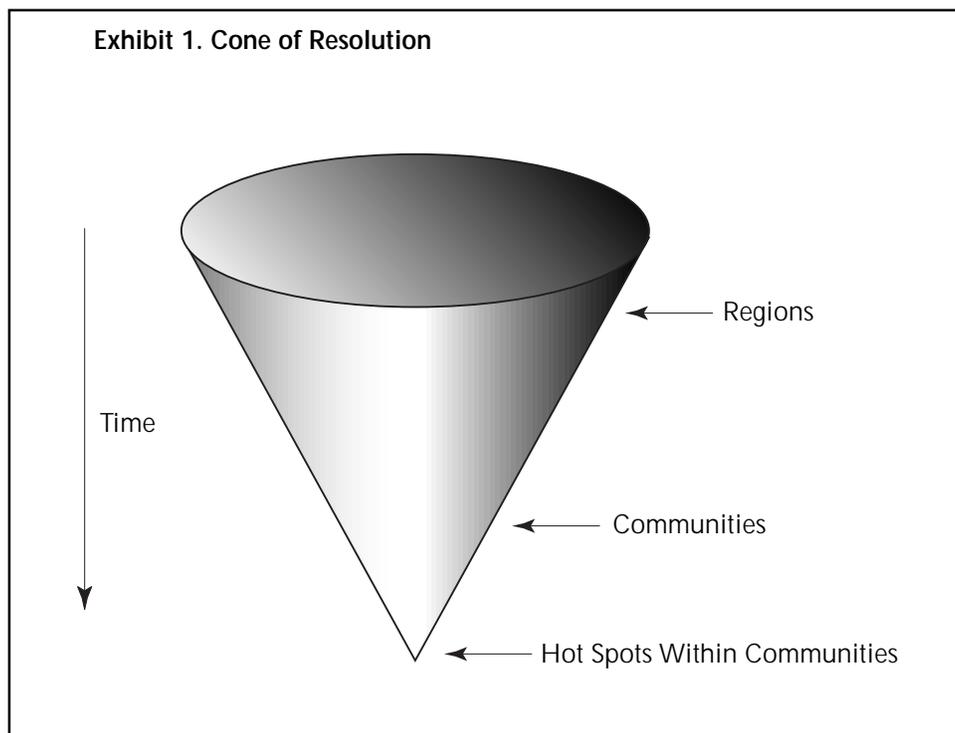
Forces leading research down the cone

Three sets of forces have contributed to focusing on progressively more detailed relationships between crime and place: growing frustration, better tools, and increasingly well-supported theories.

Frustration. Understanding that crime is higher in some neighborhoods than others has only limited relevance to a broad range of public agencies, including social services and police. Even in a high-crime neighborhood, most blocks will have low crime rates, and most addresses will have no reported crimes. Links between crime and community do not provide the data on specific places needed to guide deployment of police officers. Police hope to

be more efficient and productive by focusing on high-crime places (or hot spots), rather than on high-crime communities. Crime data and police service calls that are “geocoded” reveal concentrations of crime in a few hot places (Sherman, 1995). Increasing patrol deployments to higher crime neighborhoods without knowing where and when crimes are likely to occur within those neighborhoods appears to produce only modest gains in crime control (Kelling and Coles, 1996). If we know exactly where and when crimes are taking place, we should be able to control crime more effectively.

Tools. In the last few years relatively low-cost, personal computer-based geographic information systems have become increasingly available to criminal justice practitioners, with far-reaching impact on the police. Numerous departments have sought to integrate these capabilities into patrolling, detective, and community policing operations. For example, in 1994 the New York City Police Department started holding monthly crime strategy meetings, allowing precinct commanders to report current conditions to top management and collaboratively form strategies and review results. Ini-



tially, precinct pin maps were transported to the monthly meetings; shortly thereafter crime data were downloaded to personal computers, geocoded, and mapped. Practitioners felt that the electronic mapping successfully supported these monthly meetings (McGuire, 1997).³

Researchers have begun to document how these tools are used or not used, who uses them, for what purposes, and with what impact (Chicago Community Policing Evaluation Consortium, 1996; Maltz et al., 1991; McEwen and Taxman, 1995). Even though mapping led to some extraordinary successes in the Chicago Alliance for Neighborhood Safety (CANS) mapping evaluation, many officers still reacted negatively to it. Negative reactions from officers in other jurisdictions implementing crime mapping tools also have been documented. In Jersey City, researchers found it a challenge to shift narcotics detectives' thinking from people to drug markets (Braga et al., 1997; Mazerolle et al., in press).

In addition to helping officers patrol more strategically, crime maps can support police-community interactions (Maltz et al., 1991), focusing attention on key locations and documenting that some locations of concern to residents may not be crime-prone spots. The crime maps also can serve as beat institutional memory. Officers themselves can't do this because they don't serve all tours and often spend on-duty time away from their beats.

A decentralized information base such as crime mapping facilitates the local police-community responses to crime and disorder envisioned by advocates of community policing or problem-oriented policing.

Theory. The tools for understanding crime-place links have improved dramatically; the empirical support for key theories about crime and place has improved as well. Several theoretical models point toward features of the social and physical environment below the neighborhood level (see appendix A).

Several forces have encouraged researchers and practitioners to learn more about the microscale connections between crime and place. Police departments have sought to target their resources in a more spatially focused way. In addition, easily used tools for mapping crime locations have become

more widely available. We are just beginning to learn how these tools are implemented in police strategies, community policing, and problem-oriented policing. Finally, several relevant theoretical developments support the trend. Situational crime prevention has gained respect as more studies have accumulated data, as displacement-of-crime effects have proved less than feared, and as diverse benefits have been documented. The evolution of routine activities theory grounds it more firmly in microscale dynamics.

Theory, operations, and research regarding crime and places

We have arrived at the bottom of the cone of resolution and are examining links between crime and specific addresses or clusters of addresses. How are researchers thinking about places? What theoretical tools are they applying? What difficulties confront researchers and operations personnel? This section discusses the concept of hot spots and the issues related to it, notes operational challenges when using the concept, and reviews some recent field experiments using the hot-spot notion to guide interventions.

Hot spots: Defining and operationalizing

What are they? Crime and place researchers have adopted the term "hot spot" to describe a location of extremely high crime. (The term is borrowed from geology; hot spots are places where hot magma rises, often causing volcanoes to erupt.) A hot spot may be a single address, a cluster of addresses close to one another, a segment of a streetblock, an entire streetblock or two, or an intersection. Reviewing data on calls for service in Minneapolis (Sherman et al., 1989), researchers discovered crime hot spots, "small places in which the occurrence of crime is so frequent that it is highly predictable, at least over a 1-year period" (Sherman, 1995, p. 36). Many service calls to police came from a relatively small number of addresses.

For example, in the case of calls for domestic violence in Minneapolis, had they been spread evenly

over all street addresses and intersections throughout the city without any repeat calls coming from the same location, 21 percent of those locations would have generated a domestic disturbance call. But the data showed that because of the repeat calls from the same addresses, only 9 percent of the street addresses and intersections generated these types of calls. The researchers also found that the clustering of crimes at the same address varied as a function of the type of crime. Not surprisingly, for example, the clustering was stronger for domestic disturbance calls than for robbery. For a number of economic, psychological, and practical reasons, a physically abused woman often will remain with the abuser for a long period before moving out—or may not move out at all (Buzawa and Buzawa, 1990). If the victim and offender remain together, it seems likely that calls will continue to be generated from that address.

Attention on hot spots has moved to many different types of calls for service. The concept also has expanded to concerns about the location of drug markets, uncivil or disorderly behaviors such as prostitution (Maltz et al., 1991), and the fear of crime (Fisher and Nasar, 1994; Fisher and Nasar, 1995).

Differential utility. At first, it would seem that the identification of hot spots has enormous policy implications. Lawrence Sherman wrote, “If future crime is six times more predictable by the address of the occurrence than by the identity of the offender, why aren’t we doing more about it? Why aren’t we thinking more about ‘wheredunit,’ rather than just ‘whodunit’?” (Sherman, 1995, pp. 36–37).

I agree that for some crimes the policy implications are substantial. Domestic violence, burglary, and perhaps convenience store robberies represent the clearest cases in point. For domestic violence, both the offender and the victim are fixed in place as long as they live together at the same address. Building in part on the expectation of repeat domestic violence and domestic disturbance calls, a number of experiments have shown positive effects of police intervention for some types of households (Sherman, 1992).

For burglary, the victim’s site is fixed—a continuing source of vulnerability. After analyzing victimization data, researchers concluded that a burglarized household was most likely to be

reburglarized soon after the initial burglary (Polvi et al., 1991) and the risk of another burglary increased with each burglary victimization at the household (Ellingworth et al., 1995). They also learned that burglary hot spots were “hot” due in part to the high numbers of repeat victims (Bennett, 1995). (For a comprehensive review of repeat victimization, see Farrell, 1995, and Spelman, 1995b.) These insights have led to projects in Kirkholt and Huddersfeld, United Kingdom, where council households (public housing households) victimized by burglary received immediate assistance from the police following the event.

For the two types of crimes most rooted in space—domestic violence and burglary—there are some successful interventions, although important questions remain. In domestic violence the victim and offender are placebound and in burglary the victim is placebound; hence, the concept of hot spots seems to be worthwhile.

*Community-defined hot spots
may be quite different from
police-defined hot spots.*

In the case of general street crimes, such as robbery or assaults, where neither victim nor offender is fixed in place, the relevance of the hot-spot idea may be weaker. Certainly, with some types of these street crimes, place-based interventions also may prove successful. In the case of convenience store robberies (where the victim’s location is fixed) or assaults at bars or taverns (where specific facilitating conditions are fixed), localized interventions may prove relevant.

Conceptual questions. Numerous questions arise about hot spots (La Vigne, 1997). The underlying mix of person- and place-based factors making a hot spot hot may vary considerably. Two underlying person-based factors may contribute to victimization: state dependence and risk heterogeneity. High victimization risk may be dependent upon the state the person is in at the time of victimization. For example, if a burglary victim has had her front door jimmied, she is more susceptible to another burglary until the lock is repaired; this is called state dependence. By contrast, some people are more

likely to be victimized because of their habits, routines, or occupations; this is called risk heterogeneity (Lauritsen and Quinet, 1995; Lauritsen et al., 1991). A bouncer at a popular night spot in a tough part of town is at more risk of assault than an elementary school crossing guard in a quiet neighborhood. These two underlying factors contribute in varying degrees across the population of users at a site and across sites to making hot spots hot (La Vigne, 1997). In regard to street crime, hot spots may vary in their intensity, depending on the mix of land uses and facilities at the site (La Vigne, 1997). Some sites (called crime generators) may attract many potential victims simply because they generate large volumes of pedestrian traffic. Other sites (called crime attractors) may attract many potential offenders because of their reputations. The appropriate policy response at the site may depend substantially on these underlying place- and person-based variations from site to site.

Some have even questioned the source of information used to define calls for service, suggesting it may be too limited (Maltz et al., 1991). Community residents may have other high-problem locations but not call the police about them through 911. Community-defined hot spots may be quite different from police-defined hot spots. Reports of these differences emerged from citizen-police interactions in the Chicago CANS project. At meetings, police officers would sometimes find that residents' concerns centered on sites that were neither crime-based nor 911-call-based hot spots.

An additional limitation of dependence on calls for service is that the hot spot is "tied to a physical place; thus, events that are precipitated by activity at a neighboring place are not considered" (Maltz et al., 1991, p. 42). In other words, a hot spot may appear hot because of something going on nearby, outside the hot spot. For example, fights in a parking lot at 2 a.m. may occur because a bar down the street closes around that time. In a study of public housing in the Bronx, when violence in the public housing projects increased, violence in surrounding locations also increased (Fagan and Davies, 1997). In the case of assault, crime not only diffused outward from the projects; it also diffused into the projects from adjoining areas. In the case of homicide or robbery, a crime hot spot might appear in a location outside a project, but be "driven" in part by

crime from inside the project. Thus, we need to understand how activities in, attitudes toward, and crime in the hot spot itself are shaped by the surrounding context (Rosenbaum and Lavrakas, 1995).

Operational questions. Locating and bounding (that is, defining the boundaries of) hot spots are not straightforward processes. In the Minneapolis Hot Spot experiment, for example, if officers left their car parked in the hot spot and walked on foot through the alley behind the hot spot, were they counted as having a presence in the hot spot, even though they were walking outside it part of the time (Buerger et al., 1995)? Reading the research literature reveals similar difficulties. For example, Lawrence Sherman and David Weisburd (1995, p. 630) described how their research began with 5,538 "lukewarm to hot" addresses:

We defined hot spots operationally as small clusters of addresses with frequent "hard" crime calls as well as substantial "soft" crime calls for service. . . . We then limited the boundaries of each hot spot conceptually as easily visible from an "epicenter."

They next applied a number of restrictions to these sites and procedures for resolving disagreements about hot-spot boundaries. The disagreements were resolved using the following general principles:

- No hot spot is larger than one standard linear streetblock (although a few exceptions were allowed on the basis of visual sightings on very short blocks).
- No hot spot extends for more than one-half block from either side of an intersection.
- No hot spot is within one standard linear block of another hot spot (again, a few exceptions were made).

With this final list of 268 reconfigured address clusters, Sherman and Weisburd looked for sites with at least 20 hard-crime and 20 soft-crime calls in the year studied. They also eliminated sites with high variance from year to year: clusters "with greater than 150 percent increases or 75 percent decreases in hard-crime calls from one year to the next" (Sherman and Weisburd, 1995, p. 632). When all

these operations were completed, 150 hot spots remained in which the number of calls for service ranged from 6 to 50 per month. In this same study it also appeared that narcotics detectives held very different views of drug market activities; the way they bounded hot spots depended considerably on the types of drugs sold there (Eck and Wartell, 1998).

Such complexities suggest that it may not be easy for police to define crime hot spots precisely and allocate patrol resources accordingly. This raises general questions about the clarity of the concept of hot spots.

Can crime mapping programs resolve the “fuzziness” of hot-spot boundaries and precisely locate them? Spatial and Temporal Analysis of Crime (STAC), developed by researchers at the Illinois Criminal Justice Authority, is probably one of the most widely used crime mapping programs, in part because it is free. It analyzes geocoded crime data and draws circles or ellipses around the hot spots. Although the program has proved extremely useful in a number of contexts and criminal justice practitioners strongly embrace it, its limitations probably prevent it from identifying clear boundaries of hot spots. Two restrictions illustrate the point: The shape of the hot spots produced is limited to circles and ellipses, and the hot spots defined by the program depend in part on the specific area searched (Block, 1993).

Also, officers may encounter difficulties in decoding what is happening at a hot spot and deciding who should be policed (Braga, 1997; Green, 1996). This may be a particular challenge when a hot spot extends beyond a single address to cover a corner or block. Onsite officers need to distinguish between legitimate users, such as teens waiting at a bus stop after school lets out, and illegitimate users, such as teens trying to sell drugs at a bus stop. Narcotics officers, used to chasing dealers rather than cleaning up drug markets, may have little patience for this kind of onsite detail work (Braga, 1997; Braga et al., 1997; Eck and Wartell, 1998). In summary, conceptual definitions of hot spots are understandably broad, resulting in wide variation from study to study, since researchers and practitioners want to search for hot spots for different types of crimes and disorders. The broad scope not only results in a

conceptual jumble, but also creates considerable operational difficulties—both for field practitioners deciding on deployment strategies and for evaluators.

Hot spots research: Examples

Researchers have used the hot-spot idea to guide interventions for reducing drug market activity, disorderly street behavior, dilapidated physical conditions, and crime. Some of the interventions have been traditional or community-oriented policing initiatives; others used multiagency responses to the sites. This section briefly reviews a small number of experiments or quasi-experiments.

City park. Police in Oslo, Norway, learned through observation and citizen surveys that a particular downtown city park caused concern among pedestrians and store personnel (Knutsson, 1997). Detailed behavioral observations allowed researchers to target the specific, problematic locations. The park was used by addicts to gather, buy, sell, and use drugs. A park redesign, combined with more patrols by narcotics officers and regular officers, resulted in increased legitimate use of the park, improved resident perceptions of the locale, and more satisfaction among nearby business owners. The nontraditional portion of the program—the park redesign, which facilitated “natural surveillance” by legitimate users—“prolonged the effort of the intervention . . . [and] discouraged offenders from returning” (Knutsson, 1997, p. 138).

Multiagency response in Oakland. In Oakland, California, a coordinated multiagency team sought to improve physical conditions at drug nuisance properties and remove tenants causing problems. The methods used at the experimental sites were complex. Police accompanied housing inspectors, helping them gain entry. Inspectors cited owners for violations, and court action was taken against property owners failing to comply with civil law citations. Police arrested dealers and patrolled more intensively at the sites. Trained raters then judged photographs of the sites before and after the intervention.

Comparison of preintervention to postintervention scores showed a dramatic impact on physical disorder and a more modest impact on crime. For example, the number of blighted properties dropped

from 134 to 15. However, drug problem calls declined only 4 percent from the pretest period. Commercial and owner-occupied properties showed the greatest drops in narcotics activity (Green, 1996). In part because business owners were more likely than residential owners or occupants to cooperate with police efforts, the greatest impact was found at highly visible commercial establishments (Green, 1996). Another study of the same intervention examined such behavioral outcomes as drug selling and found that the program itself had an impact on block activity. So too did prior block differences in local informal social control (Mazerolle et al., 1997). Formal and informal controls apparently can work side by side to influence drug-selling activity at specific problem locations.

Police contribute in several ways to these multi-agency interventions (Green, 1996). Not only are they carrying out traditional arrests and making contacts with suspects in the field, but they are also bolstering citizen confidence with their presence and empowering personnel from other agencies by accompanying them onsite. When police team up with housing inspectors, for instance, it legitimizes the inspectors' visits and helps them gain access.

In addition to modest crime reductions at the targeted sites, the adjoining two-block buffer zone around each site also benefited (Green, 1995). The diffusion of crime-reduction benefits slightly outweighed the amount of crime displaced out of the target sites.⁴

Two other studies of code enforcement are somewhat similar in spirit to the Oakland initiative. In Cook County, Illinois, researchers studied residents' views of drug activity, comparing those of people living on blocks where a drug property had been targeted for civil abatement with those of people living on blocks not targeted (control blocks) (Lurigio et al., 1998). The study generally found little positive impact of the abatement procedures. In a randomized experiment in San Diego, California, rental addresses targeted for drug enforcement in the previous 6-month period received either no treatment, a letter, or a meeting with the landlord, a police officer, and a code officer to develop remediation strategies (Eck and Wartell, 1998). Researchers found significantly reduced drug activity in the followup period for the addresses in the

"meeting" group. The authors concluded that code enforcement can work effectively at rental properties used for drug activities. At the same time the study details the many reasons landlords do little to address these problems.

Minneapolis crime and disorder hot spots. In an experiment using random assignment in Minneapolis, Minnesota, hot spots received the normal amount of patrolling or increased police presence (Sherman and Weisburd, 1995). (The procedure used to define hot spots is described above.) A typical hot spot was a group of attached two- and three-story buildings clustered around an epicenter, usually a street corner. These intersections often consisted of a mix of commercial services, usually including food and drink and open until late at night. Exceptions to this pattern included low-rise multifamily housing developments and convenience stores. Bus stops, pay telephones, and intensive street lighting were common features of hot spots (Sherman and Weisburd, 1995).

During the first 6 months of the program, experimental sites received two to six times as much police patrol time as did the control sites. As in Oakland, crime decreased only slightly in the experimental site. Although the percentage reduction in calls for service was substantial, it translated into one crime call fewer per month in the experimental location than in the control locations.⁵

When measured in percentages, disorder reductions were sizable. For the period when the experiment maintained the best treatment integrity, "half as much disorder was observed in the experimental group as in the control [group]," according to the researchers (Sherman and Weisburd, 1995, p. 643). They concluded that "substantial increases in police patrol presence can indeed cause modest reductions in crime and more impressive reductions in disorder within high-crime locations" (Sherman and Weisburd, 1995, abstract). But in absolute terms, these differences were not substantial, in part because of the extremely low rate of social disorder observed. Observers saw about 2 disorderly minutes per 100 minutes in the experimental sites and about 4 disorderly minutes per 100 minutes in the control sites. Since observers were stationed in the most stable high-crime sites in the city and observed from 7 p.m. to 3 a.m., this seems an

extremely low rate of disorder. Other onsite researchers have noted similar low rates (Giacomazzi et al., n.d.). If such low rates of social disorder apply to most other areas, we can wonder about the practicality of initiatives geared to reducing those conditions.

Raids seem to provide afflicted blocks with nothing more than a brief respite from crackhouses.

A review of calls received after the patrols left the area showed that a police stop of 11–15 minutes was most useful because it represents the shortest time that created the most residual deterrence (Koper, 1995). This latter investigation of the timing of the police stops addressed the question of the most effective “dosage” at a hot spot.

Kansas City crackhouse blocks. In another experiment, researchers examined the impact of police raids on blocks with crackhouses in Kansas City, Missouri (Sherman and Rogan, 1995). The criteria for including the blocks in the study were receiving a large volume of calls for service, being the site of a successful undercover buy, and receiving at least five calls for service in the month before the undercover buy. Eligible blocks were randomly assigned either to be raided or not to be raided.

The raids showed a marginally significant impact on all calls for service, with calls decreasing 18 percent on the raid blocks and 10 percent on the nonraid blocks. The raids had no significant impact on the number of calls for violent or property offenses. Furthermore, the benefits of the raids evaporated quickly—in about 12 days. The benefits also depended on the season; effects on disorder “found in the winter disappeared in the spring” (Sherman and Rogan, 1995, p. 776). The authors concluded, “Raids seem to provide afflicted blocks with nothing more than a brief respite from crackhouses” (Sherman and Rogan, 1995, p. 777).

Jersey City drug markets. In this study a complex web of policing services—including increased surveillance, crackdowns of varying scope and intensity, and a maintenance observation period—were directed at a randomly assigned set of drug hot spots (Sherman and Weisburd, 1995). Problem-oriented policing strategies helped officers develop detailed information about the problem profiles at each site (Braga et al., 1997).

Using calls to police to construct outcome measures, researchers compared call volumes 7 months preceding and 7 months following the intervention. They found no effects on calls for violent crime or property crime and no reliable effects on narcotics calls. But some categories of disorder calls—suspicious persons, public morals, and police assistance—did show impacts.

Researchers commented, with some surprise, that drug activity did not appear to be affected by the intervention, but some types of disorder calls were affected. They suggested that drug activity and other activities around disorder were more independent of one another than previously suspected. They also noted that the bulk of the treatment effects were “evident primarily in very large changes in a few of the most active hot spots included in the study” (Sherman and Weisburd, 1995, p. 727). In other words, some features of the hot spots themselves, or of the surrounding context, made the treatment more effective in some places than others.

Reducing repeat burglary in U.K. public housing developments. In the Kirkholt (United Kingdom) burglary reduction project, a targeted police response to disadvantaged households victimized by burglary produced a 75-percent drop in this crime. Through similar programs in Huddersfield, victims received increasingly comprehensive assistance from the police immediately after the burglary; those with more burglaries received more assistance.⁶ Those burgled more than twice received sensor-triggered alarms connected to the police station. The Huddersfield program design produced another benefit: It did not encourage offenders to increase their search space and move beyond the area covered by the program (Anderson and Pease, 1997). Neither study was a true experiment, however, and other initiatives at the Kirkholt site may have contributed to program success (Hope, 1995).

Conclusions from examples. The foregoing represent some of the most carefully designed experiments and quasi-experiments available on the impact of place-based, microscale interventions. The small number of studies examined suggests that we draw general conclusions cautiously.

Place-based interventions have effects on crime and disorder. The impacts on crime calls are more modest and less enduring over time than had been expected. All else being equal, high-crime addresses or clusters of addresses are most likely located in areas with generally higher crime rates. As Lawrence Sherman and David Weisburd have stated, “Substantial increases in police patrol presence can typically cause modest reductions in crime and more impressive reductions in disorder within high-crime locations” (Sherman and Weisburd, 1995, p. 104).

Many hot spots are probably surrounded by and nested within hardened criminal subcultures. Many offenders, as well as previous offenders returned from supervision to the community, are likely to live in or near such locations. The resistance of criminal activity to crime control efforts is not surprising given such surroundings. If we look only at the impact of such interventions on crime, questions arise about their cost-effectiveness.

The substantial impact observed on disorder suggests that we know more about reducing disorder than about reducing crime. Interventions like the Specialized Multi Agency Response Team (SMART) program in Oakland show that police can substantially reduce physical disorder by working closely with other regulatory agencies such as those responsible for housing, zoning, and public works. Creating and maintaining a productive partnership with other agencies appear key to an effective intervention, but “perhaps the greatest challenge for SMART-like interventions rests in the ability of the police to develop good working relationships with other city agencies” (Green, 1995, p. 99).

The relative independence of changes in crime and changes in disorder in several studies raises questions (Giacomazzi et al., n.d.; Popkin et al., 1997; Taylor, 1996). How do interventions that succeed in reducing disorder more than crime fit into the broken-window thesis (Kelling and Coles, 1996)? What factors contribute to the relative indepen-

dence of crime and disorder shifts? We know how to reduce disorder in small locations. Other short- and long-term studies also suggest that shifts in crime and disorder are relatively independent of one another (Giacomazzi et al., n.d.; Popkin et al., 1997; Taylor, 1996). Rousting panhandlers, citing landlords for nuisance tenants or substandard conditions, or using other strategies can change local conditions. Perhaps we know less about preventing crime on the microscale. Are the two processes linked more loosely than anticipated, especially on the small scale of the units targeted here—addresses, address clusters, intersections, and blocks? Do researchers expect a strong linkage between crime and disorder in small units only because that linkage exists in large units (Hannan, 1971)? Might the two processes link with considerable strength, but fail to shift over time with comparable speed? Each may cause the other, but one may shift more rapidly than the other.

*We know more about
reducing disorder than
about reducing crime.*

Finally, presuming the prevention effects attributed to the Kirkholt burglary prevention programs have not been overstated, are place-based interventions most effective when either the victim (of burglary) or the victim and offender (in the case of domestic violence) is fixed in place? When neither is fixed in place, are prevention impacts more modest?

Issues ahead

Studies have clearly demonstrated that context-focused crime control is useful. The gains have not been as substantial as initially promised, but they have been noticeable. To make more progress in this area, we need to pay attention to a number of issues.

How we think about places

Thus far the development of concepts about crime and small places has been guided by the hot-spot idea or analogies based on individual offender dynamics. Neither line of thinking may be the most helpful one to pursue.

The hot-spot analogy with geology suggests one underlying cause “bubbling up” to create disorder. But several factors may be responsible. Features of the site itself and the surrounding area jointly contribute to the high crime rate. In the case of large, open-air drug markets, adjacency to high-volume traffic arteries and vacant housing is important (Rengert, 1996). In the case of tavern crime in the north side of Chicago, tavern density and proximity to mass-transit stops played roles in creating hot spots (Block and Block, 1995). The number of contributing factors may be so great that the emergence of the hot spot is “overdetermined”; removing some of the factors may have little or no effect.

Several authors, following up on the theory that neighborhoods can have “criminal careers” (Reiss, 1986), have suggested this might be true for specific places as well (Weisburd, 1997). Places, however, may be too fundamentally different from people to warrant pursuing this notion. The career theory is grounded in offender-centered criminological theory. Although some dimensions of career theory may have some relevance to places, it remains unproven and its relevance is likely to be far weaker than the relevance of place-centered theories. Place-centered theories will be applied as appropriate to particular levels of analysis (Brantingham et al., 1976). To apply place-centered theories, person-centered criminologists need either to learn these theories or to collaborate with those who know them.

Behavior settings theory

It may prove more profitable to rely on empirically validated constructs found within an extensive volume of available research on places (Felson, 1995). Ecological psychologists have been trying to understand how places work since the late 1940s (Barker, 1968; Wicker, 1979).

According to ecological psychology (Barker et al., 1943; Fox, 1983; Fox, 1984a; Fox, 1984b; Wicker, 1972; Wicker, 1979; Wicker, 1987), behavior settings are freestanding, natural units of the everyday environment with a recurring pattern of behaviors and a surrounding and supporting physical milieu. These units organize community life. As Allan Wicker has noted, “Roger Barker [the psychologist

who originated ecological psychology] views behavior settings as small-scale social systems whose components include people and inanimate objects. . . . The various components interact in an orderly, established fashion to carry out the setting’s essential functions” (Wicker, 1987, p. 614).

Analyzing all behavior settings in a small Midwestern town for a year, Roger Barker and his colleagues found different types of behavior settings, such as billiard parlors, taverns, bus stops, parking lots, parks and playgrounds, street fairs, variety stores, and welfare offices (Barker, 1968). In some urban areas, some of these behavior setting types can be high-crime locations.

“Streetblocks”—the two sides of a street between two cross streets—qualify as behavior settings for the following reasons (Taylor, 1997):

- People get to know others as they pass by and observe their routines. At certain times or on certain days, they know what others are going to do. They consequently develop positive or negative sentiments toward others.
- Associated role obligations such as neighborliness go along with being a group member (Mann, 1954). Role differentiation also occurs, with some residents playing more central roles, such as the block organizer or block busybody, and others being more peripheral in the ongoing life of the block.
- Unless there is extremely high turnover or heterogeneity, norms about acceptable and unacceptable behavior are generally shared. People generally agree about what is and is not acceptable at various times. The specific points of agreement—and their clarity—vary as a function of location, structure, and social psychological factors. So too, norms, ranging from clear to diffuse, may be more or less widely shared.
- Blocks exhibit regularly recurring rhythms of activity (Jacobs, 1961; Jacobs, 1968). In ecological psychology these are called standing patterns of behavior. People go to work and come home, children go to school and come home, mail carriers and paper carriers make

their rounds certain times of the day, people engage in weekly activities (like car washing) and seasonal activities (like leaf raking or lawn mowing or gardening). Each block has a regular standing pattern of behavior composed of overlapping cycles, although the pattern may evolve noticeably over a substantial period or, in changing neighborhoods, over a short period.

- The surrounding physical milieu supports and contains the behavior program. A streetblock is physically bounded by the fronts of houses or the alleys or fences behind the houses and the cross streets. What happens one block over or behind the streetblock has much less impact on the block than activities occurring within it. This is particularly evident when a fire or large snowstorm occurs. The block is a major container, partitioning residents from what is happening elsewhere. The behavior setting can no longer exist if the physical container is removed (e.g., urban renewal).
- Behavior settings and streetblocks evolve over time. “Settings are continually constructed and reconstructed as new personnel and equipment are added or exchanged for exiting components” (Wicker, 1987, p. 616). Similarly, on streetblocks families move in and out and houses may be converted to apartments or stores or abandoned and torn down. Small stores may come and go or be converted back to apartments. As the streetblock changes physically over time or its population shifts, so too may the standing patterns of behavior change.

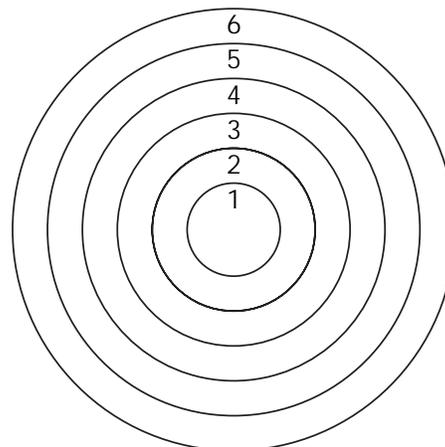
The daily and weekly rhythms on a streetblock depend not only on the residents of the block and its layout but also on conditions on the surrounding blocks and in the broader neighborhood—and how that block and surrounding blocks may shift over time. For example, a block with a corner store will have different numbers and types of people on the sidewalk at different times of day compared with a block that has no store (Baum et al., 1978). Who comes to the store depends on the makeup of the broader neighborhood as well as the block, and the arriving foot traffic will shift as the neighborhood shifts.

What will we gain by drawing on ideas about behavior settings? If we understand how specific types of settings work and what their standing patterns of behavior are, we should be able to identify which critical pieces are missing when such a site becomes a high-crime location.

An isolated bar may become a high-crime location. A pizza parlor at an intersection with several other stores may likewise become a trouble spot. But the route by which each site became a high-crime site may be quite different. What is needed to lower crime also may be quite different.

The evaluation of Oakland’s SMART intervention hints that different remedies are needed for commercial and residential sites (Green, 1996, p. 68). Police helped initiate multiagency civil remedies at problem addresses in both types of sites. The tactics most effectively reduced drug activity at the commercial sites, “where business owners risk more

Exhibit 2. Zones of Penetration Into Behavior Settings



- Zone 1 = Single leader
- Zone 2 = Joint leaders
- Zone 3 = Active functionary (helps manage the setting)
- Zone 4 = Member or customer
- Zone 5 = Audience or invited guest
- Zone 6 = Onlooker

Source: Barker, 1968, figure 4.1, p. 51.

than residential tenants do by not cooperating with police.”

Location-specific remedies are required. Understanding how the setting went awry helps gauge what remediation tactics are most effective. Routine activity theory is beginning to incorporate behavior setting ideas. Marcus Felson (see appendix A) has suggested differentiating guardians of specific targets in a setting—for example, differentiating site managers, who are responsible for the overall functioning of a place, from those with lesser responsibilities (Felson, 1995). This closely parallels Roger Barker’s (1968) observation that people participate in behavior settings at different levels (see exhibit 2).

A particular type of behavior setting may become a high-crime location because setting participants needed to maintain the standing pattern of behavior are missing from some parts of that setting. Alternatively, involved personnel may lack the experience needed to maintain the standing pattern of behavior.

To solve the crime problems in a location, we need to “unpack” the dynamics of the site. Detectives or patrol officers can intervene most effectively if they can discriminate between legitimate and illegitimate participants in the setting (Green, 1996; Rosenbaum and Lavrakas, 1995; Weisburd and Green, 1996). Although behavior setting theory provides an extremely efficient lens for focusing on the most relevant dynamics, the process may prove awkward and unfamiliar to detectives and uniformed patrol officers (Braga, 1997; Braga et al., 1997).

A final advantage of behavior setting theory is its explicit recognition that the standing pattern of behavior is timebound. Several of the interventions mentioned earlier point to timebound effects. For example, residual deterrence from crackdowns may be seasonally dependent (Sherman and Rogan, 1995). Understanding how block behavior settings vary by season would help to interpret this dependency.

What police personnel do in these locations

How do police decide what to do after arriving at a high-crime location? The most effective and minimally intrusive response is for officers to disrupt the illegal activities and avoid disrupting legal activities (Green, 1996). An understanding of setting dynamics would provide guidance on achieving such a goal. Lacking this understanding, the officers may simply want to aggressively police the entire setting (Braga et al., 1997).

What information sources are needed

To intervene effectively in high-crime sites, detailed knowledge of the setting is needed. Beat officers have such detailed knowledge. The challenge is to systematically elicit, share, and archive that information. Sometimes locations become high-crime sites because of surrounding conditions, including movement patterns of potential offenders and victims (Maltz et al., 1991). Detailed information about these conditions can help to make these connections (Mazerolle and Terrill, 1997).

Crime mapping tools become even more powerful if crimes are combined with other geocoded community information. When certain rules are followed for the contextual information, it becomes a “GeoArchive” (Block, 1996):

A GeoArchive is a particular kind of geographic information system [GIS] database. . . . Like all GIS, a GeoArchive is especially organized for spatial data, and contains a digitized map and data geocoded to that map. It can be seen as a large set of map transparencies that can be overlaid on each other. But a GeoArchive has several characteristics that distinguish it from other GIS databases. . . . A GeoArchive links (1) address-based local-level data from (2) a variety of law enforcement and community sources, and (3) is organized so that it can be updated, maintained, mapped, analyzed, and used by those who are developing and implementing strategies of crime reduction in the local community.

Such a system includes information on housing code violations and locations of facilities like bus and subway stops. The geographic display of local features and data on crime and calls for service quickly links local features to various crime problems. For example, proximity to mass-transit stops was an important factor in tavern crime in the north side of Chicago (Block and Block, 1995). Effectively reducing crime in high-crime locations requires knowing much more about the site than the crime profile.

Deciding how much the site needs to be fixed

Crime varies from place to place and over time, and numerous factors affect those variations. Random influences and temporal patterns, for example, can contribute to a high crime rate at a site. Deciding how much of that crime profile emerges from factors police can address is a challenge for those allocating police resources. Some analytic techniques can answer such questions (Spelman, 1995a). For example, differences in high school crime rates may arise from random sources, changes over time, and persistent differences between the sites. Persistent differences may arise from the demographics of students attending the various schools, the administrations running the schools, and the surrounding neighborhoods. Changes over time may arise from seasonal variation or long-term regional or national trends. But it is only the persistent site differences that are an appropriate target of police interventions. Consequently, in planning an intervention and deciding what the criterion for success is, police planners might profitably isolate those persistent site differences so they know how much of a reduction they seek.

Therefore, the intervention goal is tied to the analysis of the crime variation or the calls for service variation. Otherwise, agencies risk “overmedicating” a hot spot that is only “warm,” or “undermedicating” a “red-hot” hot spot.

Picking sites for intervention

The process of identifying high-crime locations for intervention is still in a rudimentary stage, especially compared with the work in spatial epidemiology of disease (Giggs, 1990; Thomas, 1990a; Thomas, 1990b; Thomas, 1992; Wartenberg and

Greenberg, 1990). Whereas we look for crime clusters in space, they look for disease clusters in space and time. Whereas we look for clusters compared to a background of random variation, they look for clusters compared to a theoretically meaningful indicator of background intensity. Spatial epidemiologists can readily determine where and when there is more disease than there should be, given a range of factors. For criminologists, the theoretical tools, understanding of etiology, and data available rarely permit determining where there is more crime than there should be.

Some would argue the above approach is inappropriate, stating that wherever crime or calls for service are sizable, intervention is needed. On the other hand, if we know how much site features, local population features, and characteristics of adjoining locales—factors that cannot be changed—contribute to the crime rate, we have a better idea of how effective we can expect to be at these sites.

Granted, spatial epidemiologists work with causal frameworks far different from those used by criminologists. Given strong enough space-time clustering, they can assume one disease agent is at work. Within our field, pinning down causes seems much more arduous. Nevertheless, despite these differences, spatial epidemiology’s simultaneous attention to time and place clustering and concern with finding the appropriate control rate should be incorporated into spatial criminology.

Further expanding the concept

Policymakers and practitioners alike have lavished considerable attention on connections between crime and small places in the past few years. They have added issues of disorder and fear of crime to the mix as well. In the middle to late 1990s, police operations have been most affected by the small-scale focus. Nonetheless, it is easy to imagine expanding further and, for example, using information about parolee or probationer residence linked to a GeoArchive to help decide supervision levels (Buckley and Kane, 1997; Van Dine, 1997). In short, the current focus may expand the outcomes of interest and the type of place-based processes of interest, proving relevant to criminal justice practitioners beyond the police.

Appendix: Overview of Theories Relevant to Crime-Place Links

Shifting from an offender-based to a place-based criminological theory—or more accurately, developing the place-based theory as a complement to the individual focus—requires thinking in new ways (Weisburd, 1997). That conceptual retooling is now under way and is needed to effectively support crime prevention and control initiatives. I have proposed that we spur this development by relying on ecological psychology research. Recent revisions to place-based routine activity theory are already moving in that direction. This field helps us better understand how public places go awry and become high-crime or high-fear sites. It also helps us focus on what officers should do onsite.

Quick historical tour

French and English researchers in the middle of the last century investigated regional and within-county variations in offenders and crime (Glade, 1856). Regional variations continue to inspire debate in the United States, the debate on the Southern subculture of violence being one case in point (Messner, 1983; Wolfgang and Ferracuti, 1967). For example, most recently Dov Cohen and Richard Nisbett suggested that the higher homicide rates in the South emerged from a culture of honor linked to a history of independent pig farmers in mountainous Southern regions (Cohen and Nisbett, 1994; Nisbett, 1993).

Social workers in the latter part of the 19th century pointed to parts of London where misery, drunkenness, and crime flourished and many children were homeless. Some urban renewal plans around that time and later were focused on breaking up those troublesome areas (Morris, 1957).

In the first half of this century, researchers who were later identified with the Chicago School of Human Ecology documented within-city variations in delinquency (Bursik and Grasmick, 1993; Shaw and McKay, 1969), offender rates (White, 1932), mental illness (Faris, 1948), and other social problems. These and other researchers have linked

crime, offending, and delinquency rates with features of community structure like economic status, stability, and racial composition (Bursik and Grasmick, 1993; Sampson and Lauritsen, 1994). Even more recently, with the availability of the British Crime Survey (Sampson and Grove, 1989) and the Project on Human Development in Chicago Neighborhoods (Sampson et al., 1997), researchers can document the contributions of informal social control (Bursik, 1988), independent of community structure or mediating community structural impacts. Recent quantitative and qualitative studies help explain how offending patterns are linked to employment opportunities, unemployment levels, street culture, and ethnic background (Bourgois, 1989; Bourgois, 1996; Sullivan, 1989; Sullivan, 1993; Williams, 1989; Wilson, 1987; Wilson, 1996) and how all these factors contribute to long-term neighborhood deterioration. In short, after several decades of theorizing we have begun to empirically document the individual- and community-level connections and contextual effects that link delinquency, offending, and crime rates to neighborhood features, over time as well as at one point in time.

In the past 20 years or so, theorists like Jane Jacobs (Jacobs, 1968) and Don Appleyard (Appleyard, 1981; Craik and Appleyard, 1980) have devoted attention to how streetblocks “work.” Researchers have either focused on streetblocks themselves, on both sides of the blockface, between two cross streets, or on census blocks (the four sides of a city block as you walk around it). Streetblock researchers have confirmed the contributions of land use (Baum et al., 1978; Taylor et al., 1995), block design (Taylor et al., 1984), and social and organizational block characteristics (Perkins et al., 1990; Perkins et al., 1992; Taylor et al., 1981) to social withdrawal, crime, and disorder. Census block researchers have linked crime to a range of block features, including high schools, bars, and public housing (Roncek, 1981; Roncek and Bell, 1981; Roncek et al., 1981; Roncek and Faggiani, 1985; Roncek and Maier, 1991; Roncek and Pravatiner, 1989; Snyder, 1995).

Available theoretical tools

Both the tools for understanding crime-place links and the empirical support for key theories about crime and place have dramatically improved. The following theoretical models point toward features of the social and physical environment below the neighborhood level.

Crime prevention through environmental design and territorial functioning theory

Ideas about crime prevention through environmental design (CPTED)—including defensible space and related ideas about territorial functioning dating from the early 1970s—suggested that some places were safer than others partly because of how they were built and, in turn, how people used those spaces (Taylor, 1988). Some of these early views credited architecture and site planning with too strong an influence on human behavior (Taylor et al., 1980), but later works in this area have extensively documented that site features contribute to safety in many instances (Newman and Franck, 1982; Taylor et al., 1984), although not all (Merry, 1981). People in many different neighborhoods have put these ideas to work. Residents in Asylum Hill in Hartford in the 1970s (Fowler and Mangione, 1986), North Miami Shores in the early 1990s (Atlas and LeBlanc, 1994), Five Oaks in Dayton in the mid-1990s, and Guilford in Baltimore in the mid-1990s redesigned traffic circulation patterns through their neighborhoods and closed entrances to reduce crime. Some of these efforts received considerable attention from the news media, even though success has been hard to document. Across the Nation, the increasing construction of gated communities, once considered only for extremely upscale developments, represents one widespread (albeit controversial) application of these ideas.

Situational crime prevention theory

Situational crime prevention also focuses on specific features of settings that might contribute to crime. A steady stream of studies over the past 15 years or so has documented how specific setting features and changes in those features can deter offenders (Clarke, 1995). This model assumes that

offenders are rational, are motivated by potential benefits, are aware of likely crime costs, and recognize opportunities for getting away with a crime—whether that crime is vandalizing a telephone, putting slugs in the subway, or stealing a car. Sometimes reducing opportunities means making it harder for someone to commit a crime (“hardening a target”), but other times it is more than that. A recent study of Washington, D.C.’s Metro station designs and operations represents an example of situational crime prevention that integrated a number of design, management, and operational features (La Vigne, 1996).

Some are concerned that situational crime prevention strategies will simply result in displaced crime (Barnes, 1995; Repetto, 1976)—displaced spatially, temporally, or in other ways (Lab, 1992). Researchers have documented that as a result of situational crime prevention initiatives less than one crime is displaced (that is, occurs elsewhere) for each crime prevented. In some instances, adjoining areas may experience a diffusion of benefits (Clarke and Weisburd, 1994), enjoying enhanced safety only because they are near a prevention site. The debate about the volume of displacement, the quality of studies gauging such volume, and even the definition of displacement continues (Barnes, 1995). Nevertheless, most of the studies show that the effects of displacement do not nullify the benefits of prevention—and the benefits of diffusion sometimes outweigh the effects of displacement (Anderson and Pease, 1997; Green, 1995). If practitioners look at outcomes like physical deterioration and fear of crime, instead of at crime, displacement becomes a much less salient issue. As interest has shifted to these noncrime outcomes and evidence has not supported worst-case displacement scenarios, practitioners have become more comfortable with crime prevention or suppression efforts focused on small-scale locations.

Behavioral geography/crime pattern theory

According to this theory, offenders go to work, visit friends, come home, do their shopping, and carry out other daily activities just like the rest of us. During these activities, motivated offenders search for likely targets for the type of crime they hope to commit. For example, suburban burglars look for

worthwhile houses to enter that are not too far off their route between home and work (Rengert and Wasilchick, 1985). Urban, drug-using burglars may choose sites near drug markets (Rengert, 1996). Crime pattern theory integrates ideas about offenders' movements with the geographic distribution of crime targets (Eck and Weisburd, 1995). It links places with desirable targets and the context in which they are found by offenders.

Geographic profiling inverts the usual behavioral geography questions (Rossmo, 1995). Instead of asking, "If we know where the offender works and lives, can we predict what targets he or she will select?" it asks, "If we know the locations of a connected series of crimes, what can we say about where the offender most likely resides or works?" D. Kim Rossmo (1995, p. 217, and abstract) explains:

The probable spatial behavior of the offender can thus be derived from information contained in the known crime-site locations, their geographic connections, and the characteristics and demography of the surrounding areas. By determining the probability of the offender residing in various areas and displaying those results through the use of isopleth or choropleth maps, police efforts to apprehend criminals can be assisted. This investigative approach is known as geographic profiling.

The technique's creator believes it will assist police most substantially in investigations of serial murder, serial rape, and serial arson. It also may prove relevant to other serial crimes for which a set of spatially defined clues is available.

Routine activity theory

Routine activity theory and the affiliated lifestyle theory (Hindelang et al., 1978; Hindelang et al., 1979; Titus, 1995) relate closely to behavioral geography. In their earlier versions, these theories proposed that crimes occur when three things come together in space and time: a motivated offender, a suitable target, and the absence of a capable guardian (Felson, 1994).⁷ The perspective helps us understand why certain crime rates are higher around

high schools and taverns, as Dennis Roncek and his colleagues have demonstrated. It also helps explain long-term shifts in some crime rates (Felson, 1986) and differences in victimization rates among groups of people (Kennedy and Forde, 1990a; Kennedy and Forde, 1990b).

More recently, theorists have added three more pieces to the model (Felson, 1995). Motivated offenders have "handlers": Relatives, friends, or acquaintances who, without resorting to force, can discourage the motivated offender from committing the crime. Furthermore, in addition to guardians, who are focused on protecting a particular target, settings often have "place managers" who discourage crime by controlling places. A doorman on Fifth Avenue in front of an apartment building, a bus driver on a bus, a private security guard looking out over a parking lot are all looking after a particular place. Their spheres of concern are spatially broader than those of the guardian. Place managers may be differentiated based on the type of responsibility each has for the place in question. The stronger the responsibility, the more likely the place manager will do something about a crime about to happen or that has already taken place. With the introduction of the place manager, routine activity theory develops into a perspective clearly focused on small-scale locations. It tells us about differences across sites, not across communities, over time (Eck, 1995). According to John Eck, "Specific places should be a focus of research . . . for small time increments" (Eck, 1995, pp. 795–796). The theory itself has progressed down the cone of resolution.

Notes

1. The current focus on small-scale places may be a continuation of a longer term trend. See the appendix for a brief historical analysis of research on crime and its relationship to place.
2. Criminal geographers differ on the specific levels they might discuss within this cone. Keith Harries (1974) includes the following levels: regional, intermetropolitan, macro-intraurban, and micro-intraurban. Paul and Patricia Brantingham (1981) discuss State, tract, census block group, and census block levels, in accord with easily available census data.
3. These have come to be known as Compstat (computer comparison statistics) meetings. But an exclusive focus

on the crime maps overlooks the broader command and control processes, as well as the strategizing, that occur in the meetings.

4. This study did not examine the possibility that crime was displaced to a remote location. For example, in the fall of 1997, residents of Kensington, a neighborhood considerably north and east of downtown Philadelphia, expressed concern about the dramatic rise in prostitution in their locale. Many of those working the street had reportedly been displaced from the downtown area as a result of Business Improvement District (BID) activities.

5. To be selected, sites were required to have at least 20 hard- and 20 soft-crime calls in the selection year. Hard- and soft-crime calls in the experimental and treatment sites ranged from 56 to 628 (with a mean of 183).

6. The time period used for compiling the burglary history record is not clear.

7. Questions of what makes a guardian capable (and in whose eyes) remain to be explored.

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