

154651

**U.S. Department of Justice
National Institute of Justice**

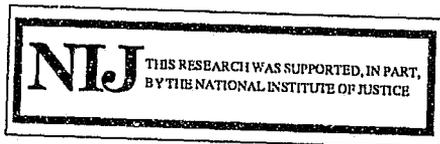
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the National Institute of Justice.

Permission to reproduce this [REDACTED] material has been granted by

Public Domain/NIJ
U.S. Department of Justice

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission of the [REDACTED] owner.



154651

NCJRS

3

JUN 7 1995

ACQUISITIONS

Contrasting Crime General and Crime Specific Theory: The Case of Hot spots of Crime

David Weisburd, Lisa Maher, and Lawrence Sherman with Michael Buerger, Ellen Cohn, and Anthony Petrosino

Criminological theory has been dominated by the search for underlying root causes common to all deviant behavior. Some scholars have found these antecedents of criminality in the social disorganization that characterizes communities where crime rates are high (Thrasher 1927; Shaw and McKay 1931, 1942). Others have looked to the differential associations that provide both the normative and educational foundations of deviance (Sutherland and Cressey 1970), or the normlessness that follows from contradictions in culture and aspirations of offenders (Merton 1938). Still others have been primarily concerned with the failures of social control (Hirschi 1969), or at times its excesses (Erikson 1962). Common to all of these approaches is the assumption that most crime will fall within a single explanation for criminality. Indeed, even white collar crime, which has often been seen to contradict conventional theorizing, was developed as a concept in order to illustrate the advantages of one general theory (see Sutherland 1973), and has recently been used to provide support for another (Hirschi and Gottfredson 1987a).

Search for a general theory for explaining crime continues (see Hirschi and Gottfredson 1987b; Gottfredson and Hirschi 1990; Wilson and Hernstein 1985) but a number of criminologists have shifted their focus to crime specific rather than general analysis. Here the concern has most often been with crime prevention rather than criminological theory (see Hope 1986; Poyner 1983, 1988; Webb 1988; for an important exception see Cohen and Felson 1979). Nonetheless these findings have led some to challenge the focus of traditional explanations for the etiology of crime and deviance. As Cornish and Clarke argue, crime specific analysis leads us away from a unitary explanation of "divergent criminal behaviors" to one that identifies the vast differences between them as "crucial to the tasks of explanation and control" (Cornish and Clarke 1986, 6; see also Clarke and Cornish 1985).

The debate between crime general and crime specific theories has generally been raised in the context of the behavior of persons. For example, studies have examined the degree to which individual offenders evidence degrees of crime specialization (e.g., see Wolfgang et al. 1972; Blumstein et al. 1986; Bursik 1980; Kempf 1986; Albrecht and Moitra 1988), or the extent to which there are similarities or differences in the nature of those who commit very different types of crimes (e.g., see Hirschi and Gottfredson 1987a; Wheeler et al. 1988; Steffensmeier 1989). In this paper we examine the salience of crime specific and crime general approaches in the context of the distribution of crime across places. Applying computer mapping techniques to police call for service data, we identify and analyze the distribution of specific offenses in what are defined as "hot spots" of crime.

Crime Causation Theory and Crime at Places

Focus upon the environments in which crime occurs has a long history in criminological study. In the first half of the nineteenth century, for example, French scholars sought to identify relationships between crime and social characteristics of geographic areas or regions (e.g., see Guerry 1833; Quetelet 1842). These "cartographic criminologist" as Smith calls them matched "spatial (usually regional) patterns of crime and offender rates with variations in

'moral' statistics (including literacy, population density, wealth, occupation, nationality and the home environment) and with physical phenomena (such as climate)" (Smith 1986, 3). Following upon the work of the French, scholars in England began to examine what was to become a major American concern, the link between urbanization and crime (Rawson 1839; Mayhew 1862, Booth 1902-3). Despite groundbreaking work in providing explanations for the distribution of crime, these ecological perspectives were quickly overtaken by scholars who looked for the causes of crime in the biological and physiological framework of individuals (Morris 1958).

The emergence of the Chicago school of American sociology in the first quarter of this century brought about a resurgence of interest in the role of ecological factors in crime causation as well as a clearly developed theoretical perspective for understanding variations in crime rates across physical space. These urban sociologists, led by Robert Park, looked to characteristics of the urban environment to explain the crime problem in American cities. They identified "interstitial areas" in Chicago where social control was weak and social disorganization pervasive (Thrasher 1927), and theorized that such factors were responsible for variations in urban crime rates (Burgess 1925). While these scholars centered their interests upon juvenile delinquency, their work sought to demonstrate the more general roles of economic deprivation, ethnic heterogeneity, and high rates of social mobility in the production of crime rates (Shaw 1929; Shaw and McKay 1931, 1942).

Perhaps because the ideas of the Chicago school were so well accepted and became so obvious a part of our understanding of city life, interest in the ecological correlates of crime faded. Shaw's confident assertion that the "study of such a problem as juvenile delinquency necessarily begins with a study of its geographical location" (Shaw 1929, 10) was not heeded by those who followed him. Rather, the next generation of researchers sought to explain why certain individuals within these high crime areas (or outside them) chose to commit crimes while others did not (Merton 1938; Sutherland 1939). These sociologists shifted focus from the ecology of crime to the predisposition of persons to criminality, though they continued to search for a unitary explanation for criminal behavior.

Recent interest in the ecology of crime, much like that of the

Chicago school,¹ developed primarily from a desire to further public policies for crime control. This "environmental criminology" as it is called by Brantingham and Brantingham (1981) is generally more concerned with applied crime prevention than crime causation theory (for critiques see Cohen 1985; South 1987). It is thus not surprising that scholars who have made important contributions to recent research in this area have been drawn from a diverse set of scholarly disciplines. Represented among them are geographers (see Harries 1974, 1976, 1980; Herbert 1980; Herbert and Harries 1986) architectural designers and planners (see Angel 1968; Gardiner 1978; Jacobs 1961; Newman 1972, 1980) as well as traditional criminologists (see Clarke 1980; Clarke 1983; Clarke and Mayhew, eds. 1980; Heal and Laycock, eds. 1986).

Environmental strategies of crime control began with efforts to alter specific aspects of urban design (Jeffrey 1977) or urban architecture (Newman 1972), but broadened to take into account a much larger set of characteristics of physical space and criminal opportunity (e.g., Brantingham and Brantingham 1975, 1977, 1981a; Mayhew et al. 1976; Duffala 1976; Rengert 1980, 1981, Stoks 1981; Scott, Crow, and Erikson 1985; Jeffrey, Hunter, and Griswold 1987; Le Beau 1987; Hunter 1988; Cromwell 1991). Advocates of the environmental perspective argued that the physical space where criminal events occur should be the focus of criminological inquiry (Brantingham and Brantingham 1975, 1981; see also Herbert 1982; Herbert and Hyde 1985; Herbert and Harries 1986), but they did not stake out a clear position on whether this switch of concern would also demand rejection of the traditional assumptions of crime causation theory. Environmental criminology's basic contribution lay in its call for a change in the unit of analysis from persons (or criminality) to places (or crimes), and the identification of new variables to add to ecological models (e.g., see Taylor et al. 1981, 1984; Taylor and Gottfredson 1986; Byrne 1986; Sampson 1986a, 1986b, 1987).

Two perspectives that have benefited from these recent contributions to environmental and ecological study are particularly pertinent to the questions raised in our paper. One provides a definitional framework for examining the distribution of crime across places. The other questions to what extent ecological or opportu-

nity analyses alter the parameters of conventional criminological theory.

In a recent article in *Criminology*, Sherman, Gartin, and Buerger (1989) define what they describe as the "criminology of place." Place, as they understand it, is "a fixed physical environment which can be seen completely and simultaneously, at least on its surface, by one person's naked eyes" (Sherman et al. 1989, 31; see also Sherman and Weisburd 1987), a definition that allows them to examine the concentration of police call data across addresses (the smallest unit of visual space) in the city of Minneapolis. Their analysis "reveals substantial concentrations of all police calls, and especially calls for predatory crime, in a relatively few 'hot spots.'" (1989, 37; see also Beavon 1984; Brantingham and Brantingham 1981b). On the surface, such findings appear to support the salience of a common set of antecedents for much criminal conduct, at least that portion labelled as "predatory." Yet, Sherman et al. did not examine the relationship among specific crimes at the addresses they examined. Nor were they able to aggregate their data beyond individual addresses. Their work thus left open the possibility that crime concentration at places reflects the clustering of particular and specialized forms of criminality in discrete environments.

It is this latter concern which forms the basis for Clarke and Cornish's critique of conventional crime causation theory (Clarke and Cornish 1985; Cornish and Clarke 1986). Following upon a series of situational crime prevention studies for specific offenses (e.g., in regard to burglary, theft, and vandalism), they argue that there is a substantial body of evidence challenging attempts to develop a unitary theory for explaining crime. Cornish and Clarke suggest that a more crime specific focus is called for, which would develop models of criminal decision making "in relation to particular types of crime" (Cornish and Clarke 1989, 104). While they provide a general framework for developing such models they argue that the "desire to construct general statements about crime, deviancy and rule breaking has consistently diverted attention from the important differences between types of crime—the people committing them, the nature of the motivations involved and the behaviors required" (Clarke and Cornish 1985, 165).

Identifying Hot Spots of Crime

Our data for examining the distribution of crime at places are drawn from the Minneapolis police dispatch system between June 6th of 1987 and June 5th of 1988. While police calls have not generally been used as an indicator of crime events, as Sherman et al. note they "provide the widest ongoing data collection net for criminal events in the city" (1989, 35). Call data often include criminal activities that get filtered out by police discretion or victim fear in official crime reporting.

Sources of error in call data in Minneapolis, however, as elsewhere, are not insubstantial (for a review of this problem, see Sherman et al. 1989). Crimes identified by the dispatch system may represent intentional lies or a misinterpretation of events by victims, bystanders, or call takers. In poorer areas, where private telephones are not as prevalent, address information may be indicative of places where victims are able to find a phone rather than where crime events occur. While our observations of call-generated crime reporting suggest that call operators are sophisticated in their identification and classification of crime (see also Manning 1988), we recognize that there may be a substantial degree of reporting error in our data. Whether the count of crime as measured by dispatched calls is a less reliable indicator than other traditional reporting methods such as analysis of complaint reports we cannot say. Other data suggest that there is a very high correlation between reported crime and police calls (see Taylor et al. 1981). Moreover, as Biderman and Reiss (1967) note there is no "true" count for crime events, only socially organized counting methods each with its own sources of bias and error.

Because police call data include a substantial amount of information that is not reflective of criminal activity, we chose to extract from the Minneapolis file a series of fifty-two crime call categories (see appendix 3-1). These ranged from serious criminal events such as stabbings, shootings, rapes, or robberies to relatively minor violations such as disorderly conduct or even noise on the street. Using these criteria for extraction of call data we identified a sample of 194,668 events.

Our identification of places of high call activity from these data

was facilitated by site selection work in the Minneapolis Hot Spots Patrol Experiment (Sherman and Weisburd 1989).² We began by selecting only addresses that included three or more "hard" crime calls (see appendix 3-1). The distinction between "hard" and "soft" crime is one suggested by Albert Reiss, Jr. (1985) in order to contrast more serious predatory offenses and what some have identified as incivilities or crimes of public disorder.³ This distinction was used in our analysis primarily because we sought to identify places amenable to police intervention which, relative to other locations, included a large number of serious property or person offenses. Some 5538 addresses fit our criteria for initial inclusion in the analysis out of an estimated 115,000 addresses in the city of Minneapolis.

But we did not want to stop with identification of what might be called high rate addresses, since we believed it likely that the addresses would cluster together into what we defined as crime hot spots. Accordingly, we utilized computer mapping techniques to identify the spatial relationships among the 5538 high rate addresses.⁴ As we expected, we found a substantial degree of clustering of those addresses, which allowed us to define discrete areas, usually less than a block long as "hot spots of crime."⁵

As we did not want to examine every cluster of crime activity as identified by calls for service, but rather only high activity clusters, we set a threshold of twenty separate hard crime call events for initial inclusion in our sample. This left us with 420 preliminary hot spots that were then examined in Minneapolis by two observers. The observers were able to distinguish addresses that were visually close on the maps, but in reality distant one from another or separated by natural or man-made boundaries. Conversely they linked addresses that were proximate, but appeared distant on our computer maps. Following these observations we were left with 365 valid crime hot spots.⁶

These 365 hot spots of crime account for more than a quarter of the total number of crime call events in the city of Minneapolis in the year we examined (see table 3.1), though we estimate that the hot spots comprised no more than 2.5 percent of the city's street segments or blocks.⁷ While our initial criteria for selection of hot spots was based only on hard crime calls, we also find that the

TABLE 3.1
Comparison of Crime Calls within Hot Spots to Minneapolis City Totals

	Soft Crime Calls	Hard Crime Calls	Total Crime Calls
Hot spots	36,248 (27.82%)*	17,594 (27.33%)*	53,842 (27.66%)*
City total	130,296	64,372	194,668

*% of city total calls located in hot spot boundaries.

relative proportion of hard and soft crime events is very close to the overall city-wide distributions. Nonetheless, there is considerable variation in the proportion of the total number of specific crime calls found in the hot spots. In the case of "thefts" and "morals" (mostly street prostitution), for example, more than half of all calls city wide are found in our sample. In contrast, fewer than ten percent of "proowler" and "hot rod" calls are found in the hot spots. For the majority of call categories, somewhere between twenty and forty five percent of total calls were linked to addresses in the 365 hot spots.

Analysis

The debate between advocates of specific and general theories of crime causation can be directly related to the distribution of crime across places. If there is a common set of underlying causal factors that influence all crimes, we would expect to find relatively little specialization in the types of crimes that are committed at hot spots. Rather we would expect a heterogenous group of crimes where crime events are clustered. As James Q. Wilson and George Kelling (1982) argue in their influential article "Broken Windows" in regard to neighborhoods of developing social and physical decline:

Such an area is vulnerable to criminal invasion. Though it is not inevitable, it is more likely that here, rather than in places where people are confident they can regulate public behavior by informal controls, drugs will change hands, prostitutes will solicit, and cars will be stripped. That the drunks will be robbed by boys who do it as a lark, and the prostitutes purposefully and perhaps violently. That muggings will occur. (1982, 3)

In some sense, our finding of a very high concentration of crime calls at hot spots in Minneapolis provides initial support for a general theory of crime causation at places. This is because we find that crime is indeed disproportionately concentrated at certain hot spots, places that presumably have common characteristics that make them "criminogenic." Yet, the concentration of crime in particular hot spots does not tell us whether there is something specific to certain environments that leads to the occurrence of particular forms of criminality. If the premise of crime specific theory is correct, then we would predict that specific types of crimes would occur in specific hot spots. By implication we would expect there to be little relationship or a negative among crimes at hot spots (since such places are assumed to evidence specialization in crime occurrences).

In order to contrast these two general models for crime causation at places—one that predicts little specialization at hot spots and another that suggests a high degree of specialization—we analyze the correlation of crime calls across hot spots. Our analysis is based on the hot spots described above, though we do not examine all crime call categories. Our decision to exclude certain crime types was due both to the relative infrequency of some of the crimes and the lack of clear definition of a number of others. The fourteen crime call types we examine include damage to property, domestic disputes, morals offenses, drunks, rape, burglary of a business, burglary of a dwelling, robbery of a business, robbery of a person, thefts, shootings, stabbings, auto theft, and assault.⁸ Overall these categories accounted for 56.4 percent of the crime calls that are found in our hot spots sample.

Examination of the correlations among crime call occurrences across places raises a strong challenge to the hypothesis that all crimes are linked (see table 3.2). In some cases such a finding seems obvious when we turn from places to persons in explaining criminality. For example, it is not surprising that burglaries of dwellings and burglaries of businesses are negatively related. It is often impossible to commit both of these offences in a hot spot—since many hot spots are made up wholly of either business or residential addresses. But such obvious constraints on what crimes may be committed in a particular place, do not apply to the small

or negative correlations found between such crimes as burglaries of businesses and auto theft, or shootings and robberies. Indeed, it is common today for scholars to identify a link between serious crimes such as stabbings or shootings, and minor offenses such as thefts, moral offences, and auto theft. But our data do not.

The relationship of morals (primarily prostitution) calls and other offenses is particularly interesting in the light of theoretical links that have been made between public disorder and serious crimes (e.g., see Wilson and Kelling 1982; Reiss 1986). Contrary to these perspectives, we find weak links at hot spots, between morals calls and other calls with the exception of "drunks," burglaries of businesses, robberies of persons, and assaults. In turn, though these correlations are significant, with the exception of robbery of persons they are relatively small.

While there is substantial evidence in table 3.2 that crimes often assume to be linked are not in fact correlated (and often negatively correlated) at hot spots, our data also indicate that certain crime categories are strongly related. Domestic calls and burglaries of dwellings for example, are correlated at over .70. Robberies of persons and drunk calls, as well assaults and robberies of person, and domestic and assault calls, and stabbing and assault calls, are all correlated at hot spots at greater than .50. While we do not have the kind of supplemental quantitative or qualitative detail necessary to define the specific reasons why these particular types of crime calls are so strongly linked, such relationships may be understood to some extent with reference to the crime categories themselves. Domestic violence and burglaries of dwellings for example demand residential locations, and we might speculate that nondomestic assaults and stabbings are often the product of street disputes.

Similar explanations may be used for call categories that reflect somewhat weaker though still significant relationships. For example, rapes are unrelated to such crime calls as morals, drunks, thefts or auto theft, but related to crime calls of violence such as shootings, stabbings, and assaults. In turn, it is not surprising that morals offenses are moderately related to robberies of persons, or that domestics are moderately related to shootings and stabbings. Prostitutes are often assumed to victimize their "johns," and police

TABLE 3.2
Correlation Matrix for Frequency of Crime Calls at Hot Spots (N=365)

Correlations:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Damage Property (1)	1.0													
Drunk ¹ (2)	.21*	1.0												
Morals ² (3)	.04	.18*	1.0											
Thefts ¹ (4)	.37*	.49*	.13	1.0										
Autotheft (5)	.39*	.11	.13	.33*	1.0									
Burglary Business (6)	.20*	.22*	.18*	.23*	-.04	1.0								
Burglary Dwelling (7)	.19*	-.18*	-.07	-.12	.01	-.09	1.0							
Robbery Business ¹ (8)	.01	.18*	.07	.27*	.02	.21*	-.05	1.0						
Robbery Person (9)	.26*	.52*	.39*	.46*	.26*	.07	.04	.20*	1.0					
Assault (10)	.36*	.46*	.16*	.28*	.13*	.04	.36*	.13	.58*	1.0				
Domestics (11)	.21*	-.05	-.05	-.05	.01	-.13	.73*	-.11	.13	.54*	1.0			
Shootings (12)	.09	.02	.01	.02	.02	-.02	.27*	-.07	.19*	.27*	.38*	1.0		
Stabbings (13)	.17*	.28*	.02	.06	-.01	-.01	.27*	-.02	.27*	.55*	.41*	.16*	1.0	
Rape (14)	.14*	.12	.04	.02	.05	-.08	.27*	.02	.20*	.35*	.35*	.28*	.27*	1.0

¹Variable was logged to correct for non-linearities

officers often speak of the potential violence that surrounds domestic disputes.

One way of gaining an overall view of the strength of association among the call categories examined is to standardize the correlation coefficients according to their magnitude. In a widely used measure of "effect size" Cohen (1988) suggests that a correlation of less than .30 represents a "small effect," one of between .30 and .50 a "medium effect" and one of over .50 a "large effect." Using these criteria it is clear that the relationships among crime occurrences at places are generally very small (see table 3.3). Of the ninety-one potential correlations in the matrix, a total of seventy-three evidence small relationships (of which some forty-two are not statistically significant at the .01 level). Only thirteen (or 14 percent) show medium "effects" and only five reach what Cohen describes as a large "effect size." Accordingly, while we noted earlier that there are some strong relationships found between call categories at places, overall there is relatively little association among the crime call categories examined.

Can we conclude then that our data are consistent with the assumptions of crime specific as contrasted with crime general theorizing? If we examine more closely the nature of crime specialization at hot spots, such an assumption appears unwarranted. In table 3.4 we look at the number of hot spots with selected proportions of specific crime call categories included in our analyses. The crime specific perspective would predict that there would be a concentration of particular crimes at particular hot spots: for example hot spots for burglary or auto theft distinct one from another. Yet, our data indicate relatively little crime concentration at hot

TABLE 3.3
Examination of "Effect Sizes" in Correlation Matrix

	#	%
Non-significant "Effects":	42	46.15
"Small Effects" ($r < .30$):	31	34.07
"Medium Effects" ($.30 < r < .50$):	13	14.29
"Large Effects" ($r > .50$):	5	5.49
Total	91	100%

* $p < .01$

spots. Only in the case of thefts is there any hot spot in which more than 60 percent of the total crime calls are generated by one crime category, and with the exception of thefts and domestic disturbances there are very few hot spots where even 30 percent of the crime calls can be attributed to a particular crime type.

Discussion

Our findings are not consistent with either crime general or crime specific theorizing, but rather provide a position somewhere between the polar extremes that are often associated with this debate. Before we turn to a discussion of the implications of this finding for our understanding of crime at places, we want to address some specific limitations that derive from our particular approach to these problems.

A simple explanation for the divergence of our findings from those suggested by crime general theory could be found in the fact that we have chosen places for examination rather than individuals. It could very well be that general causes motivate offenders but particular environments provide opportunities for specific types of crime. In some ways this approach is very much consistent with traditional understandings of crime causation. For example Sutherland and Cressey note that the "objective situation" of criminal acts provides the specific opportunities for crime, but address themselves in detail only to the factors that lead certain individuals to take advantage of crime prone situations (see 1970, 74-75, see also Hirschi and Gottfredson 1990). Though such an explanation would not challenge our finding that general causes do not predict the distribution of crime across places, we recognize that general propositions relating to the causes of individual offending are not necessarily inconsistent with our data.

Our choice of hot spots may have also accentuated characteristics unique to particular forms of offending, precisely because we examine crimes in relatively small discrete places that have very specific environmental qualities. When applied to places criminological theory has been developed with reference to the large worlds of neighborhoods and communities, not the small worlds represented by clusters of addresses. We believe that such precision is

TABLE 3.4
Number of Hot Spots with a Specific Proportion of Selected Crime Call Categories

Crime Types	None	.01-10%	10.01-20%	20.01-30%	30.01-60%	60.01-100%	N
Damage property (N=1915)	3	331	31	2	0	0	365
Drunk (N=2280)	81	252	29	3	0	0	365
Moral (N=610)	288	70	3	1	3	0	365
Thefts (N=9376)	0	155	107	49	48	6	365
Autotheft (N=1086)	56	295	14	0	0	0	365

Burglary of a business (N=851)	108	243	13	0	1	0	365
Burglary of a dwelling (N=1911)	69	254	37	4	1	0	365
Robbery of a business (N=278)	254	107	4	0	0	0	365
Robbery of person (N=1563)	62	296	7	0	0	0	365
Assault (N=3816)	13	274	73	5	0	0	365
Domestic disturbance (N=6209)	30	169	79	57	30	0	365
Shootings (N=120)	292	73	0	0	0	0	365
Stabbings (N=361)	207	158	0	0	0	0	365
Rape (N=265)	228	137	0	0	0	0	365

essential to gaining a clearer understanding of the causes of crime. Yet, this strategy of analysis could serve to mask features common to all types of crime. In some sense the fact that we find concentrations of hot spots in certain parts of the city supports a more general view of crime causation, and we have no doubt that there are structural conditions like social disorganization, which are in some way related to offending. At the same time, there are hot spots even in the better neighborhoods in Minneapolis, and even in the worst ones there are discrete areas free of crime hot spots. What is clear from our findings, is that crime call categories are not strongly related across hot spots, a fact that challenges those who would link all crime at places into some broad category for explanation.

The choice of hot spots as a unit of analysis may also be seen as masking substantial clustering of individual offense types at individual places, and thus underestimating the degree to which places evidence crime specialization. Crime specific advocates usually begin their analyses by searching for areas where specific crimes are known to be concentrated. We have already shown that few hot spots in our study are dominated by a particular crime category. Nevertheless, it might be argued that our strategy for identifying hot spots of crime has underestimated the number of places with relatively few but nonetheless specialized crime events.

A final issue relating to our method develops from our use of cross-sectional rather than longitudinal data. Theories that define general causes to crime in neighborhoods often identify a causal chain that begins in time with minor crime events and culminates in the most serious crimes. Indeed, from the time of the Chicago school, a number of those who have studied crime have looked to the histories of communities and the ways in which these histories impact the nature and types of crime in urban areas (e.g., see Burgess 1925; Shaw and McKay 1942; Reiss 1986). In this regard Wilson and Kelling (1982), who we cited earlier, expect a growing disorganization in neighborhoods that begins with broken windows and other incivilities and leads to serious property and person crimes over time. Clearly, a longitudinal study of hot spots of crime would provide a more powerful test of such propositions. Nevertheless, the fact that there are generally weak correlations in our study

even among crime call categories of similar seriousness provides a direct challenge to the notion that general causes lead to particular stages in the development of what has been defined as the crime problem.

Conclusions

Most crime causation theories are consistent with the premise that crime is a unified phenomenon with a common set of general "causes" (Steffensmeier 1989). Our examination of the distribution of crime calls across places, within the limitations described above, provides a challenge to this proposition. But our data also depart from what we might expect if we posit a specific "cause" to each crime type (e.g., Clarke and Cornish 1985). Indeed, we find that a number of specific crimes are related one to another across hot spots of crime, a result that would suggest that attention to common causes of particular clusters of crimes at places is warranted.

While our results are at first glance contradictory, they are consistent with the observations of a number of other scholars (e.g., see Wheeler et al. 1988; Steffensmeier 1989), and with a broader criminological tradition that recognizes the social nature of definitions of criminal conduct (see Durkheim 1933, 1982; Becker 1963). Clearly, the labels assigned to crime calls are socially determined and accordingly they may obscure much that is common to the underlying behaviors that they are meant to define. Thus, we are not surprised that certain crime calls are strongly related in our study. But beyond this, we think it more a matter of criminological polemic than of the reality of the distribution of crime across both places and persons that some have assumed the preeminence of either a general or specific approach to explaining crime. We find no inconsistency in recognizing that both specific and general causes play an important part in the development and distribution of crime and criminality.

Appendix 3.1

Definitions of Call Categories Identified as Hard or Soft Crimes

Hard Crime

ASLT Assault, with or without a weapon (or display of weapon)

- ALSTP Assault in progress
- AUTOTH Auto theft
- BURGB Burglary of a business
- BURGBP Burglary of a business, in progress at the time of call
- ABURGB Attempted burglary of a business (unsuccessful)
- BURGD Burglary of a dwelling (residential burglary, includes both private homes and apartments)
- BURGDP Burglary of dwelling, in progress
- ABURGD Attempted burglary of a dwelling (unsuccessful)
- CSCM Criminal sexual conduct (molester)
- CSCR Criminal sexual conduct (rape)
- KIDNAP Kidnapping abduction
- AROBZ Attempted robbery of a business (involves a face-to-face confrontation between a would-be robber and an intended victim), without a successful conclusion; taking of property by force or threat of force
- ROBBIZ A (successful) robbery of a business
- ROBBZP Robbery of a business, in progress (telephone report from a source other than a hold-up alarm)
- AROBPR Attempted robbery of a person (can be either armed or strong-arm robbery; includes purse-snatching)
- ROBPER Robbery of a person (armed or strong-arm), usually in a public place
- ROBDWL Robbery of a dwelling (house or apartment)
- SHOOT Someone hit by bullets; various causes
- STAB Stabbing (nonaccidental)
- THEFT Taking of property, without force or threat of force
- THEFTP Theft, in progress
- THEFTA Theft from auto (frequently involves damage to the auto, broken windows, etc.)

Soft Crime

- AOA Assist other agency; frequently but not exclusively law-enforcement related, this category also includes assisting city building inspectors and child protection agency officers conduct their business in potentially explosive situations

- ASTOFF Assist police officer, nonemergency situations
- BOOK Booking; a self-initiated arrest (on warrants, on probable cause for felonies, or for misdemeanors occurring in the officer's presence; these are usually not distinguished in the call data)
- CUSTRB Customer trouble at a local business
- DABUSE Domestic abuse, involving assaults and/or threats within a family or intimate relationship; also includes reports of violations of restraining orders
- DAMP RP Damage to property, vandalism
- DIST Disturbance, with no further specification; often overlaps with "domestics" and "fights," as well as non-classified calls like "party" and "music" complaints
- DK A drunk, usually standing or mobile
- DOMES A domestic quarrel (between/among relatives or household members), *without* physical assaults, threats, or violations of restraining orders
- DOMESW A domestic fight in which weapons are used, or displayed (a subset of DABUSE which has been retained as a separate category: it allows dispatchers to recognize it as a higher priority call in the "calls pending" queue, and provides a warning to assigned officers that they are going into a situation of heightened danger)
- HDOMES Heavy domestic, used to signify a domestic fight which was in progress at the time of the call (call-taker could hear sounds of a fight or assault over the phone)
- DOWN Person down on the ground or sidewalk; unknown details, could be either drunk or ill, or an accident or assault victim
- FC Firecrackers; FC calls are given out to squads as an "in-service" call (i.e., check the area, but do not contact the complainant)
- FIGHT Usually distinguished from ASLT by the number of people involved; fights take place among larger groups, and there is no immediately identifiable "victim"; the vicarious victimization to passersby is more attenuated
- FIGHTW Fight, with weapons

- HOTROD Noise or other disturbance created by mobile motor vehicles
- KIDTRB Kid trouble; a catch-all identification of juveniles acting up in a variety of ways
- MORALS A police-initiated category, usually indicating the arrest of a prostitute or hustler; occasionally denotes other offenses
- NBRTRB Neighbor trouble; another catch-all, this time involving people who live near and are known to each other
- PERGUN Person with a gun; unlike ASLT, vicarious victimization is still only potential
- PERWEA Person with a weapon, nonfirearm
- PROWL Prowler; also includes peeping toms
- SHOTS Sounds of shots fired, no data to indicate any injuries or even potential victims
- SUSPP Suspicious person; sometimes related to prostitution activity
- SUSPV Suspicious vehicles
- THEFTH Theft, holding one; shoplifting calls, usually confined to the interior of business locations, with extremely attenuated "public" victimization
- THREAT Verbal, phone, or mails threats against a person's life, safety, or property; usually, no immediate danger is indicated.
- UNKTRB Unknown trouble; call-taker is unable to elicit information from the caller; approximately half turn out to be Domestic calls, while another 10-20 percent are kids playing with the telephone
- UNWANT Unwanted person; a catch-all that includes some domestic situations, some guests who have worn out their welcome, and a lot of drunks and derelicts either sleeping it off where they don't belong, or trying to get into places they don't belong to sleep it off (ringing doorbells, panhandling, and "harassment" also fall into this category)

This research was supported by Grant Number 88-IJ-CX0009 from the National Institute of Justice and a Research Council Award from Rutgers University. Points of view or opinions expressed do not necessarily represent the official position or

policies of the U.S. Department of Justice or Rutgers University. An earlier version of this paper was presented at the American Sociological Association Meeting, San Francisco, 1989. Helpful comments on earlier drafts were provided by Marcus Felson, Patricia Brantingham, Ronald Clarke, and David Greenberg.

Notes

1. As Matza (1969) notes, the Chicago school had a "correctional" approach to crime that emphasized the control and amelioration of such common urban problems as delinquency and vagrancy.
2. The task there was to identify a specialized group of hot spots of multiple addresses in the city of Minneapolis that would evidence a high degree of crime stability year to year, a high likelihood of activity that was amenable to deterrence through police presence, and enough distance one to another to prevent treatment contamination of control groups. In order to develop such a sample it was necessary to examine the distribution of crime events as represented by call data throughout the city of Minneapolis, a process that allowed us as well to identify and analyze the entire "universe" of hot spots as we define them.
3. We depart from Reiss's classification in one important way. He describes vandalism or damage to property as a "hard" crime, primarily because there is significant monetary loss. Our observations suggest that most of the calls in this category involve only very minor losses to victims. Accordingly damage to property is included as a soft crime in our site selection process.
4. To facilitate this process we sought as a first step to merge our 5538 addresses with a computer map provided by Mapinfo Corporation (1988). While we experienced some difficulty in this process because of different definitions of places used by the City of Minneapolis and Mapinfo, we were able to overcome most of these. In cases of very high activity addresses that were not defined by Mapinfo we hand plotted addresses. However, our final computer map did not include some 5 percent of the hot addresses we identified. Almost all of these excluded addresses included fewer than ten hard crime calls.
5. Where blocks were very small and "hot addresses" relatively contiguous (and where visual sighting could easily go beyond a block) the "one-block rule" was violated.
6. Disagreements on hot spot boundaries between the observers were most often encountered in fringe addresses in places where crime concentration generally was high. For the final 110 sites in the Minneapolis Hot Spots Experiment, observers reported 75 percent agreement on hot spot boundaries. However, agreement was much lower earlier in the selection process where resolutions of disagreements were made by a project principal investigator. Observers also identified and deleted known magnet phone addresses which drew calls primarily from other places outside the hot spot boundaries.
7. Mapinfo identifies some 15411 street segments in the city. Hot spots were almost always less than one street segment in length.
8. For a general description of call categories see appendix 3.1. We combine related crime categories as follows:

theft	= THEFT + THEFTP + THEFTH
autotheft	= AUTOTH + THEFTA
burglary business	= BURGB + BURGBP + ABURGB
burglary dwelling	= BURGD + BURGDP + ABURGD
robbery business	= ROBBIZ + AROBBZ + ROBBZP + ALARMH
robbery person	= ROBPER + AROBPR
assault	= ASLT + ASLTP
domestic	= DABUSE + DOMES + HDOMES + DOMESW

References

- Albrecht, H. J. and Moitra, S. (1988). Escalation and specialization: A comparative analysis of patterns in criminal careers. In G. Kaiser and I. Geissler *Crime and criminal justice: Criminological research in the 2nd decade at the Max Planck Institute in Frieberg* (115-36). Frieberg, Eigenverlay Max-Planck-Institut.
- Angel, S. (1968). *Discouraging crime through city planning*. Working Paper No. 75. Berkeley, University of California, Institute of Urban and Regional Development.
- Beavon, D. J. K. (1984). *The use of micro-spatial data and its implications for crime prevention*. Paper presented at the annual meeting, American Society of Criminology, Cincinnati.
- Becker, H. (1963). *Outsiders: Studies in the Sociology of Deviance*. New York, Free Press.
- Biderman, A. D., and Reiss A. J. (1967). On exploring the "darkfigure" of crime. *Annals of the American Academy of Political and Social Sciences* 374: 1-15.
- Blumstein, A., Cohen, J., Roth J. A., and Visher C. A. (1986). *Criminal Careers and Career Criminals*. Washington, D. C., National Academy Press.
- Booth, C. (1902-3). *Life and Labor of the People in London*, 17 volumes (3rd Edition), London, Macmillan.
- Brantingham, P. J., and Brantingham, P. L. (1975). *Residential burglary and urban form*. *Urban Studies* 12: 273-84.
- Brantingham, P. L., Brantingham, P. J., eds. (1977). Housing patterns and burglary in a medium-sized American city. In J. F. Scott and S. Dinitz (eds.), *Criminal Justice Planning* (63-74). New York, Praeger.
- Brantingham, P. J. and Brantingham, P. L. (1981a). *Environmental Criminology*. Beverly Hills and London, Sage.
- Brantingham, P. L. and Brantingham, P. J. (1981b). "Mobility, notoriety, and crime: a study in the crime patterns of urban nodal points." *Journal of Environmental Systems* 11, 89-99.
- Burgess, E. W. (1925). The growth of the city. In R. E. Park, E. W. Burgess, and R. D. McKenzie, *The City* (47-62). Chicago, University of Chicago Press.
- Bursik, R. J. (1980). The Dynamics of specialization in juvenile offenses. *Social Forces* 58: 851-64.
- Byrne, J. M. (1986). Cities, citizens and crime: the ecological/nonecologi-

- cal debate reconsidered. In J. M. Byrne and R. J. Sampson (eds.), *The Social Ecology of Crime* (77-101). New York, Springer-Verlag.
- Clarke, R. V. G. (1983). Situational crime prevention: Its theoretical basis and practical scope. In N. Morris and M. Tonry, *Crime and Justice: An Annual Review of Research*, volume 4. Chicago, University of Chicago Press.
- Clarke, R. V., and Cornish D. B., (1985). Modelling offenders' decisions: A framework for research and policy. In M. Tonry and N. Morris (eds.), *Crime and Justice: An Annual Review of Research*, volume 6 (147-85). Chicago, University of Chicago Press.
- Clarke, R. V. G., and Mayhew P., eds. (1980). *Designing out crime*. London. HMSO.
- Cohen, Jacob. (1988). *Statistical Power Analysis for the Behavioral Sciences*, second edition. Hillsdale, N. J. Lawrence Erlbaum Associates.
- Cohen, L. E., and Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review* 46: 558-608.
- Cohen, S. (1985). *Visions of Social Control: Crime, Punishment and Classification*. Cambridge, Polity Press.
- Cornish, D. B., and Clarke, R. V. (1989). Crime specialization, crime displacement and rational choice theory. In H. Wegener, F. Losel and J. Haisch (eds.). *Criminal Behavior and the Justice System: Psychological Perspectives* (103-17). New York, Springer-Verlag.
- Cornish, D. B., and Clarke, R. V., eds. (1986). *The Reasoning Criminal*. New York, Springer-Verlag.
- Duffala, D. C. (1976). Convenience stores, armed robbery and physical environmental features. *American Behavioral Scientist* 20: 227-46.
- Durkheim, E. (1933). *The Division of Labor in Society*. Glencoe, Ill., The Free Press.
- Durkheim, E. (1982). *The Rules of Sociological Method*. New York, The Free Press.
- Erikson, K. T. (1962). Notes on the sociology of deviance. *Social Problems* 9: 307-14.
- Gardiner, R. A. (1978). *Design for Safe Neighborhoods*. Washington, D. C., Government Printing Office.
- Gottfredson, M. R., Hirschi, T. (1990). *A General Theory of Crime*. Stanford, Cal., Stanford University Press.
- Guerry, A. M. 1833). *Essai sur la statistique moral de la France avec cartes*. Paris, Crochard.
- Harries, K. D., (1974). *The Geography of Crime and Justice*. New York, McGraw-Hill.
- Harries, K. D. (1976). Cities and crime. A geographical model. *Criminology* 14: 369-86.
- Harries, K. D. (1980). *Crime and the Environment*. Springfield, Ill. C. C. Thomas.
- Heal, K., and Laycock, F., eds. (1986). *Situational Crime Prevention: From Theory into Practice*. London, HMSO.
- Herbert, D. T. (1980). Urban crime and spatial perspective: The British

- experience. In D. E. Georges-Abeyies and K. D. Harries (eds.), *Crime: A Spatial Perspective* (26-46). New York, Columbia University Press.
- Herbert, D. T. (1982). *The Geography of Urban Crime*. London, Longman.
- Herbert, D. T. and Harries, K. D. (1986). Area based policies for crime prevention. *Applied Geography* 6: 281-95.
- Herbert, D. T., and Hyde, S. W. (1985). Environmental criminology: Testing some area hypotheses. *Transactions, Institute of British Geographers* 10 (3): 259-74.
- Hirschi, T. (1969). *Causes of Delinquency*. Berkeley, University of California Press.
- Hirschi, T. and Gottfredson, M. (1987a). Causes of white collar crime. *Criminology* 25: 949-74.
- Hirschi, T. and Gottfredson, M. (1987b). Toward a general theory of crime. In W. Buikhuisen and S. Mednick (eds.) *Explaining crime: Interdisciplinary approaches* (8-26). Leiden, Brill.
- Hope, T. (1986). School design and burglary. In K. Heal and G. Haycock (eds.), *Situational Crime Prevention: From Theory into Practice* (73-79), London, HMSO.
- Hunter, R. D. (1988). *Environmental characteristics of convenience stores robberies in the state of Florida*. Paper presented at the annual meeting, American Society of Criminology, Chicago.
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York, Random House.
- Jeffrey C. R. (1977). *Crime Prevention Through Environmental Design*. Beverly Hills and London, Sage.
- Jeffrey, C. R., Hunter, R. D., and Griswold, J. (1987). Crime prevention and computer analysis of convenience store robbery in Tallahassee, Florida. *Security Systems*, August, 1987.
- Kempf, K. (1986). Offense specialization: Does it exist?. In D. B. Cornish and R. V. Clarke (eds.), *The Reasoning Criminal* (186-99). New York, Springer-Verlag.
- LeBeau, J. L., (1987). The method and measures of centrography and the spatial dynamics of rape. *Journal of Quantitative Criminology* 3: 125-141.
- Manning, P. K. (1988). *Symbolic Communication: Signifying Calls and the Police Response*. Cambridge, MIT Press.
- Matza, D. (1969). *Becoming Deviant*. Englewood Cliffs, N. J., Prentice Hall.
- Mayhew, H. (1862). *London Labour and the London Poor*. London, Griffin, Bohn.
- Mayhew, P. M., Clarke, R. V. G., Sturman, A. and Hough, J. M. (1976). Steering column locks and car theft. Home Office Research Study, No. 34, London, HMSO. (Reprinted 1983). Crime as opportunity. In R. V. G. Clarke and B. Cornish (eds.), *Crime Control in Britain: A Review of Policy Research* (235-47). Albany, State University of New York Press.
- Merton, R. (1938). Social structure and anomie. *American Sociological Review* 3: 672-82.

- Morris, T. M. (1958). *The Criminal Area*. London, Routledge and Kegan Paul.
- Newman, O. (1972). *Defensible Space: Crime Prevention Through Urban Design*. New York, Macmillan.
- Newman, O. (1980). *Community of Interest*. New York, Doubleday.
- Poyner, B. (1983). *Design Against Crime*. London, Butterworths.
- Poyner, B. (1988). *Design modifications to prevent crime in mass housing—Fallacies and realities*. Paper presented at the 40th annual meeting, American Society of Criminology, Chicago.
- Quetelet, A. J. (1842). *A Treatise of Man*. Gainesville, Fla.: Scholars' Facsimiles and Reprints (1969).
- Rawson, R. W. (1839). An injury into the statistics of crime in England and Wales. *Journal of the Statistics Society of London* 2: 316-44.
- Reiss, A. J., Jr. (1985). *Policing a City's Central District: The Oakland Story*. National Institute of Justice, U. S. Department of Justice, Washington, D. C., March 1985.
- Reiss, A. J., Jr. (1986). Why are communities important in understanding crime? In A. J. Reiss Jr. and Mr. Tonry (eds.), *Communities and Crime* (1-33). Chicago, University of Chicago Press.
- Rengert, G. F. (1980). Theory and Practice in urban police responses. In D. E. Georges-Abeyies and K. D. Harries (eds.), *Crime: A spatial perspective* (47-57). New York, Columbia University Press.
- Rengert, G. F. (1981). Burglary in Philadelphia: An opportunity structure model. In P. J. Brantingham and P. L. Brantingham (eds.), *Environmental Criminology* (189-201). Beverly Hills and London, Sage.
- Sampson, R. J. (1986a). Crime in cities: The effects of formal and informal social control. In A. J. Reiss Jr. and M. Tonry (eds.) *Communities and Crime* (271-311). Chicago, University of Chicago Press.
- Sampson, R. J. (1986b). The effects of urbanization and neighborhood characteristics of criminal victimization. In R. M. Figlio, S. Hakim and G. F. Rengert (eds.) *Metropolitan crime patterns* (3-25). New York, Willow Tree.
- Sampson, R. J. (1987). Personal violence by strangers: An extension and test of the opportunity model of predatory victimization. *Journal of Criminal Law and Criminology* 78: 327-56.
- Scott, L., Crow, W. J., and Erikson, R. (1985). *Robbery as Robbers See It*. Dallas, Southland Corporation.
- Shaw, C. R. (1929). *Delinquency Areas*. Chicago, University of Chicago Press.
- Shaw, C. R., and McKay, H. D., (1931). *Social factors in juvenile delinquency*, volume 2 of *Report on the Causes of Crime*, National Commission on Law Observance and Enforcement, report no. 13, Washington, D. C., U.S. Government Printing Office.
- Shaw, C. R., and McKay, H. D., (1942). *Juvenile delinquency and urban areas* (revised edition 1969). Chicago, University of Chicago Press.
- Sherman, L. W., Gartin, P. R., and Buerger, M. E. (1989). Hot spots of predatory crime: Routine activities and the criminology of place. *Criminology* 27 (1): 27-56.

- Sherman, L. W., and Weisburd, D. (1987). *Policing the hotspots of crime*. Funded proposal, National Institute of Justice.
- Sherman, L. W., and Weisburd, D. (1989). *Policing the hotspots of crime: A redesign of the Kansas city preventive patrol experiment*. Washington, D. C., Crime Control Institute.
- Smith, S. J. (1986). *Crime, Space and Society*. Cambridge, Cambridge University Press.
- South, N. (1987). The security and surveillance of the environment. In J. Lowman, R. J. Menzies, and T. S. Palys (eds.), *Transcarceration: Essays in the Sociology of Social Control* (p. 139-52), Cambridge Studies in Criminology, London, Gower.
- Steffensmeier, D. (1989). On the causes of "white-collar" crime: An assessment of Hirschi and Gottfredson's claims. *Criminology* 27 (2): 345-58.
- Stoks, F. G. (1981). Assessing urban public space environments for danger of violent crime—Especially rape. Ph.D. Dissertation, University of Washington, Seattle, Wash.
- Sutherland, E. H. (1939). *Principles of Criminology*. Philadelphia, Lippincott.
- Sutherland, E. H. (1973). *On Analyzing Crime*. Chicago, University of Chicago Press.
- Sutherland, E. H., and Cressey, D. R. (1970). *Criminology*, 8th edition. Philadelphia, Lipincott.
- Taylor, R. B., and Gottfredson, S. D. (1986). Environmental design, crime and prevention: An examination of community dynamics. In A. J. Reiss and M. Tonry (eds.), *Communities and Crime* (387-417). Crime and Justice: An Annual Review of Research, volume 8. Chicago, University of Chicago Press.
- Taylor, R. B., Gottfredson, S. D. and S. Brower. (1981). *Informal social control in the residential urban environment*. Baltimore, Md., Center for Metropolitan Planning and Research.
- Taylor, R. B., and Gottfredson, S. D., and S. Brower (1984). Block crime and fear: Defensible space, local social ties and territorial functioning. *Journal of Research in Crime and Delinquency* 21: 303-31.
- Thrasher, F. M. (1927). *The Gang*. Chicago, University of Chicago Press.
- Webb, B. (1988). *Reducing shoplifting in a large central London store*. Paper presented at the 40th annual meeting, American Society of Criminology, Chicago.
- Wheeler, S., Weisburd, D., Waring, E. and Bode N. (1988). White Collar Crimes and Criminals. *American Criminal Law Review* 25 (3): 331-57.
- Wilson, J. Q., and Kelling, G. (1982). Broken windows: The police and neighborhood safety. *Atlantic* (March): 29-38.
- Wilson, J. Q., and Hernstein, R. J. (1985). *Crime and Human Nature*. New York. Simon and Schuster.
- Wolfgang, M. E., Figlio, R. M. and Sellin, Thorsten, (1972). *Delinquency in a Birth Cohort*. Chicago, University of Chicago.