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The Efficiency of Place-Based Policing

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Introduction

There is substantial evidence that police have the ability to be effective in combating crime at small geographic units, commonly termed "hot spots." A series of randomized field trials demonstrate that police efforts focused on hot spots can result in meaningful reductions in crime and disorder (see e.g. Braga & Bond, 2008; Braga, Weisburd, Waring, Mazerolle, Spelman, & Gajewski, 1999; Sherman & Weisburd, 1995; Weisburd & Green, 1995). Further evidence of the effectiveness of hot spots comes from a Campbell Collaboration systematic review conducted by Anthony Braga (2001, 2005, 2007). Braga found that seven of nine experimental or quasi-experimental evaluations of hot spots policing reported noteworthy crime or disorder reductions. This strong body of rigorous evaluations led the National Research Council Committee to Review Research on Police Policy and Practices (2004:35) to conclude:

> There has been increasing interest over the past two decades in police practices that target very specific types of crimes, criminals, and crime places. In particular, policing crime hot spots has become a common police strategy for reducing crime and disorder problems. While there is only preliminary evidence suggesting the effectiveness of targeting specific types of offenders, a strong body of evidence suggests that taking a focused geographic approach to crime problems can increase the effectiveness of policing (see also Weisburd & Eck, 2004).

Thus, a sizable body of rigorous empirical research demonstrates the *effectiveness* of police interventions that focus on crime hot spots. Much less discussion exists, however, on the *efficiency* of such an approach for the police. For example, if police interventions in one place just push crime to a neighboring community (i.e. spatial displacement), then a police focus on crime hot spots would not be very efficient. The police in this context would simply be chasing crime from place to place. Similarly, if crime hot spots jumped around the city randomly from year to year (i.e. there was no long term stability of crime at place), then police need not focus their efforts at these places because crime would naturally decline over time at crime hot spots.

In this chapter we argue that place based policing is not only effective but is also an efficient approach for the police. We present a growing body of evidence that suggests that police efforts to combat crime at small places represent an opportunity to increase the efficiency of police strategies to control crime and disorder. We begin by defining "place" and "place-based policing" in the next two sections. We then identify four key reasons why a place-based approach is efficient for policing. First, both cross-sectional and longitudinal research in multiple cities indicate a strong concentration of crime at place, which makes it more efficient for police to target specific high crime locations than to spread their resources across the landscape of a city. Second, crime is fairly stable over time at crime hot spots and evidences much greater stability than individual offending over time. Places are in this sense an efficient "target" for the police. Third, places stay in the same place, making them far easier for the police to track over time than offenders. Finally, research on crime displacement shows that critiques of place-based policing are incorrect in suggesting that a focus on hot spots is inefficient because crime will simply "move around the corner." Indeed, place-based interventions are more likely to lead to a diffusion of crime control benefits.

What is a "Place"?

It is important at the outset to note that our definition of place departs from traditional geographic-based approaches for policing. By place, we do not mean large geographic units such as neighborhoods or communities that have commonly been the focus of criminologists concerned with crime prevention (see Bursik & Webb, 1982; Sampson, Raudenbush, & Earls, 1997; Shaw & McKay, 1942 [1969]), or the beats and precincts that have been key to the organization of policing. Places in this context are specific locations within the larger social

environments of communities and neighborhoods (Eck & Weisburd, 1995). These very small "micro" units of analysis may be defined as buildings or addresses (see Green, 1996; Sherman, Gartin, & Buerger, 1989), as block faces or street segments (see Sherman & Weisburd, 1995; Taylor, 1997), or as clusters of addresses, block faces or street segments that have common crime problems (see Block, Dabdoub, & Fregly, 1995; Weisburd & Green, 1995).

Two illustrations of crime places are useful since they point to the different ways that place may be important in understanding police interventions. In the Minneapolis Hot Spots Patrol Experiment Sherman and Weisburd (1995) identified street segments or street blocks for increased patrol presence (see Figure 1). They used street blocks in part because they represented a unit of analysis that was easily identified by police and could provide a natural setting for police interventions. But scholars have as well, recognized the relevance of small areas such as street segments in organizing life in the city (Appleyard, 1981; Jacobs, 1961; Smith, Frazee, & Davison, 2000; Taylor, 1997). Taylor (1998), for example, argues that the visual closeness of block residents, interrelated role obligations, acceptance of certain common norms and behavior, common regularly recurring rhythms of activity, the physical boundaries of the street, and the historical evolution of the street segment make the street block a particularly useful unit for analysis of place (Hunter & Baumer, 1982; Taylor, Gottfredson, & Brower. 1984).

Figure 1 About Here

In the Jersey City Displacement and Diffusion Project Weisburd and colleagues (2006) also sought to identify a discrete place for police attention. But in this study the focus was on specific types of criminal markets. Such markets often spread across street segments in a larger area of criminal activity. Figure 2 illustrates the boundaries of a drug market identified for

intervention in Jersey City. Included in this market is a group of city blocks but, importantly, this geographic unit is still much smaller than the neighborhoods or police precincts that have often been the focus of police interventions and scientific study of crime. The Displacement Project and the Minneapolis experiment illustrate more generally the ways in which units of place might differ depending on the interests of the police and the underlying structure of crime problems.

Figure 2 About Here

What is Place-Based Policing?

What is meant by place-based policing? At its core is a concern with focusing in on places where crime is concentrated, and it begins with an assumption that there is something about a place that leads to crimes occurring there. In this sense, place-based policing is theoretically based on routine activities theory (Cohen & Felson, 1979; Felson, 1994), which identifies crime as a matter of the convergence of suitable targets (e.g., victims), an absence of capable guardians (e.g., police), and the presence of motivated or potential offenders. Of course, this all must occur in the context of a place or situation, and accordingly place-based policing recognizes that there is something about specific places that leads to the convergence of these elements (Brantingham & Brantingham, 1981 [1991], 1984). Importantly, place-based policing is not simply the application of police strategies to units of geography. Traditional policing in this sense can be seen as place-based, since police have routinely defined their units of operation in terms of large areas, such as police precincts and beats. As noted above, place here refers to a

much smaller level of geographic aggregation than has traditionally interested police executives and planners.

The strategies of place-based policing can be as simple as hot spots patrol, as was the case in the Minneapolis Hot Spots Policing Experiment (Sherman & Weisburd, 1995), where the police intervention involved placing more patrol resources at places where crime was concentrated. But place-based policing can also take a much more complex approach to the amelioration of crime problems. In the Jersey City Drug Market Analysis Project (Weisburd & Green, 1995), for example, a three-step program (including identifying and analyzing problems, developing tailored responses, and maintaining crime control gains) was used to reduce problems at drug hot spots. In the Jersey City Problem-Oriented Policing Project (Braga et al., 1999), a problem-oriented policing approach was taken in developing a specific strategy for each of the small areas defined as violent crime hot spots.

As this brief review makes clear, the exact tactics employed in place-based policing can vary, but they share a common focus on small units of geography that are high in criminal activity. We turn now to a wide body of empirical evidence suggesting the efficiency of a place-based approach to policing.

Place-Based Policing is Efficient Because Crime is Very Strongly Concentrated at Places

A key requirement for the efficiency of place-based policing is that crime is heavily concentrated in what some have termed "crime hot spots" (Sherman et al., 1989; Sherman & Weisburd, 1995; Weisburd & Green, 1995). Absent a concentration of crime at place there seems little reason to refocus crime prevention efforts. Indeed, if crime were spread randomly across a city, place-based policing would provide little benefit.

A number of studies, beginning in the late 1980s suggest that significant clustering of crime at place exists, regardless of the specific unit of analysis defined (see Brantingham & Brantingham, 1999; Crow & Bull, 1975; Pierce, Spaar, & Briggs, 1986; Roncek, 2000; Sherman et al., 1989; Weisburd & Green, 1994; Weisburd, Maher, & Sherman, 1992, Weisburd, Bushway, Lum, & Yang, 2004; Weisburd, Morris, & Groff, 2009). Perhaps the most influential of these was Sherman, Gartin and Buerger's (1989) analysis of emergency calls to street addresses over a single year. Sherman et al. found that only 3 ½ percent of the addresses in Minneapolis, Minneapolis produced 50 percent of all calls to the police. They regarded these results as so startling that they called for a new area of study which they termed the "criminology of place."

Other studies produced similar evidence of the concentration of crime in crime hot spots. Weisburd and Mazerolle (2000), for example, found that approximately 20 percent of all disorder crimes and 14 percent of crimes against persons were concentrated in just 56 drug crime hot spots in Jersey City, New Jersey, an area that comprised only 4.4 percent of street segments and intersections in the city. Similarly, Eck, Gersh, and Taylor (2000) found that the most active 10 percent of places (in terms of crime) in the Bronx and Baltimore accounted for approximately 32 percent of a combination of robberies, assaults, burglaries, grand larcenies and auto thefts.

A study conducted by Weisburd et al. (2004) not only confirms the concentration of crime, but also the stability of such concentrations across a long time span. Weisburd et al. examined street segments in the city of Seattle from 1989 through 2002. They found that 50 percent of crime incidents over the 14 year period occurred at only 4 ½ percent of the street segments. As illustrated by Figure 3, this concentration is very stable year to year. These data overall illustrate a kind of "law of concentration" for crime suggesting that crime is heavily

clustered in cities with fewer than five or ten percent of addresses, street segments, or small clusters of addresses and street segments accounting for a majority of crime in a city each year.

Figure 3 About Here

The crime prevention opportunities of this law of concentration are even clearer when focusing on specific types of crime. In another study in Seattle, Weisburd, Morris and Groff (2009) examine the concentration of crime incidents in which a juvenile is arrested. They found that only 86 street segments out of almost 30,000 account for 1/3 of all official juvenile arrest incidents over a 14 year period. While more research will have to be done to establish how much of such crime concentrations are due to concentrations of police patrol, this study suggests the extent to which police can increase efficiency by focusing on hot spots in a city.

Lawrence Sherman (1995) argues that such clustering of crime at places is even greater than the concentration of crime among individuals. Using his Minneapolis data and comparing these to the concentration of offending in the Philadelphia birth cohort study (see Wolfgang, Figlio, & Sellin, 1972), he notes that future crime is "six times more predictable by the address of the occurrence than by the identity of the offender" (1995:36-37). Sherman asks, “why aren’t we doing more about it? Why aren’t we thinking more about whereduni t, rather than just whodunit?”

Weisburd (2008:5) argues similarly regarding longitudinal data in Seattle. When using “targets” as a criterion, places were indeed found to be a more efficient focus than offenders. Using this approach, he found that on average about 1,500 street segments accounted for 50 percent of the crime each year over a 14 year period. During the same period about 6,108

offenders were responsible for 50 percent of the crime each year. Simply stated, the police would have to approach four times as many targets to identify the same level of overall crime when they focus on people as opposed to places.

Place-Based Policing is Efficient Because Crime is Stable at Places Across Time

The concentration of crime at place suggests significant crime prevention potential for such strategies as hot spots patrol (Sherman & Weisburd, 1995; Weisburd & Braga, 2006). However, concentration itself does not provide a solid empirical basis for refocusing crime prevention resources. For example, if "hot spots of crime" shift rapidly from place to place it makes little sense to focus crime control resources at such locations, because they would naturally become free of crime without any criminal justice intervention and hence police intervention would be inefficient (Spelman, 1995).

The available data suggest that the possibility of crime shifting rapidly has little empirical basis. Spelman (1995) for example, examined calls for service at schools, public housing projects, subway stations, and parks and playgrounds in Boston. He found evidence of a very high degree of stability of crime at the "worst" of these places over a three year period. Spelman concluded that it "makes sense for the people who live and work in high-risk locations, and the police officers and other government officials who serve them, to spend the time they need to identify, analyze and solve their recurring problems" (1995:131). Taylor (1999) also reported evidence of a high degree of stability of crime at place over time, examining crime and fear of crime at 90 street blocks in Baltimore, Maryland using a panel design with data collected in 1981 and 1994 (see also Taylor, 2001).

The most comprehensive examination of the stability of crime at place over time was conducted by Weisburd et al. (2004) in their study of crime incidents at street segments in the city of Seattle. Using group-based trajectory analysis (Nagin, 1999, 2005; Nagin & Land, 1993) they identified clusters of places with similar developmental trajectories, adopting an approach that has been used extensively to study patterns of change in offending and aggression as people age (see Nagin, 1999; Nagin & Tremblay, 1999).

Weisburd and colleagues (2004) identified 18 specific trajectory patterns in their data (see Figure 4). The most important finding in their study was that crime remained fairly stable at places over time. This can be contrasted with developmental studies of individual offending where there is often tremendous change across relatively short periods, especially for high rate offenders (Horney, Osgood, & Marshall, 1995; Nagin, 1999; Nagin & Tremblay, 1999). A comparison of a typical trajectory analysis of developmental patterns of youths across the life course (see Figure 5) with the results of the Seattle study emphasizes this point. Note the relative stability of the most chronic offending group in the Seattle data (trajectory group 17), as contrasted with the chronic offenders identified by Nagin (1999) in Figure 5.

Figure 4-5 About Here

What is clear is that hot spots of crime evidence a remarkable degree of stability across time. In contrast, there is perhaps no more established fact in criminology than the variability and instability of offending across the life course. A primary factor in this variability is the fact that most offenders age out of crime, often at a relatively young age (Blumstein, Cohen, Roth, & Visher, 1986; Gottfredson & Hirschi, 1990; Laub & Sampson, 2003; Tracy & Kempf-Leonard,

1996; Wolfgang, Thornberry, & Figlio, 1987). But there is also evidence of strong instability in criminal behavior for most offenders even when short time periods are observed (Bushway, Thornberry, & Krohn, 2003; Horney et al., 1995; Nagin, 1999).

What these data suggest is that crime prevention at places has the potential for long term impacts on crime and public safety more generally in cities. A model of "regression to the mean" at places would suggest that places get very "hot" and then naturally cool off. In this model there would be little benefit in efficiency by focusing on the "hottest spots" because they would become cooler even without police intervention. In some sense, this is the predominant model of individual offending, since we know that most people will age out of crime relatively quickly. In contrast hot spots of crime appear to remain hot over longer periods of time. In this sense, hot spots policing is likely to be more efficient than traditional policing tactics.

Place-Based Policing is Efficient Because Places Stay in the Same Place

Offenders (like people more generally) are a moving target in the sense that they rarely just stay in one place. U.S. Census Bureau (2009) data on geographic mobility show that over 35 million Americans changed residences in 2008 (about 12 percent of the population). Those who live in high crime areas, which are often disadvantaged areas as well, are even more likely to move. Nearly 23 percent of Americans below the poverty line moved in 2008. Studies have often noted the difficulty of tracking offenders for survey research (Wolfgang et al., 1987; Laub & Sampson, 2003), and it is a common experience of the police to look for an offender and find that he or she no longer lives at the last known address. For example, the National Center for Missing and Exploited Children estimates that 16 percent of sex offenders (over 100,000 in total)

are not compliant with registration requirements and cannot be located (Levenson, Letourneau, Armstrong, & Zgoba, Forthcoming).

In contrast, places are not moving targets in the important sense that, unlike offenders, they remain at the same physical place. The police will have no difficulty tracking a street block longitudinally; the place will not move. This is not an insignificant issue when considering the investment of police resources in crime prevention. A place also evidences relative stability over time in the nature of activities that occur there. For example, a residential street block is unlikely to shift to an industrial center in a short period of time. While nonresidential blocks and mixed use blocks show some change longitudinally in zoning, residential blocks typically remain residential over time (McMillan & McDonald, 1991). In their analysis of land use data from Seattle, Weisburd, Groff, and Yang (In progress) found little change over 14 years both in the percentage of street blocks with mixed land use and in the geographic location of these blocks.

Place-Based Policing is Efficient Because Crime Displacement is Usually Limited

As noted in the introduction, although there is growing evidence that police can have an impact on crime at the specific areas where they focus their efforts such approaches risk shifting crime or disorder to other places where programs are not in place. This phenomenon is usually termed displacement, and it has been a major reason for traditional skepticism about the overall crime prevention benefits and efficiency of place-based prevention efforts (Reppetto, 1976).

Based on assumptions about the large number of crime opportunities available in modern societies, and the highly motivated nature of offenders, crime prevention scholars have traditionally assumed that most of the crime control benefits of situational prevention strategies would be lost due to displacement. A series of reviews since the 1980s have led to general

agreement, however, that displacement of crime is seldom total and often inconsequential (Barr & Pease, 1990; Clarke, 1992; Eck, 1993; Gabor, 1990; Hesseling, 1994; Guerette & Bowers, Forthcoming; for an opposing view, see Teichman, 2005).

The strongest evidence against the assumption of immediate spatial displacement has come from recent studies of focused interventions at crime hot spots (see Braga, 2001, 2005, 2007). In the Jersey City Drug Market Analysis Experiment (Weisburd & Green, 1995), for example, displacement within two block areas around each hot spot was measured. No significant displacement of crime or disorder calls was found. These findings were replicated in a series of other hot spots experiments including the Jersey City Violent Crime Places Experiment (Braga et al., 1999), the Oakland SMART Project (Green, 1995), the Kansas City Gun Project (Sherman & Rogan, 1995) and the Lowell policing disorder at hot spots experiment (Braga & Bond, 2008). Only Hope (1994) reports direct displacement of crime as a result of a focused hot spots intervention, though this occurred only in the area immediate to the treated locations and was much smaller overall than the crime prevention effect.

Further challenge to the displacement hypothesis is found in recent studies that suggest a positive though unanticipated consequence of crime prevention at place. In these cases, investigators found improvement in areas close to but not targeted by crime prevention efforts (see Green, 1995; Weisburd & Green, 1995). Clarke and Weisburd (1994) argue that this phenomenon is general enough to deserve a standard term—"diffusion of crime control benefits." It has been described elsewhere by investigators as the free rider effect (Miethe, 1991), the bonus effect (Sherman, 1990), the halo effect (Scherdin, 1992), or the multiplier effect (Chaiken, Lawless, & Stevenson, 1974). In essence, diffusion is the reverse of displacement. It refers to the diffusion of crime control benefits to contexts that were not the primary focus of

crime prevention initiatives. Diffusion has been documented in crime prevention strategies as diverse as police crackdowns (Sherman, 1990; Weisburd & Green, 1995), book protection systems (Scherdin, 1992), and enforcement of civil regulations at nuisance locations (Green, 1995, 1996).

A recent controlled study of displacement and diffusion effects by Weisburd and colleagues (2006) explicitly examined spatial displacement and diffusion as primary outcomes during an intensive police crackdown in a prostitution hot spot and a drug hot spot in Jersey City, New Jersey. To examine displacement and diffusion effects, a wealth of data was collected in the intervention target areas and surrounding catchment areas, approximately two blocks surrounding each target area, including social observations, arrestee interviews, and ethnographic field observations.

Quantitative findings indicated that crime did not simply move around the corner in response to intensive police crime prevention efforts at places. Indeed, the study supported the position that the most likely outcome of such focused crime prevention efforts is a diffusion of crime control benefits to nearby areas. This is illustrated in Figure 8, which documents observed prostitution events in the target and displacement catchment areas during the period of the study. Here, as in other analyses conducted by Weisburd et al. (2006), crime did not go up in the catchment areas after there were strong crime prevention gains at the target site. The catchment areas followed a similar pattern to the target site, suggesting a diffusion of crime control benefits. The qualitative data revealed there were various barriers to offenders moving their activity elsewhere, including a hesitancy to move to other areas that were unfamiliar, uncomfortable, or considered rival turf.

Figure 6 About Here

In an extension of these findings, Taniguchi, Rengert, and McCord (Forthcoming) explore why targeting illegal drug markets may lead to a diffusion of crime control benefits. Applying the theory of "agglomeration economies" to Philadelphia they find that removing the largest and most profitable site from an illegal drug market will reduce the size of the overall market by making drug dealing in the surrounding area less lucrative. The logic here follows the economics of the legitimate retail sector where closing a major department store in a mall may negatively impact the profits of smaller surrounding stores.

Conclusions

We began this chapter with a brief review of the empirical research supporting a place-based approach to improve police effectiveness. While this research suggests the benefits of focusing police interventions on places, it is also necessary to consider whether such a focused approach is an efficient use of police resources. Our review suggests that it is for multiple reasons. First, crime is highly concentrated at places and such crime concentrations are greater than the concentration of crime among individuals. In this sense, place-based policing is efficient because the police can focus on a relatively small number of places and gain relatively larger crime prevention benefits. Importantly, crime is not only concentrated at place, there is also strong stability in crime hot spots over time. In contrast to chronic offenders who often age out of crime quickly, hot spots of crime seem to continue to be "hot" over long periods. In this context places are an efficient focus for the police, because the police do not risk wasting resources on targets that would evidence lower crime naturally over time. And crime hot spots

represent an easy to "find" focus for police. Unlike offenders who move from place to place and are difficult to track, in the most basic sense crime places stay in the same place. Finally, crime prevention at places does not simply lead to crime displacement. Indeed, there is strong evidence today that hot spots policing is more likely to lead to a diffusion of crime prevention benefits to areas nearby. This only strengthens the argument for the efficiency of place based policing.

Research accordingly suggests that it is time for police to shift from concentrating primarily on people to focusing more on places. While such a shift is largely an evolution in trends that have begun over the last few decades, it will nonetheless demand radical changes in data collection in policing, in the organization of police activities, and particularly in the overall world view of the police (see Weisburd, 2008). To maximize both effectiveness and efficiency, it is time to change the world view of police so that they recognize the key to crime prevention is in ameliorating crime at place.

Figures

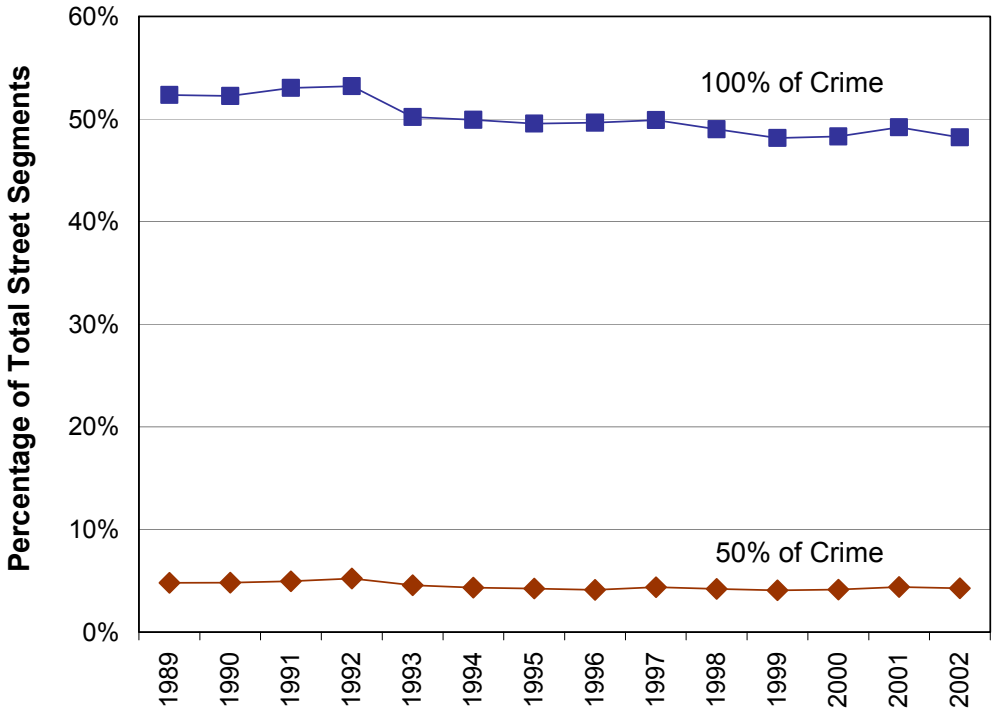
Figure 1: Example of a Hot Spot in the Minneapolis Hot Spots Experiment

Source: Weisburd (2008)

Figure 2: Drug Crime Target area in the Jersey City Displacement and Diffusion Study

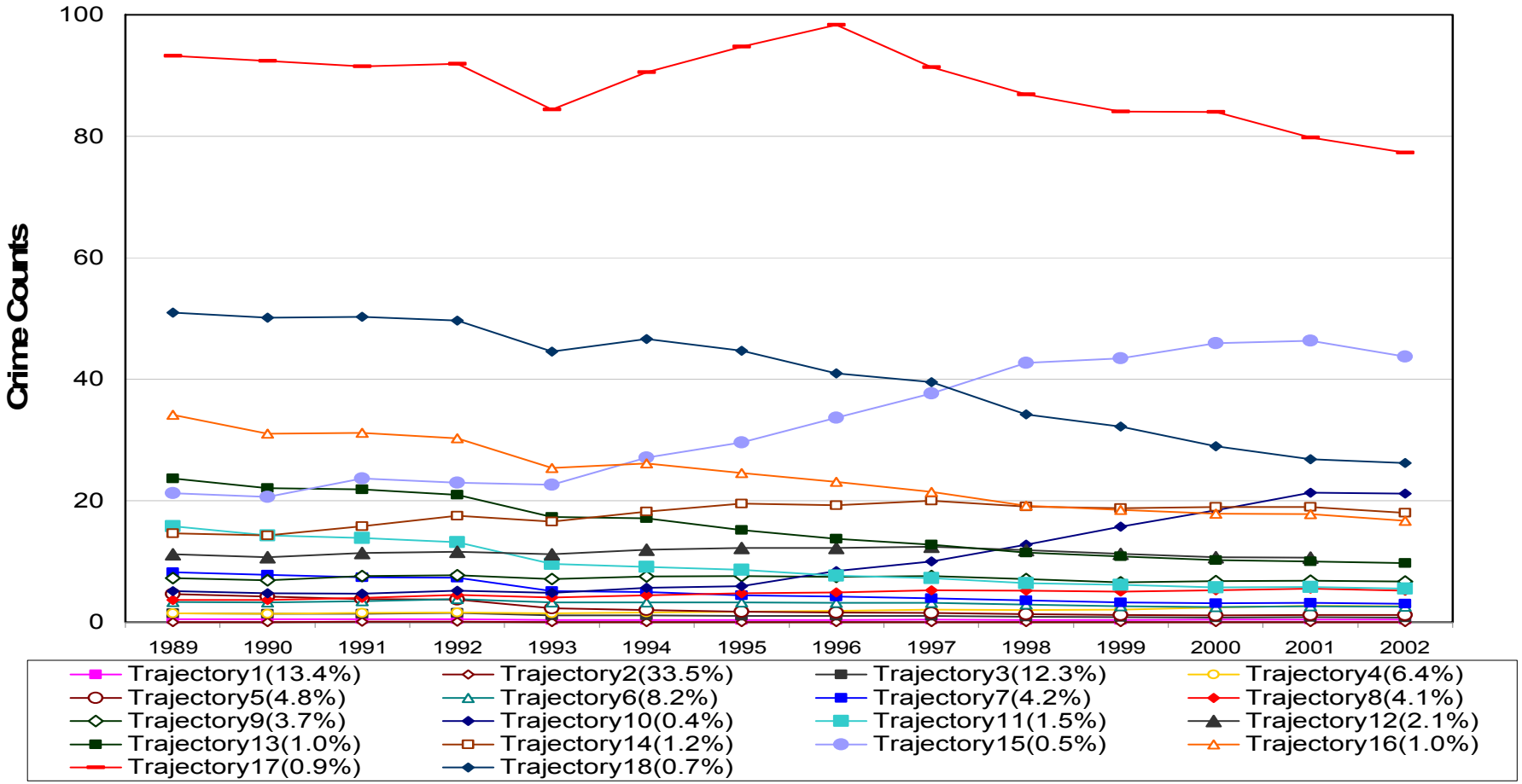
Source: Weisburd et al. (2006)

Figure 3: Percentage of Seattle Street Segments with 50% and 100% of Incident Reports from 1989 to 2002



Source: Weisburd et al. (2004)

Figure 4: 18 Trajectories of Crime Incidents in Seattle



Note: The percentages in parentheses represent the proportion of street segments that each trajectory accounts for in the city of Seattle.

Source: Weisburd et al. (2004)

Figure 5: Trajectories of Individual Offending

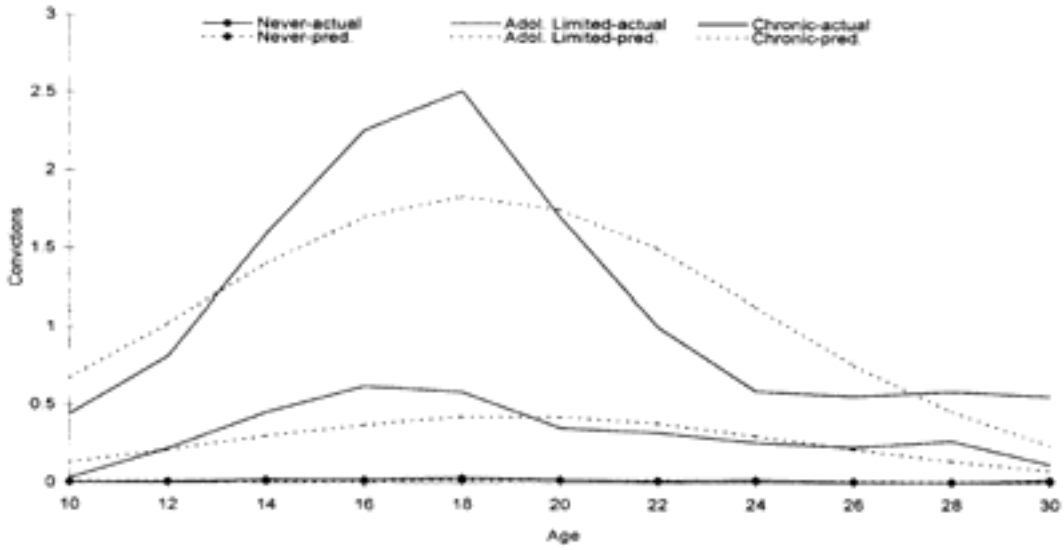
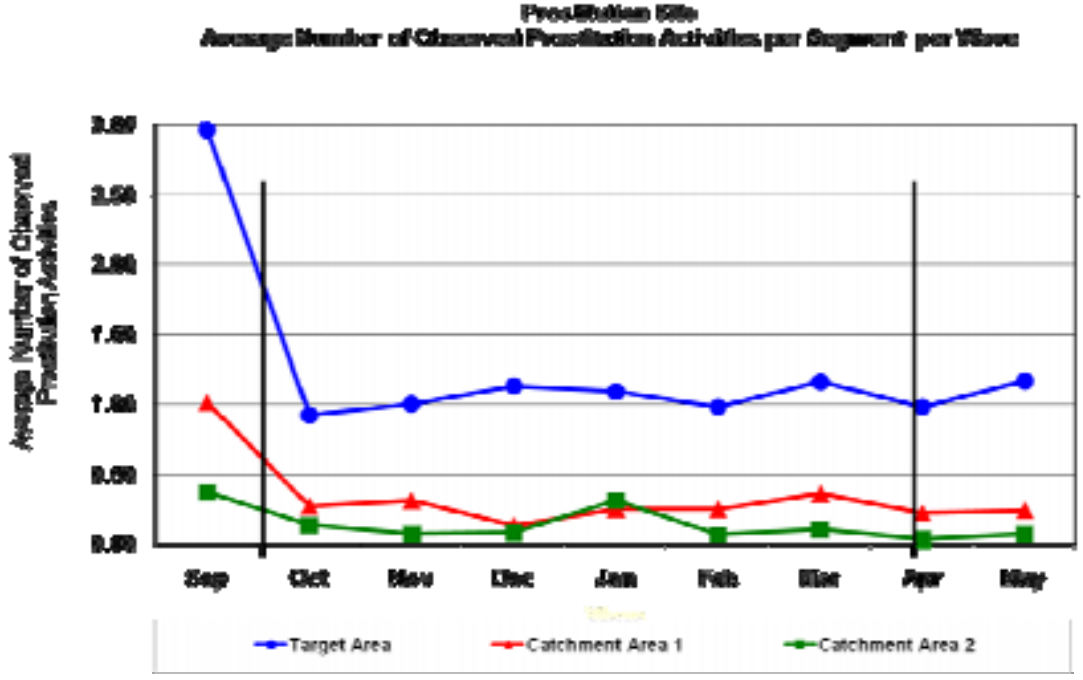


Figure 1. Trajectories of number of convictions (Cambridge sample). Adol. = adolescent; pred. = predicted.

Total N=411. Chronic: 7%, Adolescent Limited: 22% and Never Offend: 71%.

Source: Nagin (1999), p. 142

Figure 6: Observed Prostitution Events in the Target and Displacement Catchment Areas



Note: Black vertical lines indicate the beginning and end of the police intervention period

Source: Weisburd et al. (2006)

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