Satisfaction With Police in Violent Crime Hot Spots: Using Community Surveys as a Guide for Selecting Hot Spots Policing Tactics

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Abstract

This article argues that citizens' perceptions of police can aid in selecting appropriate hot spots policing tactics and models satisfaction with police as evidenced by respondents who live or work in violent crime hot spots. Survey data (*N* = 630) were collected by randomly sampling addresses within violent crime hot spots in Philadelphia, Pennsylvania, USA. The results reveal that being younger, or more educated, or perceiving higher procedural injustice, or higher social disorder, or being more fearful of crime, all link to lower satisfaction with police in violent crime hot spots. To maintain or improve public satisfaction with police services in hot spots, police departments should adopt tactics that are not only effective in reducing crime but also procedurally just, reduce fear of crime, and address social disorder problems.

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Recent policy discussions have suggested that transferring resources from corrections to policing could simultaneously reduce prison populations and crime (Durlauf & Nagin, 2011). Growing empirical support for hot spots policing has led some researchers to argue that it is one of the most effective strategies for police organizations to adopt (Braga, Papachristos, & Hureau, 2012; Mastrofski, Weisburd, & Braga, 2010; Telep & Weisburd, 2012; Weisburd & Braga, 2006), and it has become a widespread strategy among large police departments (Police Executive Research Forum, 2008). However, that literature provides relatively little guidance on which tactics police should actually implement within hot spots (Braga, 2007; Groff, Ratcliffe, Haberman, Sorg, & Joyce, 2013; Rosenbaum, 2006; Taylor, Koper, & Woods, 2011; Telep & Weisburd, 2012).

Although well-executed experimental evaluations can provide strong scientific guidance regarding the effectiveness of hot spots policing tactics, police executives often have to consider factors in addition to experimental results when making operational decisions (Crank, 2003; Crank & Langworthy, 1992). An alternative way of assessing which of the many hot spots policing tactics to implement is to consider which factors influence citizens' satisfaction with police performance in hot spots. Once the specific factors are revealed, police could tailor their responses to include not only tactics that have been shown to reduce crime empirically but that do so in a way that likely will improve citizens' perceptions of crime and police as well. Therefore, drawing from the literature on public perceptions of police, we use data specifically sampled from people living or working within violent crime hot spots to model citizens' satisfaction with police. We then discuss our findings within the context of the current hot spots policing evidence base to suggest which tactics might be effective for reducing crime and improving community perceptions of police within a hot spots policing framework.

Hot Spots Policing

A collection of theoretical (Brantingham & Brantingham, 1993; Cohen & Felson, 1979) and empirical research (Groff, Weisburd, & Yang, 2010; Sherman, Gartin, & Buerger, 1989) demonstrates crime concentrates in micro-geographic units, or hot spots. A complimentary body of literature demonstrates that police can reduce crime when focusing on crime hot spots

and suggests that hot spots policing is a promising policing strategy (Braga et al., 2012; Weisburd & Braga, 2006). Indeed, the effectiveness of hot spots policing has been demonstrated across numerous tactics (Braga et al., 2012): (a) directed patrol (McGarrell, Chermak, Weiss, & Wilson, 2001; Sherman & Weisburd, 1995; Telep, Mitchell, & Weisburd, 2012), (b) broken-windows policing (Weisburd & Green, 1995; Weisburd et al., 2006), (c) foot patrol (Ratcliffe, Taniguchi, Groff, & Wood, 2011), (d) problem-oriented policing (Braga & Bond, 2008; Braga et al., 1999; Taylor et al., 2011), and (e) offender-focused policing (Groff et al., 2013).

Scholars have pointed out that within these broad categories, there are a wide range of specific activities undertaken in hot spots (Telep & Weisburd, 2012). For example, Sherman and Weisburd (1995) noted that during the Minneapolis Hot Spots Policing Experiment, "some [officers] were reading newspapers or sunning themselves while sitting on the patrol car, while others were engaging citizens in friendly interaction in community-policing style" (p. 634; also see Koper, 1995). In Indianapolis, directed patrol in high crime police beats was found to be more effective when specific offenders were targeted (specific deterrence) versus simply generating traffic stops broadly (general deterrence; McGarrell et al., 2001). Similarly, a problem-solving evaluation in Lowell found that a range of tactics were undertaken during implementation. After coding activities into either situational crime prevention, social service oriented actions, or order-maintenance enforcement, a mediation analysis demonstrated that situational crime prevention tactics were more effective than social service or order-maintenance tactics (Braga & Bond, 2008). Therefore, despite a mounting evidence base, the literature supporting hot spots policing still begs the question, "What should police be doing at crime hot spots?" (see also Braga, 2007; Taylor et al., 2011; Telep & Weisburd, 2012, p. 3).

Selecting Hot Spots Policing Tactics

One approach to addressing this conundrum is to evaluate the effectiveness of hot spots policing tactics head-to-head (Groff et al., 2013; Taylor et al., 2011). These evaluations are critical for further developing an evidence base of effective police practices (Sherman, 1998); however, policing is complex and police executives consider factors other than academic research when making operational decisions. In short, police commanders make decisions in a politically conscious, media-scrutinized, resource-deprived, dynamic environment. External actors are particularly important for police executive decision making. Politicians, community organizations, block captains, and motivated citizens can place pressure and demands on police departments and influence police operations (Crank, 2003; Crank & Langworthy, 1992; Spelman, 1988).

As evidenced by the professionalization and community-policing eras (Bayley, 1994; Fogelson, 1977), the public's perception of the police is particularly important. The public has granted police officers a monopoly on the ability to use coercive force (Klockars, 1985). Concomitant with such authority is the higher standard to which police behavior is held by the public. Furthermore, citizens do not just receive police services but also pay for them. As consumers, citizens should be satisfied with the police services they receive. Finally, when the public views the police negatively, they may be unwilling to assist them in crime control (Sunshine & Tyler, 2003; Taylor, 2006). This is important for hot spots policing because a major criticism is the negative impact it may have on citizens' perceptions of police (Kochel, 2011; Rosenbaum, 2006; Telep et al., 2012), and citizens' perceptions of police are influenced by more than just crime and disorder levels (Braga & Weisburd, 2010; Tyler, 2004). Thus, the implementation of innovative policing tactics requires a consideration of numerous performance measures (Braga et al., 1999; Spelman, 1988). The present analysis examines which factors predict the public's satisfaction with police using survey data from a sample of violent crime hot spot residences and businesses to provide additional information for police organizations to consider as they decide which hot spots policing tactics to adopt.

Predictors of Satisfaction With Police and Their Relevance for Hot Spots Policing Tactics

Below we use the extant community survey literature on citizens' satisfaction with police to guide our selection of variables for modeling citizens living or working in hot spots' satisfaction with police. In addition, we discuss why the relationship between each construct and citizens' satisfaction with police is important for selecting hot spots policing tactics if police organizations want to not only reduce crime and disorder but also improve police–community perceptions and relations.[1]

Perceptions of Crime

Residents perceiving higher levels of crime have been found to be less satisfied with police (Reisig & Parks, 2000; Weitzer & Tuch, 2005). This relationship is likely explained by the fact that residents attribute perceived high crime levels to their police department's failure to control crime effectively. If this relationship holds in samples of respondents from crime hot spots, then it is likely that citizens will perceive their local police department positively as long as they implement responses that reduce crime within hot spots. It follows that if residents' perceptions of crime are the *only* important predictor

of their satisfaction, then police may implement virtually any lawful tactic that reduces crime. This scenario would be ideal for police organizations because hot spots policing tactics such as directed patrol (McGarrell et al., 2001; Sherman & Rogan, 1995; Sherman & Weisburd, 1995), cops on corners (Lawton, Taylor, & Luongo, 2005), broken-windows policing (Weisburd et al., 2006), or foot patrol (Ratcliffe et al., 2011) will likely be easier to implement than third-party policing (Mazerolle, Price, & Roehl, 2000), problem-oriented policing (Braga & Bond, 2008; Braga et al., 2012; Braga et al., 1999; Mazerolle, Ready, Terrill, & Waring, 2000; Taylor et al., 2011), or even, an offender-focused approach (Groff et al., 2013).

Perceptions of Disorder

Residents perceiving higher disorder have also been shown to be less satisfied with police (Dai & Johnson, 2009; Reisig & Parks, 2000). Again, this relationship can likely be attributed to citizens' beliefs that their police department's ineffectiveness allows disorder problems to flourish (Hunter, 1978, as cited by Taylor, 2001). If disorder links to satisfaction with police in hot spots, then police organizations seeking to improve community perceptions will have to consider tactics that can address disorder. The bifurcated definition and operationalization of disorder as including a physical and social component may allow the selection of hot spots policing tactics to be more nuanced. Indicators of social disorder might include behaviors such as panhandling, open-air drug dealing, or rowdy teenagers congregating. In other words, social disorder typically involves people engaged in "minor" illegal behavior. In contrast, physical disorder may include the presence of abandoned buildings, abandoned cars, graffiti, litter, and drug or sex act paraphernalia (Taylor, 2001; Wilson & Kelling, 1982).

It follows that increased police presence (Lawton et al., 2005; McGarrell et al., 2001; Ratcliffe et al., 2011; Sherman & Rogan, 1995; Sherman & Weisburd, 1995) or even broken-windows policing (Sousa & Kelling, 2006; Weisburd et al., 2006; Wilson & Kelling, 1982) that uses pedestrian and/or automobile stops or increased arrests, may be hot spots policing tactics for effectively reducing social disorder (see Weisburd & Green, 1995, for a problem-oriented hot spots approach that relied on increased arrest to target drug hot spots). Similarly, third-party policing and problem-oriented policing have been shown to be effective for reducing social disorder, especially drug dealing (Braga & Bond, 2008; Braga et al., 1999; Eck & Wartell, 1998; Hope, 1994; Mazerolle, Price, et al., 2000), but the difficulty of implementing these tactics likely makes them less attractive to police commanders than more traditional ones, all other considerations being equal.

However, indicators of physical disorder are not always considered police problems, and increasing police presence, pedestrian/automobile stops, or arrests—even under the guise of broken-windows policing (Lawton et al., 2005; McGarrell et al., 2001; Ratcliffe et al., 2011; Sherman & Rogan, 1995; Sherman & Weisburd, 1995)—will likely do little to alleviate physical disorder problems (i.e., abandoned automobiles/buildings, litter, graffiti, and so forth). If citizens within hot spots perceiving more physical disorder are less satisfied with police, then any hot spots policing tactic that fails to address physical disorder will probably fail to improve the community's satisfaction with police; even if it has an impact on actual crime levels. Alternatively, problem-oriented or third-party policing may be more worthwhile hot spots policing tactics for police to consider as they are designed to focus on a wider range of problems (Buerger & Green Mazerolle, 1998; Goldstein, 1979, 1990); however, the evidence to suggest that these tactics affect community perceptions of disorder is scant (see Braga & Bond, 2009). In sum, knowing whether physical or social disorder influences citizens living or working within hot spots' satisfaction with police can help commanders develop more nuanced hot spots policing tactics to not only reduce official crime levels but also improve citizens' perceptions of police.

Fear of Crime

Fear of crime—"the emotional response to possible violent crime and physical harm"—is separate from perceptions of crime or disorder (Covington & Taylor, 1991, p. 231; Taylor, 2001). Reducing fear of crime is particularly important because being more fearful of crime can negatively affect the psychology and behavior of residents (Miethe, 1995). More fearful community residents also report less satisfaction with police (Dai & Johnson, 2009; Reisig & Parks, 2000; Weitzer & Tuch, 2005). If fear of crime links to satisfaction with police in a sample of respondents solely from hot spots, then hot spots policing tactics should include mechanisms for improving citizens' fear of crime to also have an impact on community satisfaction with police.

While broken-windows style/aggressive enforcement tactics may be effective at reducing crime (Weisburd & Green, 1995; Weisburd et al., 2006), the evidence is mixed with regard to fear of crime. One broken-windows hot spots policing evaluation found that hot spot respondents' fear of crime actually increased after the Weisburd et al. (2006) initiative (Hinkle & Weisburd, 2008);[2] but another study did not find an increase in hot spot respondents' fear of crime after the initiative even though the authors note that the evaluation's external validity is questionable (Weisburd, Hinkle, Famega, & Ready, 2011, p. 316). In Kansas City, directed patrol focused on reducing gun

violence in a high crime police beat was found to reduce fear of crime (Shaw, 1995); however, the statistical validity of that finding has been questioned (Hinkle & Weisburd, 2008). The impact of problem-oriented policing on fear of crime is also unclear. One suburban case study of problem solving in a park found community members' fear of crime decreased after the initiative (Baker & Wolfer, 2003), although experimental evaluations in urban study sites have not found statistically significant changes in fear of crime (Braga & Bond, 2009; Ratcliffe, Groff, Sorg, & Haberman, 2013).

Although the evaluations were not specifically focused on micro-level crime hot spots, we should note that many community-oriented policing evaluations have found reductions in fear of crime (Weisburd & Eck, 2004, provide a useful review). For example, foot patrol was shown to improve feelings of safety but not reduce crime (Kelling, 1981). Similarly, community-oriented tactics that increase police–community contact (i.e., door-to-door interviews or community sub-stations) have also been shown to reduce citizens' fear of crime (Brown & Wycoff, 1987; Pate & Skogan, 1985; Uchida, Forst, & Annan, 1992). Results from Britain's National Reassurance Policing Programme, a combination of increased presence and a community co-production model of problem solving, also showed that respondents' fear of crime improved (Quiton & Tuffin, 2007). Overall, while the research literature is mixed, knowing that fear of crime links to residents' satisfaction with police in hot spots is important if police departments hope to improve the public's perceptions of police through hot spots policing; especially, as fear of crime is not a traditional police performance measure and not all hot spots policing tactics may address it satisfactorily.

Procedural Justice

Additional insights for selecting hot spots policing tactics may be gleaned if procedural justice links to hot spots respondents' satisfaction with police. In short, procedural justice/injustice relates to the degree to which authority figures carrying out official activities treat citizens fairly and justly (Tyler, 2003, 2004). Regardless of the level of crime in an area, it is reasonable to assume that all citizens want to see the police treat "good" and "bad" citizens with dignity and respect (Braga & Weisburd, 2010). Therefore, it is assumed that respondents will be less satisfied with police when they perceive the police to act in a dishonest, unfair, biased, or abusive fashion.

Citizens' perceptions of procedural justice are particularly relevant for public acceptance of hot spots policing. Citizens who perceive the police as procedurally just actors are more likely to view the police as legitimate and in return, more likely to comply with the law or co-operate with police

(Sunshine & Tyler, 2003; Tyler, 2003). Therefore, if procedural justice links to satisfaction with police among hot spot respondents, then police organizations can not only improve citizens' satisfaction but also, at least in theory, make strides toward long-term crime reduction by implementing procedurally just hot spots policing tactics.

To date, there is little research that examines how various hot spots policing tactics affect procedural justice. Nonetheless, it is reasonable to assume that some tactics are more likely to negatively affect procedural justice than others. For example, a broken-windows approach that emphasizes increased pedestrian/vehicle stops and/or arrests for minor offenses could be perceived as biased, unfair, or abusive (Green, 1999). Empirical evidence from one study indicates that broken-windows policing did not negatively affect citizens' perceptions of police legitimacy, the outcome of procedural justice (Tyler, 2003) in crime hot spots (Weisburd et al., 2011). Nonetheless, the potential for aggressive enforcement tactics in hot spots to be perceived as procedurally unjust and damage police–community relations should not be ignored (Rosenbaum, 2006). Shaw (1995) found that residents generally supported increased police presence during a directed patrol initiative; although, Braga and Weisburd (2010) pointed out that Shaw's analysis does not examine the attitudes of those who were stopped or of their family members (see also Rosenbaum, 2006). Finally, Ratcliffe et al. (2013) found that citizens' perceptions of procedural justice did not change after foot patrol, problem-oriented policing, or an offender-focused tactic were implemented separately during a hot spots policing evaluation. Regardless of crime control benefits, if procedural justice links to hot spot citizens' satisfaction with police, then police departments seeking to improve police–community relations would be remiss to simply reduce crime by any means necessary and ignore the possibility of using more procedurally just tactics.

The Present Study

To this point, we have argued that police executives are concerned with changes in official measures of crime and disorder as well as citizens' perceptions. Furthermore, we have suggested that citizens' perceptions of police, particularly satisfaction with police, are related to more than just whether crime goes up or down. We then extended our argument to suggest that if police executives want to increase citizens' satisfaction with their organizations, then they need to understand which factors likely predict residents' satisfaction with police and implement tactics that are effective at reducing crime *and* sensitive to each predictor. Furthermore, because the literature to date cannot definitively state which hot spots policing tactics police

executives should implement compared with others, considering tactics that are sensitive to the predictors of citizens' satisfaction with police provides them with important additional criteria to use as they decide which hot spots policing tactics they should adopt.

Unfortunately, past research on citizens' satisfaction with police has sampled across entire cities, but to advance policing in an evidence-based fashion (Sherman, 1998), police executives require empirical research at the unit of analysis that is of most interest to them (Police Executive Research Forum, 2008). If police are going to focus primarily on hot spots, then it is critical to specifically examine the perceptions of people who frequent crime hot spots. The present study contributes to the literature by examining which factors influence citizens' satisfaction with police using a sample of citizens solely from violent crime hot spots. By specifically drawing our sample from hot spots, our results can be used as additional evidence to inform one of the most serious voids in the hot spots policing literature to date—which hot spots policing tactics should police departments adopt to address high crime places (Telep & Weisburd, 2012)?

Data and Method

Study Location

The data used in the present study were collected in Philadelphia, Pennsylvania, USA. With roughly 1.5 million residents, Philadelphia is the fifth largest city in the United States. The Philadelphia Police Department's (approximately) 6,600 sworn officers and 800 civilian employees make it the fourth largest police department in the country. The data described below were collected during the summer of 2010. During 2010, Philadelphia experienced 18,535 violent crimes for a rate of roughly 1,189 violent crimes per 100,000 residents compared with the 2010 national violent crime rate of 403.6 violent crimes per 100,000 inhabitants (Federal Bureau of Investigation, 2010).

Sampling Strategy

The survey data used in the present analysis were collected as a component of an experimental evaluation of foot patrol, problem solving, and offender-focused policing in violent crime hot spots. Deployment areas were identified using hierarchical nearest neighbor clustering and a local indicator of spatial association test on violent crime counts within the set of Thiessen polygons centered on street intersections in Philadelphia.[3] Based on these crime hot

spots and organizational knowledge, police commanders from the Philadelphia Police Department and Temple University researchers drew 81 similarly sized potential target areas in a geographical information system (GIS), 27 for each of the three treatment types. From the 27 areas originally designated for each of the three different treatment types, 7 areas were randomly selected to be control areas and the remaining 20 areas became treatment areas for that particular hot spots policing tactic. The final 81 hot spots were small, containing an average of 3 miles of streets and 23.5 intersections. In 2010, the 81 hot spots accounted for about 2.5% (3.57 square miles) of the land area but roughly 19% of violent street felonies (2,411 out of 12,519; see Groff et al., 2013, for further details).

After the 81 areas were designated as either a treatment or control area, a cluster-based random sample of addresses was then selected for each of the four area types (foot patrol, problem solving, offender-focused, and control) using a file representing every taxable property known to the City of Philadelphia's Department of Revenue as a sampling frame.[4] This sampling strategy was used to be able to make inferences about each of the three treatment types relative to the control areas for the evaluative component of the Philadelphia Policing Strategies Experiment (Groff et al., 2013; Ratcliffe et al., 2013). The sample size for each area type was determined using the simple standard error equation for a random sampling procedure. The population was the total number of addresses within all the areas for each treatment type and the confidence level and confidence interval were set at 95% and 5%, respectively. After the sample size calculation was complete, the number of addresses sent a survey was determined based on the sample size calculation and an expected 20% response rate (Temple University Institute for Survey Research, personal communication, June, 2009). Overall, 1,860 foot patrol area surveys, 1,830 problem-solving areas surveys, 1,830 offender-focused area surveys, and 1,855 control area surveys were mailed to the sampled addresses. For the present analysis, the samples for each tactic's hot spot areas were aggregated to simply represent the perceptions of citizens living or working within violent crime hot spots in the City of Philadelphia.

Data

A total of 630 surveys were returned. The breakdown across treatment and control areas is as follows: 160 foot patrol area surveys, 152 problem-solving area surveys, 161 offender-focused area surveys, and 157 control area surveys; however, because these represent pre-implementation data, we treat the 630 respondents as a single sample of citizens from Philadelphia violent crime hot spots. The response rate for the sample is roughly 9%. A

low-response rate was anticipated as low income, urban populations generally have lower response rates (Weiss & Bailar, 2002).[5] Unfortunately, because of the size of our sample, our research funds (and then some) for the survey part of the experiment were exhausted by one mailing for the pre- and post-treatment waves (post-treatment surveys are not used in this study), so we were unable to potentially improve our response rate by conducting in-person interviews and sending pre-survey notification letters, reminder post cards, or follow-up mailings (Dillman, 1991; Weiss & Bailar, 2002). We evaluate non-response bias further below after explaining our handling of missing data.

A total of 223 surveys contain missing data on at least 1 of the 31 questions used to create the variables described below. The missing data on individual items ranges from 0.6% to 7% with a mean of 4%. The percentage of missing data for the variables used in the analysis rather than individual questions ranged from 0.6% to 15% with an average of 7%.[6] To deal with item non-response, we use the chained equations imputation approach in the Multiple Imputation (MI) module of Stata 12. The MI module allows the user to impute missing values for a user-defined number of new (imputed) datasets (M). Data analysis is then carried out on each imputed dataset, and the results are pooled according to Rubin's (1987) rules. Because standard error estimates are adjusted for the variability within and across imputation datasets, significance tests are unbiased. This property makes MI superior to other methods for handling missing data (i.e., list-wise deletion or single imputation methods; Allison, 2001). Although 3 to 5 imputations are generally considered sufficient (Rubin, 1987), we err on the side of caution and use 20 imputations ($M = 20$) because we have the computing power available (StataCorp, 2011). Our chained equations imputation model was estimated using all analysis variables, including the dependent variable, to maintain the relationships among all variables (Allison, 2001).[7]

After imputation, non-response bias was assessed. Non-response bias occurs when survey respondents differ from non-respondents on key variables (Rogelberg & Luong, 1998). It is important to note that a low response rate does not automatically translate into non-response bias (Groves, 2006; Merkle, 2008; Rogelberg & Luong, 1998), and researchers must always check for signs of non-response bias (Groves, 2006; Merkle, 2008; Rogelberg & Luong, 1998). Therefore, we use the archival approach for assessing non-response bias by comparing the demographic characteristics of our sample with the demographic characteristics of our hot spot areas using the 2010 U.S. Census and American Community Survey 5 year estimates[8] (Groves, 2006; Rogelberg et al., 2003; Rogelberg & Luong, 1998).[9] Because official data sources rarely have data on a study's variables of interest, the archival

Table I. Archival Non-Response Bias Test.

	Hot spot areas (%)	Sample (%)
% male[1]	47	33
% non-White[1]	93	70
Age[1]		
% 18-29[a]	18	10
% 30-54	32	48
% 55+	19	42
% more than high school[2]	60	62

Source. [1]2010 U.S. Census; [2]2010 American Community Survey Data.
Note. Hot spot area values were derived by aggregating 2010 U.S. Census and 2010 American Community Survey Data to hot spot areas using geographic proportionality of overlap between census tracts and hot spot areas. See Note 5 for further details.
[a]Census data are only available for ages 20 to 29 years old. Sample values are pooled across 20 imputations.

approach is typically limited to only demographic measures (Gannon, Nothern, & Carroll, 1971; Rogelberg et al., 2003). Table 1 demonstrates that the demographics of our sample roughly match the population's demographics from the 2010 U.S. Census and American Community Survey, but we note that our sample over-represents White and older (55 years and older) citizens.

Measures

All the measures in the present analysis are at the individual respondent level. A series of answers to specific questions and additive scale variables are used in the analysis.[10] The individual survey items for each scale variable are displayed in Table 2. The dependent variable, s*atisfaction with police performance*, was operationalized using an additive scale asking respondents to rate the police department's effectiveness on six items describing police performance measures using a five-item Likert-type scale (ranging from *very poor* to *very good*; Cronbach's α = .93). Higher scores on the satisfaction with police performance index indicate greater levels of satisfaction with police. Respondents' *perception of crime* in the neighborhood was measured by adding the scores on six questions covering serious violent and property crime using a five-item Likert-type scale (ranging from *not a problem* to *big problem*; Cronbach's α = .92), where higher scores indicate that a respondent views crime as more problematic. *Physical disorder* was operationalized by summing the scores of respondents' answers to how much of a problem were four

Table 2. Survey Items for Constructs.

Satisfaction with police (Cronbach's α = .93)[a]

How good . . .

. . . are the police doing in dealing with problems that really concern people in the neighborhood

. . . a job are the police doing keeping order on the streets/sidewalks

. . . a job are the police doing in reducing violent crime

. . . a job are the police doing in reducing non-violent crime

. . . a job are the police doing solving crimes once they occur

. . . a job are the police doing preventing crime in your neighborhood

Perception of crime (Cronbach's α = .92)[b]

How much of a problem is . . .

. . . people being robbed, beaten-up, or mugged on the streets

. . . people being killed

. . . people being the victims of violent crime

. . . shootings and violence by gangs

. . . people breaking into other people's homes

. . . people breaking into or stealing cars

Perception of physical disorder (Cronbach's α = .77)[b]

How much of a problem is . . .

. . . abandoned cars in the streets/alleys

. . . abandoned houses or other empty buildings in the area

. . . trash, junk, or litter on the streets, sidewalks, or in vacant lots

. . . the vandalism of homes, buildings, or properties, such as breaking windows or graffiti

Perception of social disorder (Cronbach's α = .80)[b]

How much of a problem is . . .

. . . excessive noise, such as barking dogs, loud parties, and loud car stereos

. . . homeless people or vagrants

. . . teenagers hanging out or causing disturbances

. . . drug dealing on the street

. . . drug dealing from houses or other buildings

Fear of crime (Cronbach's α = .71)[c]

I feel safe walking the streets of my neighborhood during the day

I feel safe walking the streets of my neighborhood after dark

Procedural justice (Cronbach's α = .83)[c]

The police in this city are usually courteous

The police are fair when dealing with people

Philadelphia police officers are usually honest

Most police officers in my neighborhood use only the amount of force necessary to accomplish their tasks

[a]Five-item Likert-type scale, ranging from *very poor* to *very good*.
[b]Five-item Likert-type scale, ranging from *not a problem* to *big problem*.
[c]Five-item Likert-type scale, ranging from *strongly disagree* to *strongly agree*.

commonly used indicators of physical disorder: abandoned cars, abandoned houses/buildings, litter/trash, and vandalism such as graffiti (five-item Likert scale, ranging from *not a problem* to *big problem*; Cronbach's α = .77). The s*ocial disorder* additive scale was measured using questions asking about five different types of social disorder: loud noise, homeless people, crowds of rowdy teenagers, and drug dealing on the street or inside (five-item Likert-type scale, ranging from "not a problem" to "big problem"; Cronbach's α = .80). For the physical and social disorder indices, higher scores indicate that respondents perceive physical and social disorder to be more problematic. Respondents' *fear of crime* was measured by adding the responses from two questions regarding respondents' fear of walking in their neighborhood during the day and night (five-item Likert-type scale, ranging from *strongly disagree* to *strongly agree*; Cronbach's α = .71), with higher scores indicating that a respondent is more fearful of crime. *Procedural justice* was measured using four questions describing officers engaging in rude, unfair, dishonest, or abusive behavior during encounters with citizens (five-item Likert-type scale, ranging from *strongly disagree* to *strongly agree*; Cronbach's α = .83). The procedural justice index was coded so that higher scores indicate that respondents perceive that the police are *more likely* to treat citizens rudely, unfairly, dishonestly, and use excessive force during police–citizen encounters (i.e., procedural injustice).

Demographic variables include gender, race, age, and education. Gender was measured using a dummy variable (1 = male, 0 = female). Race was also measured using a dummy variable (1 = non-White, 0 = White). Age was measured using a seven-item scale ranging from respondents below 18 years old to respondents 55 years old and above. For education, respondents were asked to report their highest level of education and we use a dummy variable distinguishing respondents with more than a high school education from those with a high school education or less (1 = more than high school, 0 = high school or less). The sample is predominantly non-White (70%) and female (67%), with persons above the age of 55 years (42%) and reporting more than a high school education (62%) being more common in the sample.[11] Descriptive statistics for all measures can be found in Table 3.

Results

Results from our ordinary least squares (OLS) regression models can be found in Table 4. We present the models using list-wise deletion and MI (*M* = 20) to demonstrate that the results are robust across missing data techniques but we only discuss the MI results. We note that variance inflation factors (VIFs) from the models are well below the commonly used threshold for assessing multicollinearity (VIFs from all models ≤ 2.60; see Berk, 2004). In

Table 3. Descriptive Statistics.

	Complete data	MIN	MAX	*M*	MI *M*	*SD*	Cronbach's α
Dependent variable							
Satisfaction with police	569	6	30	17.09	17.09	5.35	.93
Independent variables							
Male dummy	610	0	1	0.33	0.33	0.47	—
Minority dummy	607	0	1	0.70	0.70	0.46	—
Age	617	1	7	5.69	5.69	1.4	—
More than HS dummy	626	0	1	0.62	0.63	0.49	—
Perceptions of crime	559	6	30	18.86	18.85	7.62	.92
Perceptions of physical disorder	570	4	20	12.41	12.36	4.33	.77
Perceptions of social disorder	538	5	25	16.72	16.78	5.37	.80
Fear of crime	602	2	10	6.58	6.58	2.19	.71
Procedural justice	577	4	20	12.12	12.13	3.55	.83

Note. All descriptive statistics are computed using list-wise deletion except for the MI mean which is computed and pooled across 20 imputations (*n* = 630). MIN = minimum; MAX = maximum; MI = multiple imputation; HS = high school.

our first model, we enter only the demographic predictors. The model shows, net of the other predictors in the model, that minority respondents from hot spots are less satisfied with the police than White respondents ($b = -2.29$; $p < .001$). Prior research suggests that race has been an important predictor of citizens' perceptions of police (Brown & Benedict, 2002; Decker, 1981). Consistent with past research, the demographic model also demonstrates that older respondents are more satisfied with police ($b = 0.75$; $p < .001$). Finally, we find that respondents with more education are also less satisfied with police ($b = -0.92$; $p < .05$).

In the full model, we add the predictors we believe to be informative for selecting hot spots policing tactics. While younger ($b = 0.36$; $p < .01$) and more educated respondents ($b = -0.99$; $p < .05$) remain less satisfied with police, there is no longer a difference in satisfaction between Whites and non-Whites ($b = -0.004$; $p > .05$). The fact that race no longer significantly predicts satisfaction with police is somewhat unexpected (Benedict, Brown, & Bower, 2000; Decker, 1981), but recent research suggests that the relationship between race and community perceptions may be more complex than previously thought and is typically mediated once respondents' perceptions of their neighborhood or procedural justice are modeled (Cao, Frank, & Cullen, 1996; Frank, Brandl, Cullen, & Stichman, 1996; Kusow, Wilson, & Martin, 1997; Smith, 1986; Tyler, 2005).

Unexpectedly, the full model also shows that respondents' perceptions of crime, even though the sample was drawn from some of the most violent

Table 4. OLS Results: Satisfaction With Police in Violent Crime Hot Spots.

	List-wise deletion						Multiple imputation (M = 20)					
	b	SE	t-ratio	b	SE	t-ratio	b	SE	t-ratio	b	SE	t-ratio
Constant	14.45	1.05	13.76***	31.66	1.30	24.37***	14.75	1.04	14.23***	31.96	1.15	27.76***
Male dummy	0.77	0.48	1.62	0.12	0.41	0.26	0.71	0.46	1.53	−0.23	0.37	−0.62
Minority dummy	−2.22	0.48	−4.62***	0.02	0.42	0.04	−2.29	0.47	−4.83***	−0.004	0.38	−0.01
Age	0.77	0.15	5.02***	0.38	0.13	2.89**	0.75	0.15	4.98***	0.36	0.12	2.99**
More than HS dummy	−0.76	0.46	−1.65	−0.68	0.40	−1.71	−0.92	0.46	−2.02*	−0.99	0.34	−2.92**
Perceptions of crime	—	—	—	0.02	0.04	0.45	—	—	—	0.02	0.03	0.56
Perceptions of physical disorder	—	—	—	−0.09	0.06	−1.46	—	—	—	−0.11	0.06	−1.93
Perceptions of social disorder	—	—	—	−0.23	0.06	−4.22***	—	—	—	−0.18	0.05	−3.41***
Fear of crime	—	—	—	−0.41	0.10	−3.89***	—	—	—	−0.52	0.09	−5.97***
Procedural justice	—	—	—	−0.74	0.06	−12.07***	—	—	—	−0.72	0.05	−13.46***
Adjusted R^2	.093			.499			—			—		
Imputations	0			0			20			20		
n	539			414			630			630		

Note. Multiple imputation results are pulled across 20 imputations (see Rubin, 1978). OLS = ordinary least squares; HS = high school.
*p < .05. **p < .01. ***p < .001.

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areas in Philadelphia, do not significantly affect respondents' satisfaction with police ($b = 0.02$; $p > .05$). In terms of disorder, the full model shows that physical disorder does not significantly affect hot spot respondents' satisfaction with police ($b = -0.11$; $p > .05$), but respondents perceiving more social disorder are significantly less satisfied with police ($b = -0.18$; $p < .001$). More fearful respondents are also significantly less satisfied with police ($b = -0.52$; $p < .001$). Finally, consistent with past research, the full model suggests that respondents' perceptions of procedural justice significantly explains their satisfaction with police ($b = -0.72$; $p < .001$). Respondents who perceived that police treat people more procedurally unjust reported being less satisfied with police services.

Discussion

Overall, using survey data collected from 630 respondents living and working in some of Philadelphia's most violent crime hot spots, we find that respondents who are younger or more educated are less satisfied with police. In addition, respondents who perceive the police as more procedurally unjust, or perceive more social disorder, or are more fearful of crime are also less satisfied with police.

We interpret these findings to be inter-related. Social disorder, fear of crime, and procedural justice may be linked to satisfaction with police because those factors are more proximate to the respondent. In other words, social disorder, fear of crime, and procedural justice are factors that respondents tend to think about on a daily basis and thus, are more important in shaping their perceptions of police. For example, in contrast to serious crime, social disorder is more common and disrupts their quality of life more often—perhaps each time they leave their homes. This more frequent experience with social disorder reinforces the perception that the police are not very good at doing their jobs, and it reinforces it more often. Similarly, more fearful residents may change their behavior (i.e., staying in their homes more often, or take protective action such as fortifying their homes; see Miethe, 1995). Again, because these behaviors affect citizens on a daily basis, more fearful residents may blame the police for not making the neighborhood feel safer.

Perceiving that the police treat citizens procedurally unjust is also something that can affect citizens daily. Police activity and resources are concentrated in high crime neighborhoods; especially within a hot spots policing framework (Rosenbaum, 2006). Therefore, even though most people living and working in high crime areas are law-abiding, the potential for them to come into contact with the police through pedestrian and vehicle investigations is greater. These residents are also more likely to witness or hear about

others in their neighborhoods being investigated by police. If respondents from hot spots perceive that the police will treat them or others in their neighborhood in a procedurally unjust manner, then citizens may see police in a negative light. A similar scenario can arise if citizens in high crime areas hear about their neighbors' or family members' procedurally unjust experiences. Of course, further research, such as open-ended qualitative interviews, is needed to explore our explanations (see Frank, Smith, & Novak, 2005).

Implications for Selecting Hot Spots Policing Tactics

If police departments believe that citizens' perceptions of police are important, then these findings have implications for selecting hot spots policing tactics. Our finding that perceptions of crime do not link to satisfaction with police, but perceptions of procedural justice do, is probably the most enlightening. In short, reducing crime and thereby improving citizens' perceptions of crime do not appear to be enough to improve citizens' satisfaction with police; rather, police departments likely need to implement hot spots policing tactics that are mindful of treating citizens fairly (Cheurprakobkit & Bartsch, 2001 found similar results using a different methodology). In theory, any tactic could be implemented while still treating citizens fairly; however, some tactics have a greater potential for citizens to perceive unfair treatment. For example, increasing pedestrian and/or car stops, or arrests for low-level offenses, may invoke feelings of unfair treatment or racial bias (Green, 1999; Skolnick & Caplovitz, 2001). Perceived bias in pedestrian stops has even elicited lawsuits for police departments (*Bailey et al. v. City of Philadelphia et al.*, 2011).[12] Therefore, tactics such as problem-oriented policing (Braga & Bond, 2008) or foot patrol (Ratcliffe et al., 2011) that focus on opportunity reduction either through situational crime prevention tactics (Clarke, 1980) or place-based deterrence (Sorg, Haberman, Ratcliffe, & Groff, 2013) may be effective for reducing crime and maintaining/increasing satisfaction with police. The British Reassurance Policing Programme, a combination of police presence and co-production problem solving, also has promise (Quiton & Tuffin, 2007). In short, a hot spots policing approach that uses a community-oriented, problem-solving approach and emphasizes positive police–community contacts probably shows the most promise for reducing crime and increasing community satisfaction with police through increased procedural justice (Braga & Weisburd, 2010).

While perceptions of crime and physical disorder did not link to hot spot respondents' satisfaction with police, respondents perceiving more social disorder were significantly less satisfied with police. To some, this may not be

too surprising as "minor problems" are what citizens typically care about most (Skogan & Hartnett, 1997, p. 121), but this is an important finding for police operations. Police are often most concerned with violence (Groff et al., 2013), and the types of problems captured by our social disorder measure are of little interest (Moskos, 2008). Hence, our findings suggest that police departments need to find a balance between addressing serious crime (i.e., violence) and social disorder problems that affect residents' perceptions. Zero tolerance, broken-windows, or order-maintenance policing, with their focus on generally increasing arrests for minor offenses (i.e., loitering, trespassing), may possibly be a useful tactic (Kelling & Sousa, 2001) but may also affect citizens' perceptions of procedural justice and have backfire effects (Rosenbaum, 2006; Taylor, 2006; Weisburd et al., 2011). Problem solving, either by police alone or in a co-production model, however, is likely to be effective at reducing social disorder and encouraging positive police–community relations (Quiton & Tuffin, 2007; Taylor, 2006). Again, this finding suggests that hot spots policing tactics that simply aim to reduce serious crime within hot spots may not have much impact on citizens' satisfaction with police if they do not also address social disorder problems.

Finally, our results show that citizens living and working in violent crime hot spots are less satisfied with police when they are more fearful of crime. A recent evaluation suggests that foot patrol is effective for addressing violent crime hot spots (Ratcliffe et al., 2011), and past research suggests that foot patrol improves citizens' fear of crime (Kelling, 1981). Therefore, foot patrol may be one potential tactic to be used in crime hot spots. Of course, it depends on what actions police perform while on patrol. As noted earlier, one evaluation of broken-windows policing in hot spots found that citizens' fear of crime actually increased after implementation (Hinkle & Weisburd, 2008), so it is possible that aggressive enforcement by foot patrol officers would do more harm than good. Additional evidence from the community-policing literature suggests that increasing positive police–community contacts is effective at reducing citizens' fear of crime (Brown & Wycoff, 1987; Pate & Skogan, 1985; Uchida et al., 1992). An evaluation of citizens' perceptions after a large-scale implementation of reassurance policing also found that residents were less fearful after implementation (Quiton & Tuffin, 2007). Therefore, again, it seems that a comprehensive community-based problem-solving hot spots policing approach shows promise (Braga & Weisburd, 2010). For example, an approach similar to the British reassurance policing model that not only draws on foot patrol to add a dosage of police presence but also uses a community co-production problem-solving component seems particularly useful for crime prevention and improving citizens satisfaction with police (see Taylor, 2006, also).

Putting It All Together

The preceding discussion has suggested how police departments can use the results of citizen surveys to guide the types of police tactics they use in hot spots. In this section, we go a step farther and offer for consideration a hot spots policing approach specifically for those hot spots where perceptions of police are poor. This approach may be effective for addressing crime *and* maintaining/improving citizens' perceptions of police because it draws on the following evidence-based threads: (a) community/reassurance policing, (b) foot patrol, (c) problem-oriented policing, and (d) offender-focused policing. It includes short- and long-term crime reduction tactics and is based on research suggesting that these tactics are effective and un-harmful to police–community relations. It is assumed that this approach would be implemented in micro-level hot spots similar in geographic size to the ones used in the research of Ratcliffe et al. (2011) to ensure an adequate dosage of policing.

One consideration would be to commence with community outreach (i.e., community meetings, door-to-door visits, or even canvasing the neighborhood with flyers) to inform residents of the increased police activity that will take place in their area (Shaw, 1995; Sherman & Rogan, 1995). It is likely that citizens will appreciate increased police resources (Shaw, 1995), but their perceptions of procedural justice may be damaged if they are not informed that the increased police activity they will witness is designed to improve their quality of life by focusing on chronic problems—particularly social disorder problems—and serious offenders. Positive police–citizen contact has been shown to improve the community's perceptions (Brown & Wycoff, 1987; Pate & Skogan, 1985; Uchida et al., 1992).

There is mounting evidence that (geography and resources permitting) officers should be sent out to patrol on foot. Research suggests that foot patrol can be effective when delivered in high enough dosages (Groff et al., 2013; Ratcliffe et al., 2011) but the crime control benefits of foot patrol may decay over time (Sorg et al., 2013). Therefore, the purpose of foot patrol is to gain, at minimum, a short-term crime reduction and demonstrate to citizens that the police are there to help. We note that if foot patrol officers are explicitly made aware that negative experiences with police can be detrimental to police–community relations and make a conscious effort to treat citizens fairly (Schafer, Huebner, & Bynum, 2003), then foot patrol could also start to improve residents' perceptions of procedural justice in addition to reducing fear of crime (Kelling, 1981). Because foot patrol officers learn a lot about local crime problems and can develop intelligence on prolific offenders, the knowledge they gain has the potential to inform the next phases of the initiative (Wood, Sorg, Groff, Ratcliffe, & Taylor, 2013).

Simultaneous to the implementation of foot patrol, effective crime analysis could be used to break down crime problems in deployment areas (Clarke & Eck, 2003). The knowledge gained by the foot patrol officers can be used to inform the on-going crime analysis as well as supplement analyses to improve their content. After a thorough crime analysis, commanders may be in a better position to plot a course of action. This is analogous to the "Response" stage of the SARA model (Eck & Spelman, 1987).

At this point, the hot spots policing initiative will likely transition into a problem-oriented policing approach, and ultimately, the tactics implemented will depend on everything that is known about the hot spot (Eck, 2003; Goldstein, 1979, 1990). Because of the existing rapport they have likely developed, the foot patrol officers will be able to liaise with community members. In this way, the problem-solving component of the hot spots policing initiative can, if the situation warrants, transform into a co-production model of problem solving (Taylor, 2006). Aligned with our results, this should not only help residents' fear of crime (Quiton & Tuffin, 2007) but also provide the opportunity to effectively address problems that are important to citizens, such as social disorder.

If it is the case that prolific offenders are contributing to the problems in the hot spots, foot patrol officers would be the natural choice to liaise with community members as well as target prolific offenders. First, the foot patrol officers will have intelligence on who should be targeted (Wood et al., 2013). This more focused targeting can help protect against damaging perceptions of procedural justice that may occur if everyone, including law-abiding citizens, are unnecessarily the target of frequent stops for investigation or are arrested for trivial offenses (Green, 1999). Second, relationships built with respected community members can be used to disseminate information on the offender-focused strategy. Police can communicate to the community that their focus will only be on people who are expected to commit serious crimes in the near future. Similarly, community relationships can be used to develop non-punitive responses to prolific offenders (Engel, Tillyer, & Corsaro, 2013). Again, this has the potential to improve perceptions of police in the long run, particularly in terms of procedural justice. Recent research suggests that targeting prolific offenders in violent crime hot spots is not only effective (Groff et al., 2013) but also does not detrimentally affect residents' perceptions of police (Ratcliffe et al., 2013).[13]

Although the strategy outlined above is based on the current policing evidence base, we caution that this hot spots policing strategy would need to undergo rigorous empirical testing across numerous outcomes to be fully considered evidence-based (Sherman, 1998). Furthermore, we assume, as we have throughout this article, police commanders will want to implement a hot

spots policing strategy that focuses on reducing crime and disorder as well as improving police–community relations. We also recognize the difficulty of implementing such a complex hot spots policing strategy. Police commanders will have to juggle many competing interests and obstacles to implement such an approach. For example, most departments face substantial resource constraints and may have a hard time finding the personnel to implement the approach. Police departments will also need to have an existing crime and intelligence analysis capacity or commit to developing one. Finally, it is likely many contingencies that cannot currently be foreseen will arise. Certainly, such a significant change in organizational strategy will require serious commitment and strong leadership from commanders at all levels. Nonetheless, given the findings of the current study and the current policing evidence base, the outlined strategy provides police commanders guidance on how to move forward with translating empirical evidence into a robust hot spots policing strategy (see also Telep & Weisburd, 2012).

Limitations

Our findings should be considered in light of our study's limitations. First, we recognize that our response rate will worry some readers. We used probabilistic sampling methods, and our archival non-response bias check demonstrated that the demographics of our sample roughly match those of our population. Nonetheless, additional studies examining hot spot residents' and workers' perception of police are certainly needed, and readers should not take this study as the final word. Second, our analysis is at the individual level where a multi-level perspective may be more appropriate (Taylor, 2010). Researchers have suggested that there may be important neighborhood, or for the present purposes hot spot, dynamics that influence respondents' perceptions of police (Dai & Johnson, 2009; Reisig & Parks, 2000; Taylor & Lawton, 2012). Next, citizens' previous contact with police has been identified as an important predictor of satisfaction with police (Brown & Benedict, 2002). The fact that we do not control for citizens' previous contact with police may raise concerns of omitted variable bias, but it is unlikely that hot spots policing tactics can/will be designed to directly address respondents' past experiences (Frank et al., 2005). Therefore, prior police contact adds little to the purpose of our study. Nonetheless, we note that future researchers should continue to develop theories about citizens' satisfaction with police and control for any other variables when theoretically necessary (i.e., neighborhood tenure). We also note that our study is cross sectional, and more rigorous research is needed in the future before any of the relationships found in this study could be considered causal. Last,

the external validity of this study may be limited. Philadelphia is one of the largest cities in the United States. Philadelphia neighborhoods may experience different social disorder problems, or Philadelphians may simply be more fearful than residents of other cities (Skogan, 1978). Furthermore, the City of Philadelphia's government or police department may also be unique (Frank et al., 1996). The culture and operations of the Philadelphia Police Department could elicit different responses than may be given in other cities. Additional studies in other locations with possibly different types of hot spots are needed. Recall our respondents were sampled from violent crime hot spots, so our findings may not generalize to property or disorder crime hot spots. Police departments planning to implement a large scale hot spots policing initiative should consider conducting their own surveys to ensure that they have a solid understanding of their local context before adopting particular tactics.

Conclusion

Using survey data collected from violent crime hot spots, we found that respondents who were younger, or more educated, or who perceived less procedural justice, or greater social disorder, or who were more fearful of crime were less satisfied with police. We have assumed that police executives are concerned with citizens' perceptions of their department when considering operational decisions and discussed our findings in terms of selecting hot spots policing tactics. Above, we drew from the literature on effective hot spots policing tactics and how those tactics affect citizens' perceptions to outline an approach to policing hot spots we believe can reduce crime and maintain/improve citizens' perceptions of police. In the long run, this approach's effectiveness will have to be evaluated. Future research should pay particular attention to community members' perceptions of crime and the police. On the whole, the hot spots policing literature lacks a strong evidence base on how different hot spots policing tactics affect community members' perceptions of crime and the police. We encourage police executives to consider not only the crime reduction benefits of potential hot spots policing tactics but also what effect tactics might have on citizens' perceptions of police before implementing hot spots policing initiatives.

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Authors' Note

Declaration of Conflicting Interests

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Notes

1. In an effort to provide a systematic discussion of effective hot spots policing tactics, we used the following approach. First, we started by identifying all effective tactics/studies listed in the micro-places dimension of the evidence-based policing matrix (Lum, Koper, & Telep, 2011) and/or Braga's, Papachristos', and Hureau's (2012) most recent hot spots policing meta-analysis. We then searched for additional hot spots policing evaluations in the Mazerolle, Bennett, Davis, Sargeant, and Manning (2013) systematic review of police legitimacy. Finally, a literature review was conducted to identify any hot spots policing evaluations that may have been conducted after the publication of those three reviews. Any study identifying an effective hot spots policing tactic was further evaluated to determine whether the tactic's impact on citizens' perceptions of police was assessed. The majority of hot spots policing evaluations to date have merely focused on official crime and disorder outcomes (Braga & Weisburd, 2010). When discussing how each predictor of citizens' satisfaction with police might inform the selection of hot spots policing tactics below, we outline any findings from the studies identified by the above search strategy. We also sometimes draw on the community-oriented policing literature.
2. We note that the Weisburd et al. (2006) study was designed to evaluate spatial displacement rather than crime reduction effects.

3. Thiessen polygons offer a convenient method for allocating crimes along a street network to the nearest corner.

4. We were unable to distinguish between residential and commercial properties in the address file. Our goal, however, was simply to survey people who spent time within the hot spots and thus would be knowledgeable about the crime problems and police activity before and after the Philadelphia Policing Strategies Experiment. In other words, our sample represents people who live and/or work in violent crime hot spots.

5. Readers are likely to be wary of our low response rate. First, we reiterate that a low response rate does not automatically imply non-response bias. Non-response bias is always an empirical question (Groves, 2006; Merkle, 2008; Rogelberg & Luong, 1998). Next, low response rates are becoming more common (Curtin, Presser, & Singer, 2000; Groves, 2006; Groves & Peytcheva, 2008; Keeter, Kennedy, Dimock, Best, & Craighill, 2006). The average response rate for survey research has declined to roughly 20% (Dey, 1997; Sax, Gilmartin, & Bryant, 2003). Third, there is some empirical research to suggest that samples collected with low response rates are not drastically different than those drawn with higher response rates (Curtin et al., 2000; Keeter et al., 2006; Keeter, Miller, Kohut, Groves, & Presser, 2000; Visser, Krosnick, Marquette, & Curtin, 1996). Finally, as we discuss in the limitations section, our results should be considered in light of our low response rate and additional research is certainly needed to confirm or temper our results/discussion.

6. These percentages are based on the number of cases missing data on the demographic variables or at least one item used to construct the scale variables.

7. We attempted to impute individual survey items rather than analysis variables, but the models failed to converge due to complexity.

8. 2010 Census data are not yet available for the education attainment variables, so 2010 American Community Survey 5 year estimates were used.

9. Following the methodology of past researchers, census data were aggregated to the deployment areas using geographic proportionality (Downey, 2006; Hipp, 2007; Taniguchi, Ratcliffe, & Taylor, 2011). First, the 81 hot spot areas were overlaid on Philadelphia census tracts. The proportion of each census tract's geographic area the experimental areas overlapped with was then computed. Next, each census variable (counts) was multiplied by the proportion of geographic area the hot spot area subsumed in each census tract. Totals for each hot spot area were then generated by aggregating the proportional counts for each variable across all overlapping census tracts. We note that this methodology is an interpolation technique and may be less accurate in census tracts with greater within-unit heterogeneity on our variables of interest.

10. Results using indices computed by averaging the standardized values of individual items were substantively the same as the results reported using additive scales.

11. Displayed values are pooled across 20 imputations. We do not report the number of observations per attribute because they slightly vary across imputations.

12. Shaw (1995) found respondents from a quasi-experimental evaluation of increased gun seizures through pedestrian and car stops reported a better quality of life, but the author did not include measures of "residents' concerns about police brutality, procedural fairness by police, respect shown by police to citizens, or police attitudes towards minorities" (p. 708). The initiative also included a publicity campaign prior to its implementation.

13. We note that Ratcliffe, Groff, Sorg, and Haberman (2013) did not find improvements in community perceptions either, so more research will be needed to determine whether and how long it takes for community perceptions of police to improve with varying dosages of hot spots policing.

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