

Modern Applications of the Classical Perspective

Deterrence, Rational Choice, and Routine Activities or Lifestyle Theories of Crime

This section will discuss the early aggregate studies of deterrence in the late 1960s, then the perceptual studies of the 1970s, and finally the longitudinal and scenario studies of the 1980s and 1990s to the present. Other policy applications, such as increased penalties for drunk driving, white-collar crime, and so on, will also be examined. This section will also discuss the development of rational choice theory in economics and its later application to crime. Finally, it will examine the use of routine activities theory or lifestyle theory as a framework for modern research and applications for reducing criminal activity.

In Section II, we discussed the early development of the Classical and Neoclassical Schools of criminological thought. This theoretical perspective has been the dominant framework used by judges and practitioners in the practice of administering justice and punishment even in current times, but beginning in the late 19th century,

criminological researchers dismissed the classical and neoclassical frameworks. Rather, criminological research and theorizing began emphasizing factors other than free will and deterrence. Instead, an emphasis was placed on social, biological, or other factors that go beyond free will and deterrence theory. These theories will be discussed in later sections, but first we will examine the recent rebirth of classical and neoclassical theory and deterrence.

The Rebirth of Deterrence Theory and Contemporary Research

As discussed above, the Classical and Neoclassical School frameworks fell out of favor among scientists and philosophers in the late 19th century, largely due to the introduction of Darwin's ideas about evolution and natural selection. However, virtually all Western criminal systems retained the classical and neoclassical frameworks for their model of justice, particularly the United States. Nevertheless, the ideology of Beccaria's work was largely dismissed by academics and theorists after the presentation of Darwin's theory of evolution in the 1860s. Therefore, the Classical and Neoclassical Schools fell out of favor in terms of criminological theorizing for about 100 years. However, in the 1960s, the Beccarian model of offending experienced a rebirth.

In the late 1960s, several studies using aggregate measures of crime and punishment were published that used a deterrence model for explaining why individuals engage in criminal behavior. These studies revealed a new interest in the deterrent aspects of criminal behavior and further supported the importance of certainty and severity of punishment in deterring individuals from committing crime, particularly homicide. In particular, evidence was presented that showed that increased risk or certainty of punishment was associated with less crime for most serious offenses. Plus, it is a fact that most offenders who are arrested once never get arrested again, which provides some basic support for deterrence.

Many of these studies used statistical formulas to measure the degree of certainty and severity of punishment in given jurisdictions. One measure used the ratio between crimes reported to police and number of arrests in a given jurisdiction. Another measure of certainty of punishment was the ratio of arrests to convictions, or findings of guilt, in criminal cases. Other measures were also employed. Most of the studies showed the same result: The higher the rate of arrest compared to reports of crime, or the higher the conviction rate compared to the arrest rate, the lower the crime rate in the jurisdiction. On the other hand, the scientific evidence for severity, which such studies generally indicated by the lengths of sentences for comparable crimes or similar measures, did not show much impact on crime.

Additional aggregate studies examined the prevalence and influence of capital punishment on the crime rate in given states.¹ The evidence showed that the states with death penalty statutes also had higher murder rates than non-death-penalty states. Furthermore, the studies showed that murderers in death penalty states who were not executed actually served less time than murderers in non-death-penalty states. Thus, the evidence regarding increased sanctions, including capital punishment, was mixed. Still, a review of the early deterrence studies by the National Academy of Sciences concluded that, overall, there was more evidence for a deterrent effect than against it, although the finding was reported in a tone that lacked confidence, perhaps cautious of what future studies would show.²

It was not long before critics noted that studies incorporating aggregate (i.e., macro-level) statistics are not adequate indicators or valid measures of the deterrence theoretical framework, largely because the model emphasizes the perceptions of individuals. Using aggregate or group statistics is flawed because different regions may have higher or lower crime rates than others, thereby creating bias in the ratios for certainty or severity of punishment.

¹Daniel Glaser and Max S. Zeigler, "Use of the Death Penalty v. Outrage at Murder," *Crime and Delinquency* 20 (1974): 333–38; Charles Tittle, Franklin E. Zimring, and Gordon J. Hawkins, *Deterrence—The Legal Threat in Crime Control* (Chicago: University of Chicago Press, 1973); Johannes Andenaes, *Punishment and Deterrence* (Ann Arbor: University of Michigan Press, 1974); Jack P. Gibbs, *Crime, Punishment and Deterrence* (New York: Elsevier, 1975).

²Alfred Blumstein, Jacqueline Cohen, and Daniel Nagin, eds., *Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates* (Washington, DC: National Academy of Sciences, 1978).

Furthermore, the group measures produced by these studies provide virtually no information on the degree to which individuals in those regions perceive sanctions as being certain, severe, or swift. Therefore, the emphasis on the unit of analysis in deterrence research shifted from the aggregate level to a more micro, individual level.

The following phase of deterrence research focused on individual perceptions of certainty and severity of sanctions, primarily drawn at one point in time, known as **cross-sectional studies**. A number of cross-sectional studies of individual perceptions of deterrence showed that perceptions of the risk or certainty of punishment were strongly associated with intentions to commit future crimes, but individual perceptions of the severity of punishments were mixed. Furthermore, it readily became evident that it was not clear whether perceptions were causing changes in behavior or whether behavior was causing changes in perception. This led to the next wave of research, longitudinal studies of individual perceptions and deterrence, which measured behavior as well as perceptions of risk and severity over time.³

One of the primary concepts revealed by longitudinal research was that behavior was influencing perceptions of the risk and severity of punishment more than perceptions were influencing behavior. This was referred to as the **experiential effect**, which is appropriately named because people's previous experience highly influences their expectations regarding their chances of being caught and suffering the resulting penalties.

A common example is that of people who drive under the influence of alcohol (or other substances). Studies show that if you ask people who have never driven drunk how likely they would be to get caught if they drove home drunk, most predict an unrealistically high chance of getting caught. However, if you ask people who have been arrested for driving drunk, even those who have been arrested several times for this offense, they typically predict that the chance is very low. The reason for this is that these chronic drunk drivers have typically been driving under the influence for many years, mostly without being caught. It is estimated that more than 1 million miles are driven collectively by drunk drivers before one person is arrested.⁴ If anything, this is likely a conservative estimate. Thus, people who drive drunk, some of whom do so every day, are not likely to be deterred even when they are arrested more than once because they have done so for years. In fact, perhaps the most notable experts on the deterrence of drunk drivers, H. L. Ross and his colleagues, have concluded that drunk drivers who "perceive a severe punishment if caught, but a near-zero chance of being caught, are being rational in ignoring the threat."⁵ Thus, even the most respected scholars in this area admit that sanctions against drunk driving are nowhere near certain enough, even if they are growing in severity.

Another common example is seen with white-collar criminals. Some researchers have theorized that being caught by authorities for violating government rules enforced by the Securities and Exchange Commission (SEC) will make these organizations less likely to commit future offenses.⁶ However, business organizations have been in violation of established practices for years by the time they get caught, so it is likely that they will continue to ignore the rules in the future more than organizations that have never violated the rules. Thus, the certainty of punishment for white-collar violations is so low—and many would argue that the severity is also quite low—that it is quite rational for businesses and business professionals to take the risk of engaging in white-collar crime.

³Raymond Paternoster, Linda E. Saltzman, Gordon P. Waldo, and Theodore G. Chiricos, "Perceived Risk and Social Control: Do Sanctions Really Deter?" *Law and Society Review* 17 (1983): 457–80; Raymond Paternoster, "The Deterrent Effect of the Perceived Certainty and Severity of Punishment: A Review of the Evidence and Issues," *Justice Quarterly* 4 (1987): 173–217; Charles F. Manski and John V. Pepper, "Deterrence and the Death Penalty: Partial Identification Analysis Using Repeated Cross Sections," *Journal of Quantitative Criminology* 29 (2013): 123–44.

⁴Benjamin Hansen, "Punishment and Deterrence: Evidence from Drunk Driving," paper presented at the 7th Annual Conference on Empirical Legal Studies (April 2013); H. Laurence Ross, *Deterring the Drunk Driver: Legal Policy and Social Control* (Lexington: Lexington Books, 1982); H. Laurence Ross, *Confronting Drunk Driving: Social Policy for Saving Lives* (New Haven: Yale University Press, 1992); H. Laurence Ross, "Sobriety Checkpoints, American Style," *Journal of Criminal Justice* 22 (1994): 437–44; H. Laurence Ross, Richard McCleary, and Gary LaFree, "Can Mandatory Jail Laws Deter Drunk Driving? The Arizona Case," *Journal of Criminal Law and Criminology* 81 (1990): 156–70.

⁵H. Laurence Ross, "Sobriety Checkpoints," 164.

⁶See review in Sally Simpson and Christopher S. Koper, "Deterring Corporate Crime," *Criminology* 30 (1992): 347–76.

It is interesting to note that white-collar criminals and drunk drivers are two types of offenders who are considered more likely to be deterred because they are mostly of the middle- to upper-level socioeconomic class. The extant research on deterrence has shown that individuals who have something to lose are the most likely to be deterred by sanctions. This makes sense: Those who are unemployed or poor or both do not have much to lose, and for them, as well as for some minorities, incarceration may not present a significant departure from the deprived lives that they lead.

The fact that official sanctions have limitations in deterring individuals from drunk driving and white-collar crime is not a good indication of the effectiveness of deterrence-based policies. Their usefulness becomes even more questionable when other populations are considered, particularly the offenders in most predatory street crimes (robbery, burglary, etc.), in which offenders typically have nothing to lose because they come from poverty-stricken areas and are often unemployed. One recent study showed that being arrested had little effect on perceptions of the certainty of punishment; offending actually corresponded with decreases in such perceptions.⁷

Some people don't see incarceration as that much of a step down in life, given the three meals a day, shelter, and relative stability provided by such punishment. This fact epitomizes one of the most notable paradoxes we have in criminology: The individuals we most want to deter are the least likely to be deterred, primarily because they have nothing to fear. In early Enlightenment thought, Hobbes asserted that, although fear was the tool used to enforce the social contract, people who weren't afraid of punishment could not effectively be deterred. That remains true in modern days.

Along the same lines, studies have consistently shown that for young male offenders—at higher risk, with low emotional or moral inhibitions, low self-control, and high impulsivity—official deterrence is highly ineffective in preventing crimes with immediate payoffs.⁸ Thus, many factors go into the extent to which official sanctions can deter. As we have seen, even among those offenders who are in theory the most deterrable, official sanctions have little impact because their experience of not being caught weakens the value of deterrence.

The identification and understanding of the experiential effect had a profound influence on the interpretation of evidence regarding the impact of deterrence. Researchers saw that, to account for such an experiential effect, any estimation of the influence of perceived certainty or severity of punishment must control for previous experiences of engaging in unlawful behavior. The identification of the experiential effect was the primary contribution of the longitudinal studies of deterrence, but such studies faced even further criticism.

Longitudinal studies of deterrence provided a significant improvement over the cross-sectional studies that preceded this advanced methodology. However, such longitudinal studies typically involved designs in which

⁷Greg Pogarsky, KiDeuk Kim, and Raymond Paternoster, "Perceptual Change in the National Youth Survey: Lessons for Deterrence Theory and Offender Decision-Making," *Justice Quarterly* 22 (2005): 1–29.

⁸For reviews, see Stephen Brown, Finn Esbensen, and Gilbert Geis, *Criminology*, 8th ed. (Cincinnati: Anderson, 2012); Nancy Finley and Harold Grasmick, "Gender Roles and Social Control," *Sociological Spectrum* 5 (1985): 317–30; Harold Grasmick, Robert Bursik, and Karla Kinsey, "Shame and Embarrassment as Deterrents to Noncompliance with the Law: The Case of an Antilittering Campaign," *Environment and Behavior* 23 (1991): 233–51; Harold Grasmick, Brenda Sims Blackwell, and Robert Bursik, "Changes in the Sex Patterning of Perceived Threats of Sanctions," *Law and Society Review* 27 (1993): 679–705; Pamela Richards and Charles Tittle, "Gender and Perceived Chances of Arrest," *Social Forces* 59 (1981): 1182–99; George Loewenstein, Daniel Nagin, and Raymond Paternoster, "The Effect of Sexual Arousal on Expectations of Sexual Forcefulness," *Journal of Research in Crime and Delinquency* 34 (1997): 209–28; Toni Makkai and John Braithwaite, "The Dialects of Corporate Deterrence," *Journal of Research in Crime and Delinquency* 31 (1994): 347–73; Daniel Nagin and Raymond Paternoster, "Enduring Individual Differences and Rational Choice Theories of Crime," *Law and Society Review* 27 (1993): 467–96; Alex Piquero and Stephen Tibbetts, "Specifying the Direct and Indirect Effects of Low Self-Control and Situational Factors in Offenders' Decision Making: Toward a More Complete Model of Rational Offending," *Justice Quarterly* 13 (1996): 481–510; Raymond Paternoster and Sally Simpson, "Sanction Threats and Appeals to Morality: Testing a Rational Choice Model of Corporate Crime," *Law and Society Review* 30 (1996): 549–83; Daniel Nagin and Greg Pogarsky, "Integrating Celerity, Impulsivity, and Extralegal Sanction Threats into a Model of General Deterrence: Theory and Evidence," *Criminology* 39 (2001): 404–30; and Alex Piquero and Greg Pogarsky, "Beyond Stanford and Warr's Reconceptualization of Deterrence: Personal and Vicarious Experiences, Impulsivity, and Offending Behavior," *Journal of Research in Crime and Delinquency* 39 (2002): 153–86. For a recent review and a different explanation of these conclusions, see Greg Pogarsky, "Identifying 'Deterrable' Offenders: Implications for Research on Deterrence," *Justice Quarterly* 19 (2002): 431–52.

measures of perceptions of certainty and severity of punishment were collected at points in time that were separated by up to a year, including long stretches between when the crime was committed and when the offenders were asked about their perceptions of punishment. Psychological studies have clearly established that perceptions of the likelihood and severity of sanctions vary significantly from day to day, not to mention month to month and year to year.⁹ Therefore, in the late 1980s and early 1990s, a new wave of deterrence research evolved, which asked study participants to estimate their likelihood of committing a criminal act in a given situation, as well as their immediate perceptions of the certainty and severity of punishment in the same situation. This wave of research was known as **scenario (vignette) research**.¹⁰

Scenario research (i.e., vignette design) was created to deal with the limitations of previous methodological strategies for studying the effects of deterrence on criminal offending, specifically, the criticism that individuals' perceptions of the certainty and severity of punishment change drastically from time to time and across different situations. The scenario method dealt with this criticism directly by providing a specific, realistic (albeit hypothetical) situation in which a person engages in a criminal act. Participants in the study are then asked to estimate the chance that they would engage in such activity in the given circumstances and to respond to questions regarding their perceptions of the risk of getting caught (i.e., certainty of punishment) and the degree of severity of punishment they expect.

Another important and valuable aspect of scenario research was that it promoted contemporaneous (i.e., instantaneous) responses about perceptions of risk and the severity of perceived sanctions. In comparison, previous studies (e.g., aggregate, cross-sectional, longitudinal) had always relied on either group or individual measures of perceptions over long periods of time. While some argue that intentions to commit a crime given a hypothetical situation are not accurate measures of what people would do in reality, studies have shown an extremely high correlation between what people report doing in a given scenario and what they would do in real life.¹¹ A recent review of criticisms of this research method showed that one weakness was that it did not allow respondents to offer their own perceptions of the risk and costs associated with each offense.¹² Despite such criticisms, the scenario method appears to be the most accurate that we have to date to estimate the effects of individuals' perceptions on the likelihood of their engaging in given criminal activity at a given point in time. This is something that the previous waves of deterrence research—aggregate, cross-sectional, and longitudinal studies—could not estimate.

⁹Icek Ajzen and Martin Fishbein, *Understanding Attitudes and Predicting Social Behavior* (Englewood Cliffs: Prentice Hall, 1980); Martin Fishbein and Icek Ajzen, *Belief, Attitude, Intention, and Behavior* (Reading: Addison-Wesley, 1975); Icek Ajzen and Martin Fishbein, "Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research," *Psychological Bulletin* 84 (1977): 888–918. For a recent review, see Pogarsky et al., "Perceptual Change."

¹⁰Loewenstein et al., "The Effect of Sexual Arousal"; Nagin and Paternoster, "Enduring Individual Differences"; Piquero and Tibbetts, "Specifying the Direct"; Paternoster and Simpson, "Sanction Threats"; Stephen G. Tibbetts, "Traits and States of Self-Conscious Emotions in Criminal Decision Making," in *Affect and Cognition in Criminal Decision Making*, ed. Jean-Louis Van Gelder, Henk Elffers, Danielle Reynald, and Daniel Nagin (London: Routledge, 2014), 221–38; Ronet Bachman, Raymond Paternoster, and Sally Ward, "The Rationality of Sexual Offending: Testing a Deterrence/Rational Choice Conception of Sexual Assault," *Law and Society Review* 26 (1992): 343–72; Harold Grasmick and Robert Bursik, "Conscience, Significant Others, and Rational Choice: Extending the Deterrence Model," *Law and Society Review* 24 (1990): 837–61; Harold Grasmick and Donald E. Green, "Legal Punishment, Social Disapproval, and Internalization as Inhibitors of Illegal Behavior," *Journal of Criminal Law and Criminology* 71 (1980): 325–35; Stephen Klepper and Daniel Nagin, "The Deterrent Effects of Perceived Certainty and Severity of Punishment Revisited," *Criminology* 27 (1989): 721–46; Stephen Tibbetts and Denise Herz, "Gender Differences in Students' Rational Decisions to Cheat," *Deviant Behavior* 18 (1996): 393–414; Stephen Tibbetts and David Myers, "Low Self-Control, Rational Choice, and Student Test Cheating," *American Journal of Criminal Justice* 23 (1999): 179–200; Stephen Tibbetts, "Shame and Rational Choice in Offending Decisions," *Criminal Justice and Behavior* 24 (1997): 234–55.

¹¹Ajzen and Fishbein, *Understanding Attitudes*; Donald Green, "Measures of Illegal Behavior in Individual Behavior in Individual-Level Deterrence Research," *Journal of Research in Crime and Delinquency* 26 (1989): 253–75; I. Ajzen, "From Intentions to Actions: A Theory of Planned Behavior," in *Action-Control: From Cognition to Behavior*, ed. Julius Kuhl and Jurgen Beckmann (New York: Springer, 1985), 11–39; Icek Ajzen and Martin Fishbein, "The Prediction of Behavioral Intentions in a Choice Situation," *Journal of Experimental Psychology* 5 (1969): 400–16.

¹²Jeffrey A. Bouffard, "Methodological and Theoretical Implications of Using Subject-Generated Consequences in Tests of Rational Choice Theory," *Justice Quarterly* 19 (2002): 747–71.

Ultimately, the studies using the scenario method showed that participants were more affected by perceptions of certainty and less so, albeit sometimes significantly, by perceptions of severity. These findings supported previous methods of estimating the effects of *formal* or *official deterrence*, meaning the deterrent effects of three general groups: law enforcement, courts, and corrections (i.e., prisons and probation or parole). Thus, the overall conclusion regarding the effects of official sanctions on individual decision making remained unaltered. However, one of the more interesting aspects of the scenario research method is that it helped solidify the importance of extralegal variables in deterring criminal behavior, variables that had been neglected by previous methods.

These extralegal or informal deterrence variables, which include any factors beyond the formal sanctions of police, courts, and corrections—such as employment, family, friends, or community—are typically known as informal or unofficial sanctions. The scenario research studies helped show that these informal sanctions provided most of the deterrent effect—if there was any. These findings coincided with the advent of a new model of deterrence, which became commonly known as *rational choice theory*.

Rational Choice Theory

Rational choice theory is a perspective that criminologists adapted from economists, who used it to explain a variety of individual decisions regarding a variety of behaviors. This framework emphasizes all the important factors that go into a person's decision to engage or not engage in a particular act. In terms of criminological research, the rational choice model emphasized both official or formal forms of deterrence, as well as the informal factors that influence individual decisions regarding criminal behavior. This represented a profound advance in the understanding of human behavior. After all, as studies showed, most individuals are more affected by informal factors than they are by official or formal factors.

Although there were several previous attempts to apply the rational choice model to the understanding of criminal activity, the most significant work, which brought rational choice theory into the mainstream of criminological research, was Cornish and Clarke's *The Reasoning Criminal: Rational Choice Perspectives on Offending* in 1986.¹³ Furthermore, in 1988, Katz published his work *Seductions of Crime*, which, for the first time, placed an emphasis on the benefits (mostly the inherent physiological pleasure) of committing crime;¹⁴ before Katz's publication, virtually no attention had been paid to the benefits of offending, let alone the fun that people feel when they engage in criminal behavior. A recent study showed that the publication of Cornish and Clarke's book, as well as the timing of other publications such as Katz's, led to an influx of criminological studies in the late 1980s to mid-1990s based on the rational choice model.¹⁵

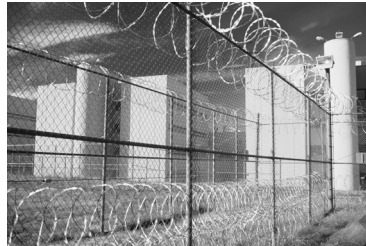
These studies on rational choice showed that while official or formal sanctions tend to have some effect on individuals' decisions to commit crime, they almost always are relatively unimportant compared to extralegal or informal factors. The effects of people's perceptions of how much shame or loss of self-esteem they would experience, even if no one else found out that they committed the crime, was one of the most important variables in determining whether or not they would do so.¹⁶ Additional evidence indicated that females were more influenced

¹³Derek Cornish and Ron Clarke, *The Reasoning Criminal: Rational Choice Perspectives on Offending* (New York: Springer-Verlag, 1986).

¹⁴Jack Katz, *Seductions of Crime* (New York: Basic Books, 1988).

¹⁵Stephen Tibbetts and Chris Gibson, "Individual Propensities and Rational Decision-Making: Recent Findings and Promising Approaches," in *Rational Choice and Criminal Behavior*, eds. Alex Piquero and Stephen Tibbetts (New York: Routledge, 2002), 3–24. See recent review by Jean-Louis Van Gelder, Henk Elffers, Danielle Reynald, and Daniel Nagin (eds.), *Affect and Cognition in Criminal Decision Making* (2014; London: Routledge).

¹⁶Grasmick and Bursik, "Conscience"; Pogarsky, "Identifying 'Deterrable' Offenders"; Tibbetts, "Shame and Rational Choice"; Nagin and Paternoster, "Enduring Individual Differences"; Tibbetts and Herz, "Gender Differences"; Tibbetts and Myers, "Low Self-Control"; Harold Grasmick, Brenda Sims Blackwell, and Robert Bursik, "Changes over Time in Gender Differences in Perceived Risk of Sanctions," *Law and Society Review* 27



▲ **Image 3.1** There are both formal and informal elements of deterrence that influence decisions of whether or not to commit criminal behavior.

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by the effects of shame and moral beliefs in this regard than were males.¹⁷ Recent studies have shown that differing levels of certain personality traits, especially self-control and empathy, are likely the reason why males and females differ so much in engaging in criminal activity.¹⁸ Finally, the influence of peers has a profound impact on individual perceptions of the pros and cons of offending, because seeing friends get away with crimes significantly decreases the perceived risk of punishment.¹⁹

Another area of rational choice research dealt with the influence that an individual's behavior would have on those around her or him. A recent review and test of perceived social disapproval showed that this was one of the most important variables in decisions to commit crime.²⁰ In addition to self-sanctions, such as feelings of shame and embarrassment, the perception of how loved ones, friends, and employers, would respond is perhaps the most important factor that goes into a person's decision to engage in criminal activity. These are the people we deal with every day, and some of them are the source of our livelihoods, so it should not be too surprising that our perceptions of how they will react strongly affect how we behave.

(1993): 679–705; Harold Grasmick, Robert Bursik, and Bruce Arneklev, "Reduction in Drunk Driving as a Response to Increased Threats of Shame, Embarrassment, and Legal Sanctions," *Criminology* 31 (1993): 41–67; Stephen Tibbetts, "Self-Conscious Emotions and Criminal Offending" *Psychological Reports* 93 (2004): 101–31.

¹⁷Tibbetts and Herz, "Gender Differences"; Grasmick et al., "Changes in the Sex Patterning"; Finley and Grasmick, "Gender Roles"; Pogarsky et al., "Perceptual Change"; Stephen Tibbetts, "Gender Differences in Students' Rational Decisions to Cheat," *Deviant Behavior* 18 (1997): 393–414.

¹⁸Nagin and Paternoster, "Enduring Individual Differences"; Grasmick et al., "Changes over Time"; Tibbetts, "Self-Conscious Emotions"; Tibbetts, "Traits and States."

¹⁹Pogarsky et al., "Perceptual Change."

²⁰Pogarsky, "Identifying 'Deterrable' Offenders."

Perhaps the most important finding of rational choice research was that the expected benefits, particularly the pleasure offenders would get from offending, had one of the most significant effects on their decisions to offend. Many other conclusions have been made regarding the influence of extralegal or informal factors on criminal offending, but the ultimate conclusion that can be made is that these informal deterrent variables typically hold more influence on individual decision making regarding deviant activity than the official or formal factors that were emphasized by traditional Classical School models of behavior.

The rational choice model of criminal offending became the modern framework of deterrence. Official authorities acknowledged the influence of extralegal or informal factors, as seen in modern efforts to incorporate the family, employment, and community in rehabilitation efforts. Such efforts are highly consistent with the current understanding of the Classical School and rational choice frameworks, namely, that individuals are more deterred by the perceived impact of their actions on informal aspects of their lives than they are by the formal punishments they might face if they carry out illegal acts.

Routine Activities Theory



▲ **Image 3.2** Marcus Felson, 1947–, Rutgers University, author of routine activities theory.

Routine activities theory, or **lifestyle theory**, is another contemporary form of the Classical School framework in the sense that it assumes an offender who makes rational decisions. The general model of routine activities theory was originally presented by Lawrence Cohen and Marcus Felson in 1979.²¹ This theoretical framework emphasized the presence of three factors that come together in time and place to create a high likelihood of crime and victimization. These three factors are: motivated offender(s), suitable target(s), and lack of guardianship. Overall, the theory is appropriately named, in the sense that it assumes that most crime occurs in the daily routine of people who happen to see—and then seize—tempting opportunities to commit crime. Studies tend to support this idea, as opposed to the idea that most offenders leave their home knowing they are going to commit a crime; the latter offenders are called *hydraulic* and are relatively rare compared to the opportunistic type.

Regarding the first factor noted as being important for increasing the likelihood of criminal activity—a motivated offender—the routine activities theory does not provide much insight. Rather, the model simply assumes that some individuals tend to be motivated and leaves it at that. Fortunately, we have many other theories that can fill this notable absence. The strength of routine activities theory lies in its elaboration of the other two aspects of a crime-prone environment: suitable targets and lack of guardianship.

Suitable targets can include a variety of situations. For example, a very suitable target can be a vacant house in the

²¹Lawrence Cohen and Marcus Felson, “Social Change and Crime Rates: A Routine Activities Approach,” *American Sociological Review* 44 (1979): 214–41.

suburbs, which the family has left for summer vacation. Data clearly show that burglaries more than double in the summer when many families are on vacation. Other forms of suitable targets range from an unlocked car to a female alone at a shopping mall carrying a lot of cash and credit cards or purchased goods. Other likely targets are bars or other places that serve alcohol. Offenders have traditionally targeted drunk persons because they are less likely to be able to defend themselves, as illustrated by a history of lawbreakers rolling drunks for their wallets that extends back to the early part of the 20th century. This is only a short list of the many types of suitable targets that are available to motivated offenders in everyday life.

The third and final aspect of the routine activities model for increased likelihood of criminal activity is the lack of guardianship. Guardianship is often thought of as a police officer or security guard, which is often the case. There are many other forms of guardianship, however, such as owning a dog to protect a house, which studies demonstrate can be quite effective. Just having a car or house alarm constitutes a form of guardianship. Furthermore, the presence of an adult, neighbor, or teacher can effectively guard an area against crime. In fact, recent studies show that increased lighting in the area can prevent a significant amount of crime, with one study showing a 20% reduction in overall crime in areas randomly chosen to receive improved lighting as compared to control areas that did not.²² Regardless of the type of guardianship, it is the absence of adequate guardianship that sets the stage for crime; on the other hand, each step taken toward protecting a place or person is likely to deter offenders from choosing the target in relation to others. Locations that have a high convergence of motivated offenders, suitable targets, and lack of guardianship are typically referred to as *hot spots*.

Perhaps the most supportive evidence for routine activities theory and hot spots was the study of 911 calls for service in Minneapolis, Minnesota.²³ This study examined all serious calls (as well as total calls) to police for a one-year period. Half of the top 10 places from which police were called were bars or locations where alcohol was served. As mentioned above, establishments that serve alcohol are often targeted by motivated offenders because of their high proportion of suitable targets. Furthermore, a number of bars tend to have a low level of guardianship in relation to the number of people they serve. Readers of this book may well relate to this situation. Most college towns and cities have certain drinking establishments that are known as being hot spots for crime.

Still, the Minneapolis hot spot study showed other types of establishments that made the top 10 rankings. These included places such as bus depots, convenience stores, run-down motels and hotels, downtown malls, and strip malls. The common theme linking these locations and the bars was the convergence of the three aspects described by routine activities theory as being predictive of criminal activity. Specifically, these places attracted motivated offenders, largely because they have a lot of vulnerable targets and lack sufficient levels of security or guardianship.

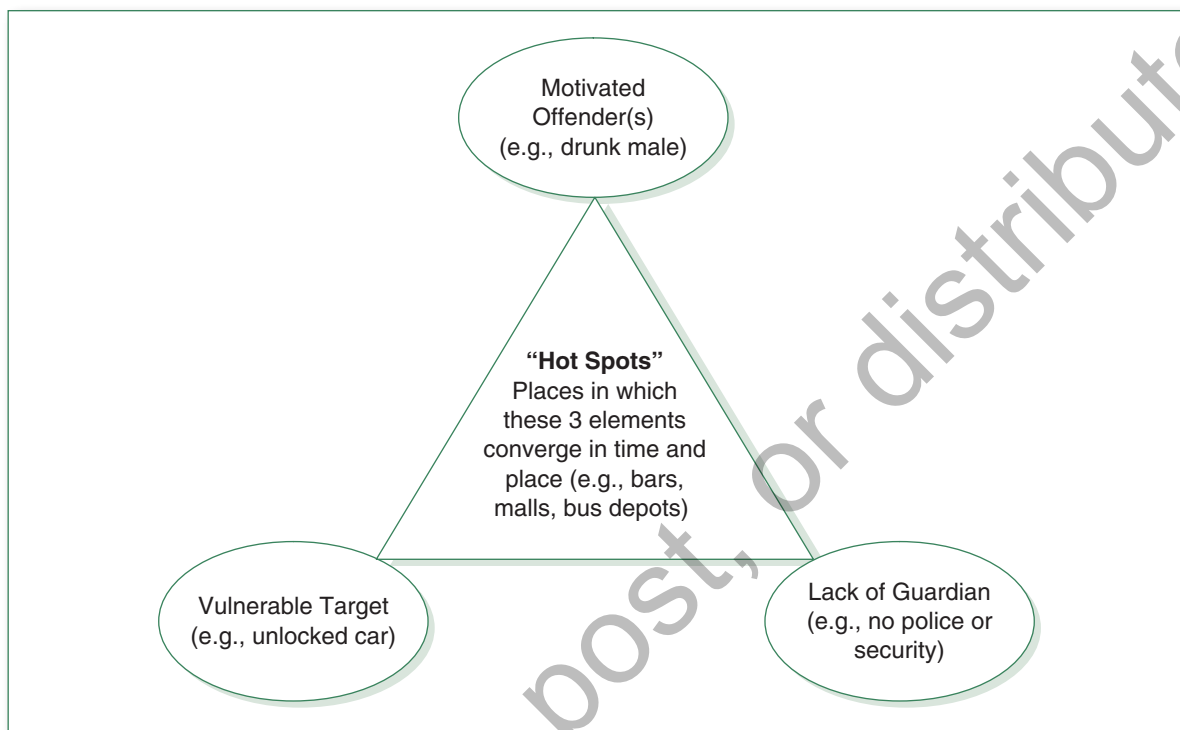
The routine activities framework has been applied in many contexts and places, many of them international.²⁴

²²David P. Farrington and Brandon C. Welsh, "Improved Street Lighting and Crime Prevention," *Justice Quarterly* 19 (2002): 313–43; Spiros Kitsinelisa and Georges Zissisa, "A Short Review on Lighting and Security," *Journal of Applied Security Research* 7 (2012): 341–353.

²³Lawrence Sherman, Patrick R. Gartin, and Michael Buerger, "Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place," *Criminology* 27 (1989): 27–56.

²⁴Anthony A. Braga, Andrew V. Papachristos, and David M. Hureau, "The Effects of Hot Spots Policing on Crime: An Updated Systematic Review and Meta-Analysis," *Justice Quarterly* 29 (2012): 1–31; Jon Gunnar Bernburg and Thorolfur Thorlindsson, "Routine Activities in Social Context: A Closer Look at the Role of Opportunity in Deviant Behavior," *Justice Quarterly* 18 (2001): 543–67. See also Richard Bennett, "Routine Activity: A Cross-National Assessment of a Criminological Perspective," *Social Forces* 70 (1991): 147–63; James Hawdon, "Deviant Lifestyles: The Social Control of Routine Activities," *Youth and Society* 28 (1996): 162–88; James L. Massey, Marvin Krohn, and Lisa Bonati, "Property Crime and the Routine Activities of Individuals," *Journal of Research in Crime and Delinquency* 26 (1989): 378–400; Terrance Miethe, Mark Stafford, and J. Scott Long, "Social Differences in Criminological Victimization: A Test of Routine Activities/Lifestyles Theories," *American Sociological Review* 52 (1987): 184–94; Elizabeth Mustaine and Richard Tewksbury, "Predicting Risks of Larceny Theft Victimization: A Routine Activity Analysis Using Refined Lifestyle Measures," *Criminology* 36 (1998): 829–57; D. Wayne Osgood, Janet Wilson, Patrick M. O'Malley, Jerald Bachman, and Lloyd Johnston, "Routine Activities and Individual

Figure 3.1 Routine activities theory



Modern applications of routine activities theory include geographic profiling, which uses satellite positioning systems in perhaps the most attractive and marketable aspect of criminological research in contemporary times. Essentially, such research incorporates computer software for global positioning systems (GPS) to identify the exact location of every crime that takes place in a given jurisdiction. Such information has been used to solve or predict various crimes, to the point where serial killers have been caught by triangulating the sites where the victims were found to show the most likely place where the killer lived.

Some theorists have proposed a theoretical model based on individuals' lifestyles, which has a large overlap with routine activities theory, as shown in studies previously reviewed.²⁵ It only makes sense that a person who lives a more risky lifestyle, for example, by frequenting bars or living in a high-crime area, will be at more risk because she or he is close to various hot spots as identified by routine activities theory. Although some criminologists label this phenomenon a lifestyle perspective, it is virtually synonymous with the routine activities model because such lifestyles incorporate the same conceptual and causal factors in routine activities.

Deviant Behavior," *American Sociological Review* 61 (1996): 635–55; Dennis Roncek and Pamela Maier, "Bars, Blocks, and Crimes Revisited: Linking the Theory of Routine Activities to the Empiricism of Hot Spots," *Criminology* 29 (1991): 725–53; and Robert Sampson and John Wooldredge, "Linking the Micro- and Macro-Level Dimensions of Lifestyle-Routine Activity and Opportunity Models of Predatory Victimization," *Journal of Quantitative Criminology* 3 (1987): 371–93.

²⁵Hawdon, "Deviant Lifestyles"; Sampson and Wooldredge, "Linking the Micro"; Brown et al., *Criminology*.

Policy Implications

There are numerous policy implications that can be derived from the theories and scientific findings in this section. Here we will concentrate on some of the most important policies. First, we look at the policy of broken windows, which has many assumptions similar to those of the routine activities and rational choice theories. The broken windows perspective emphasizes the need for police to crack down on minor offenses to reduce major crimes.²⁶ Although many cities (e.g., New York and Los Angeles) have claimed reductions in serious crimes by using this theory, crime was reduced by the same amount across most U.S. cities during the same time (the late 1990s to mid 2000s).

Other policies derived from the theories in this section include the *three-strikes-you're-out* policy, which assumes that offenders will make a rational choice not to commit future offenses because they could go to prison for life if they commit three felonies; the negatives certainly outweigh the expected benefits for the third crime. Remember Beccaria's view that for deterrence to be extremely effective, punishment must be swift, certain, and severe. Where does the three-strikes policy fall in this equation? The bottom line is that it is much more severe than it is swift or certain. Given Beccaria's philosophy (see Section II), this policy will probably not work because it is not certain or swift. However, it is severe in the sense that a person can be sentenced to life if she or he commits three felony offenses over time.

A controversial three-strikes law was passed by voter initiative in California, and other states have adopted similar types of laws.²⁷ It sends third-time felons to prison for the rest of their lives regardless of the nature of that third felony. California first requires convictions for two *striking* felonies, crimes like murder, rape, aggravated assault, burglary, drug offenses, and so on. Then, any third felony can trigger a life sentence. The stories about people going to prison for the rest of their lives for stealing pieces of pizza or shoplifting DVDs, while rare, are quite true.

The question we are concerned with here is, does the three-strikes policy work? As a specific deterrent, the answer is clearly yes; offenders who are in prison for the rest of their lives cannot commit more crimes on the streets. In that regard, three-strikes works very well. Some people feel, however, that laws like three-strikes need to have a general deterrent effect to be considered successful, meaning that this law should deter everyone from engaging in multiple crimes. So, is three-strikes a general deterrent? Unfortunately, there are no easy answers to this question because laws vary from state to state, the laws are used at different rates across the counties in a given state, and so forth.

There is at least some consensus in the literature, however. One study from California suggests that three-strikes has reduced crime,²⁸ but the remaining studies show that three-strikes either has had no effect on crime or has actually increased crime.²⁹ How could three-strikes increase crime? The authors attributed the increase in homicide following the enactment of three-strikes laws to the possibility that third-strikers have an incentive to kill victims and any witnesses in an effort to avoid apprehension. Although this argument is tentative, it may be true.³⁰

²⁶James Q. Wilson and George Kelling, "Broken Windows: The Police and Neighborhood Safety," *Atlantic Monthly* (March 1982): 29–38.

²⁷David Shichor and Dale K. Sechrest, eds., *Three Strikes and You're Out: Vengeance as Social Policy* (Thousand Oaks: Sage, 1996).

²⁸Joanna M. Shepherd, "Fear of the First Strike: The Full Deterrent Effect of California's Two- and Three-Strikes Legislation," *Journal of Legal Studies* 31 (2002): 159–201.

²⁹See Lisa Stolzenberg and Stewart J. D'Alessio, "Three Strikes and You're Out: The Impact of California's New Mandatory Sentencing Law on Serious Crime Rates," *Crime and Delinquency* 43 (1997): 457–69; and Mike Males and Dan Macallair, "Striking Out: The Failure of California's 'Three-Strikes and You're Out Law,'" *Stanford Law and Policy Review* 11 (1999): 65–72.

³⁰Steven N. Durlauf and Daniel S. Nagin, "Imprisonment and Crime: Can Both Be Reduced?," *Criminology and Public Policy* 10 (2011): 13–54; Thomas B. Marvell and Carlisle E. Moody, "The Lethal Effects of Three-Strikes Laws," *Journal of Legal Studies* 30 (2001): 89–106. See also Tomislav Kovandzic, John J. Sloan III, and Lynne M. Vieraitis, "Unintended Consequences of Politically Popular Sentencing Policy: The Homicide-Promoting Effects of 'Three Strikes' in U.S. Cities (1980–1999)," *Criminology and Public Policy* 1 (2002): 399–424. For a review of empirical evaluations of three-strikes laws, see John Worrall, "The Effect of Three-Strikes Legislation on Serious Crime in California," *Journal of Criminal Justice* 32 (2004): 283–96.

This is just one of the many policy implications that can be derived from this section. We expect that readers of this book will come up with many more policy implications, but it is vital to examine the empirical literature to determine these policies' usefulness in reducing criminal activity. Other policy implications of the theories and findings described in this section will be discussed in the final section of this book.

In a strategy that is also strongly based on the rational choice model, a number of judges have started using shaming strategies to deter offenders from recidivating.³¹ They have ordered everything from publicly posting pictures of men arrested for soliciting prostitutes to forcing offenders to walk down main streets of towns wearing signs that announce that they've committed crimes. These are just two examples of an increasing trend that emphasizes the informal or community factors required to deter crime. Unfortunately, to date, there have been virtually no empirical evaluations of the effectiveness of such shaming penalties, although studies of expected shame for doing an act consistently show a deterrent effect.³²

Conclusion

This section reviewed the more recent forms of classical and deterrence theory, such as rational choice theory, which emphasizes the effects of informal sanctions (e.g., family, friends, employment) and the benefits and costs of offending; and a framework called routine activities theory, which explains why victimization tends to occur far more often in certain locations (i.e., hot spots) due to the convergence of three key elements in time and place—motivated offender(s), vulnerable target(s), and lack of guardianship—which create attractive opportunities for crime as individuals go about their everyday activities. The common element across all of these perspectives is the underlying assumption that individuals are rational beings who have free will and thus choose their behavior based on assessment of a given situation, such as by weighing possible risks versus potential payoffs. Although the studies examined in this section lend support to many of the assumptions and propositions of the classical framework, it is also clear that there is a lot more involved in explaining criminal human behavior than the individual decision making that goes on before a person engages in rule violation. After all, human beings, especially chronic offenders, are often not rational and often do things spontaneously without considering the potential risks beforehand. So, despite the use of the classical and neoclassical models in most systems of justice in the modern world, such theoretical models of criminal activity largely fell out of favor among experts in the mid-19th century, when an entirely new paradigm of human behavior became dominant. This new perspective became known as the Positive School, and we will discuss the origin and development of this paradigm in the following section.

Section Summary

- ◆ After 100 years of neglect by criminologists, the classical and deterrence models experienced a rebirth in the late 1960s.
- ◆ The seminal studies in the late 1960s and early 1970s were largely based on aggregate and group rates of crime, as well as group rates of certainty and severity of punishment, which showed that levels of actual punishment and especially certainty of punishment were associated with lower levels of crime.
- ◆ A subsequent wave of deterrence research, cross-sectional surveys, which were collected at one time, supported previous findings that perceptions of certainty of punishment had a strong, inverse association with offending, whereas findings regarding severity were mixed.

³¹Alex Piquero and Stephen Tibbetts, eds., *Rational Choice and Criminal Behavior* (New York: Routledge, 2002).

³²Tibbetts, "Gender Differences."

- ◆ Longitudinal studies showed that much of the observed association between perceived levels of punishment and offending could be explained by the experiential effect, which is the phenomenon whereby behavior, rather than deterrence, affects perceptions (i.e., as opposed to perceptions affecting behavior).
- ◆ Scenario studies addressed the experiential effect by supplying a specific context, that is, through presenting a detailed vignette and then asking what subjects would do in that specific circumstance and what their perceptions of the event were.
- ◆ Rational choice theory emphasizes not only the formal and official aspects of criminal sanctions but also the informal or unofficial aspects, such as family and community.
- ◆ Whereas traditional classical deterrence theory ignored the benefits of offending, rational choice theory emphasizes them, such as the thrill offending produces, as well as the social benefits of committing crime.
- ◆ Routine activities theory provides a theoretical model that explains why certain places have far more crime than others and why some locations have hundreds of calls to police each year, whereas others have none.
- ◆ Lifestyle theories of crime reveal that the way people live may predispose them to both crime and victimization.
- ◆ Routine activities theory and the lifestyle perspective are becoming key in one of the most modern approaches to predicting and reducing crime and victimization. Specifically, GPS and other forms of geographical mapping of crime events have contributed to an elevated level of research and attention given to these theoretical models, due to their importance in specifically documenting where crime occurs and, in some cases, predicting where future crimes will occur.
- ◆ All of the theoretical models and studies reviewed in this section were based on classical and deterrence models, which assume that individuals consider the potential benefits and costs of punishment and then make their decisions about whether or not to engage in the criminal act.

KEY TERMS

cross-sectional studies

rational choice theory

scenario (vignette) research

experiential effect

routine activities
theory (lifestyle theory)

DISCUSSION QUESTIONS

1. Do you think it was good that the deterrence model was reborn, or do you think it should have been left for dead? Explain why you feel this way.
2. Considering the aggregate level of research in deterrence studies, do you find such studies valid? Explain why or why not.
3. In comparing longitudinal studies to scenario (vignette) studies, which do you think offers the most valid method for examining individual perceptions regarding the costs and benefits of committing offenses? Explain why you feel this way.
4. Can you relate to the experiential effect? If you can't, do you know someone whose behavior seems to resemble that which results from this phenomenon? Make sure to articulate what the experiential effect is.
5. With rational choice theory in mind, consider whether you would rather be subject to formal sanctions if none of your family, friends, or employers found out that you had engaged in shoplifting, or face the informal sanctions but receive no formal punishment (other than being arrested) for such a crime. Explain your decision.

6. As a teenager, did you or family or friends get a rush out of doing things that were deviant or wrong? If so, did that feeling seem to outweigh any legal or informal consequences that might have deterred you or people you knew?
7. With routine activities theory in mind, consider which places, residences, or areas of your hometown fit the idea that certain places have more crime than others (i.e., are hot spots)? Explain how you, friends, or others (including police) in your community deal with such areas. Does it work?
8. Which of the three elements of routine activities theory do you feel is the most important to address in efforts to reduce crime in the hot spots?
9. What lifestyle characteristics lead to the highest offending or victimizing rates? List at least five factors that lead to such propensities.
10. Find at least one study that uses mapping and geographical (GPS) data, and report the conclusions of that study. Do the findings and conclusions fit the routine activities theoretical framework? Why or why not?
11. What types of policy strategies derived from rational choice and routine activities theories do you think would be most effective? Least effective?

WEB RESOURCES

Modern Testing of Deterrence

<http://www.deathpenaltyinfo.org/>

Rational Choice Theory

<http://www.answers.com/topic/rational-choice-theory-criminology>

Routine Activities and Lifestyle Theory

<http://www.popcenter.org/learning/pam/help/theory.cfm>

READING 4

In this reading, Anthony Braga and David Weisburd present a review and analysis of various programs that emphasized reducing crime activity in the following areas: gang- or group-involved violence, repeat offenders, and the drug market. They carried out a systematic review to examine the evidence found from such strategies of focused deterrence, applying an advanced form of statistical analysis, called a meta-analysis, to combine the findings from numerous studies. Their findings contribute to our knowledge of the effectiveness of focused deterrence strategies for dealing with crime, especially in certain situations.

— The Effects of Focused Deterrence Strategies on Crime —

A Systematic Review and Meta-analysis of the Empirical Evidence

Anthony A. Braga^{1,2} and David L. Weisburd^{3,4}



Introduction

Deterrence theory posits that crimes can be prevented when the costs of committing the crime are perceived by the offender to outweigh the benefits (Gibbs 1975; Zimring and Hawkins 1973). Most discussions of the deterrence mechanism distinguish between “general” and “special” deterrence (Cook 1980). General deterrence is the idea that the general population is dissuaded from committing crime when it sees that punishment necessarily follows the commission of a crime. Special deterrence involves punishment administered to criminals with the intent to discourage them from committing crimes in the future. Much of the literature evaluating deterrence focuses on the effect of changing certainty, swiftness, and severity of punishment associated with certain acts on the prevalence of those

crimes (see, e.g., Apel and Nagin 2011; Blumstein, Cohen, and Nagin 1978; Cook 1980; Nagin 1998; Paternoster 1987).

In recent years, scholars have begun to argue that police interventions provide an effective approach for gaining both special and general deterrence against crime. A series of experimental and quasi-experimental studies has shown that the police can be effective in preventing crime (Braga 2001, 2005; Skogan and Frydl 2004; Weisburd and Eck 2004) and that such crime prevention benefits are not offset by displacement of crime to areas near to police interventions (Braga 2001; Weisburd et al. 2006). Durlauf and Nagin have drawn from this literature to argue that “(i)ncreasing the visibility of the police by hiring more officers and by allocating existing officers in ways that heighten the perceived risk of apprehension consistently seem to have substantial marginal deterrent effects” (2011:14). Indeed, they conclude that crime prevention

SOURCE: Anthony A. Braga and David L. Weisburd, “The Effects of Focused Deterrence Strategies on Crime: A Systematic Review and Meta-analysis of the Empirical Evidence,” *Journal of Research in Crime and Delinquency* 49 (2012): 323–58 (Sage).

¹Rutgers University, Newark, NJ, USA

²Harvard University, Cambridge, MA, USA

³Hebrew University Law School, Jerusalem, Israel

⁴George Mason University, Fairfax, VA, USA

in the United States would be improved by “shifting resources from imprisonment to policing” (2011:9–10).

A recent innovation in policing that capitalizes on the growing evidence of the effectiveness of police deterrence strategies is the “focused deterrence” framework, often referred to as “pulling-levers policing” (Kennedy 1997, 2008). Pioneered in Boston as a problem-oriented policing project to halt serious gang violence during the 1990s (Kennedy, Piehl, and Braga 1996), the focused deterrence framework has been applied in many U.S. cities through federally sponsored violence prevention programs such as the Strategic Alternatives to Community Safety Initiative and Project Safe Neighborhoods (Dalton 2002). Focused deterrence strategies honor core deterrence ideas, such as increasing risks faced by offenders, while finding new and creative ways of deploying traditional and nontraditional law enforcement tools to do so, such as directly communicating incentives and disincentives to targeted offenders (Kennedy 1997, 2008). The basic principles of the focused deterrence approach have also been applied to overt drug market problems (Kennedy 2009) and repeat offending by substance-abusing probationers (Hawken and Kleiman 2009) with positive crime control gains reported.

The evaluation of the best-known focused deterrence strategy, Boston’s Operation Ceasefire (Braga et al. 2001; Piehl et al. 2003), has been greeted with both a healthy dose of skepticism (Fagan 2002; Rosenfeld, Fornango, and Baumer 2005) and some support (Cook and Ludwig 2006; Morgan and Winship 2007). The National Academy of Sciences’ recent report on firearms data and research concluded that the Ceasefire quasi-experimental evaluation was “compelling” in associating the intervention with a 63 percent reduction in youth homicide in Boston (Wellford, Pepper, and Petrie 2005:10); however, the report also stated that the lack of a randomized controlled trial left some doubt over how much of the decline was due to Ceasefire relative to other rival causal factors.



Method

Our examination of the effects of focused deterrence strategies on crime followed the systematic review protocols and conventions of the Campbell Collaboration. It is important to note here that, given limited space, this article

focuses on our examination of the crime reduction benefits associated with focused deterrence strategies. We encourage readers interested in a broader range of program operation and evaluation issues to consult our Campbell review (Braga and Weisburd 2011).

Meta-analysis is a method of systematic reviewing and was designed to synthesize empirical relationships across studies, such as the effects of a specific crime prevention intervention on criminal offending behavior (Wilson 2001). Meta-analysis uses specialized statistical methods to analyze the relationships between findings and study features (Lipsey and Wilson 1993; Wilson 2001). The “effect size statistic” is the index used to represent the findings of each study in the overall meta-analysis of study findings and represents the strength and direction (positive or negative) of the relationship observed in a particular study (e.g., the size of the treatment effect found). The “mean effect size” represents the average effect of treatment on the outcome of interest across all eligible studies in a particular area and is estimated by calculating a mean that is weighted by the precision of the effect size for each individual study.

Criteria for Inclusion and Exclusion of Studies in the Review

To be eligible for this review, interventions had to be considered a focused deterrence strategy as described above. Only studies that used comparison group designs involving before and after measures were eligible for the main analyses of this review. The comparison group study had to be either a randomized controlled trial or a quasi-experimental evaluation with comparison groups (Campbell and Stanley 1966; Cook and Campbell 1979). The units of analysis could be areas, such as cities, neighborhoods, or police beats, or individuals. Eligible studies had to measure the effects of the focused deterrence intervention on officially recorded levels of crime at places or crime by individuals. Appropriate crime measures included crime incident reports, citizen emergency calls for service, and arrest data. Particular attention was paid to studies that measured crime displacement effects and diffusion of crime control benefit effects (Clarke and Weisburd 1994; Reppetto 1976). The review considered all forms of displacement and diffusion reported by the studies.

Search Strategies for Identification of Studies

Several strategies were used to perform an exhaustive search for literature fitting the eligibility criteria. First, a keyword search¹ was performed on 15 online abstract databases.² Second, we reviewed the bibliographies of past narrative and empirical reviews of literature that examined the effectiveness of focused deterrence programs (Kennedy 2008; Skogan and Frydl 2004; Wellford et al. 2005). Third, we performed forward searches for works that have cited seminal focused deterrence studies (Braga et al. 2001; Kennedy et al. 1996; McGarrell et al. 2006). Fourth, we searched bibliographies of narrative reviews of police crime prevention efforts (Braga 2008a; Sherman 2002; Weisburd and Eck 2004) and past completed Campbell systematic reviews of police crime prevention efforts (Braga 2007; Mazerolle, Soole, and Rombouts 2007; Weisburd et al. 2008). Fifth, we performed hand searches of leading journals in the field.³ These searches were all completed between May 2010 and September 2010.

After finishing the above searches and reviewing the studies as described later, we e-mailed the list of studies meeting our eligibility criteria in September 2010 to leading criminology and criminal justice scholars knowledgeable in the area of focused deterrence strategies. These 90 scholars were defined as those who authored at least one study that appeared on our inclusion list, anyone involved with the National Academy of Sciences reviews of police research (Skogan and Frydl 2004) and firearms research (Wellford et al. 2005), and other leading scholars identified

by the authors (available upon request). This helped us identify unpublished studies that did not appear in conventional databases or other reviews. Finally, we consulted with an information retrieval specialist at the outset of our review and at points along the way in order to ensure that we used appropriate search strategies to identify the studies meeting the criteria of this review.⁴

Statistical Procedures and Conventions

As a preliminary examination of the effects of focused deterrence strategies on crime, we used a vote counting procedure. In this rudimentary approach, each study metaphorically casts a vote for or against the effectiveness of treatment. In our closer examination of program effects, meta-analyses were used to determine the size, direction, and statistical significance of the overall impact of focused deterrence strategies on crime by weighting program effect sizes based on the variance of the effect size and the study sample size (Lipsey and Wilson 2001). We used the standardized mean difference effect size (also known as Cohen's *d*; see Cohen 1988; Rosenthal 1994) and employed the Effect Size Calculator, developed by David B. Wilson and available on the Campbell Collaboration's Web site, to calculate standardized mean difference effect sizes for reported outcomes in each study. We then used Biostat's Comprehensive Meta Analysis Version 2.2 to conduct the meta-analysis of effect sizes.

One problem in conducting meta-analyses in crime and justice is that investigators often do not prioritize outcomes examined. This is common in studies in the social

¹The following search terms were used: focused deterrence, deterring violent offenders, pulling levers AND police, problem-oriented policing, police AND repeat offenders, police AND gangs, police AND guns, gang violence prevention, strategic gang enforcement, crackdowns AND gangs, enforcement swamping, and drug market intervention.

²The following 15 databases were searched: Criminal Justice Periodical Index, Sociological Abstracts, Social Science Abstracts (SocialSciAbs), Social Science Citation Index, Arts and Humanities Search (AHSearch), Criminal Justice Abstracts, National Criminal Justice Reference Service (NCJRS) Abstracts, Educational Resources Information Clearinghouse (ERIC), Legal Resource Index, Dissertation Abstracts, Government Publications Office, Monthly Catalog (GPO Monthly), Google Scholar, Online Computer Library Center (OCLC) SearchFirst, CINCH data search, and C2 SPECTR (The Campbell Collaboration Social, Psychological, Educational and Criminological Trials Register).

³These journals were: *Criminology*, *Criminology & Public Policy*, *Justice Quarterly*, *Journal of Research in Crime and Delinquency*, *Journal of Criminal Justice*, *Police Quarterly*, *Policing*, *Police Practice and Research*, *British Journal of Criminology*, *Journal of Quantitative Criminology*, *Crime & Delinquency*, *Journal of Criminal Law and Criminology*, and *Policing and Society*. Hand searches covered 1979 to 2010.

⁴Ms. Phyllis Schultze of the Gottfredson Library at the Rutgers University School of Criminal Justice executed the initial abstract search and was consulted throughout on our search strategies.

sciences in which authors view good practice as demanding that all relevant outcomes be reported. However, the lack of prioritization of outcomes in a study raises the question of how to derive an overall effect of treatment. For example, the reporting of one significant result may reflect a type of “creaming” in which the authors focus on one significant finding and ignore the less positive results of other outcomes. But authors commonly view the presentation of multiple findings as a method for identifying the specific contexts in which the treatment is effective. When the number of such comparisons is small and therefore unlikely to affect the error rates for specific comparisons such an approach is often valid.

We analyze the studies using three approaches. The first is conservative in the sense that it combines all reported outcomes reported into an overall average effect size statistic. The second represents the largest effect reported in the studies and gives an upper bound to our findings. It is important to note that in some of the studies with more than one outcome reported, the largest outcome reflected what authors thought would be the most direct program effect. Finally, we present the smallest effect size for each study. This approach is the most conservative and likely underestimates the effect of focused deterrence on crime. We use it here primarily to provide a lower bound to our findings.

Findings

Search strategies in the systematic review process generate a large number of citations and abstracts for potentially relevant studies that must be closely screened to determine whether the studies meet the eligibility criteria (Farrington and Petrosino 2001). The screening process yields a much smaller pool of eligible studies for inclusion in the review. The four search strategies produced 2,473 distinct abstracts. The contents of these abstracts were reviewed for any suggestion of an evaluation of focused deterrence interventions. About 93 distinct abstracts were selected for closer review and the full-text reports, journal articles, and books for these abstracts were acquired and carefully assessed to determine whether the interventions involved focused

deterrence strategies and whether the studies used randomized controlled trial designs or nonrandomized quasi-experimental designs. Eleven eligible studies were identified and included in this review:

1. Operation Ceasefire in Boston, Massachusetts (Braga et al. 2001)
2. Indianapolis Violence Reduction Partnership in Indianapolis, Indiana (McGarrell et al. 2006)
3. Operation Peacekeeper in Stockton, California (Braga 2008b)
4. Project Safe Neighborhoods in Lowell, Massachusetts (Braga et al. 2008)
5. Cincinnati Initiative to Reduce Violence in Cincinnati, Ohio (Engel, Corsaro, and Skubak Tillyer 2010)
6. Operation Ceasefire in Newark, New Jersey (Boyle et al. 2010)
7. Operation Ceasefire in Los Angeles, California (Tita et al. 2004)
8. Project Safe Neighborhoods in Chicago, Illinois (Papachristos, Meares, and Fagan 2007)
9. Drug Market Intervention in Nashville, Tennessee (Corsaro and McGarrell 2009)
10. Drug Market Intervention in Rockford, Illinois (Corsaro, Brunson, and McGarrell Forthcoming)
11. Hawaii Opportunity with Probation Enforcement in Honolulu, Hawaii (Hawken and Kleiman 2009)

The 11 selected studies examined focused deterrence interventions that were implemented in small, medium, and large U.S. cities. Four of the eligible evaluations (Cincinnati, Honolulu, Nashville, and Newark) were not published at the time the review of abstracts was completed.⁵ All 11 evaluations were released after 2000 and 8 were completed after 2007. Six studies evaluated the crime reduction effects of focused deterrence strategies on serious violence generated by street gangs or criminally active

⁵During the development of this report, the Newark study was accepted for publication at *Justice Research and Policy* and the Nashville study was accepted for publication at *Evaluation Review*.

street groups (Boston, Cincinnati, Indianapolis, Los Angeles, Lowell, and Stockton). Two studies evaluated strategies focused on reducing crime driven by street-level drug markets (Nashville and Rockford), and three evaluated crime reduction strategies that were focused on individual repeat offenders (Chicago, Honolulu, and Newark).

Ten eligible studies used quasi-experimental designs to analyze the impact of focused deterrence strategies on crime. Seven evaluations used quasi-experimental designs with nonequivalent comparison groups (Boston, Cincinnati, Indianapolis, Lowell, Nashville, Rockford, and Stockton). The comparison units used in these evaluations were selected based on naturally occurring conditions, such as other cities or within-city areas that did not receive treatment, rather than through careful matching or randomization procedures to ensure comparability with treatment units. Two evaluations used quasi-experimental designs with near-equivalent comparison groups created through matching techniques (Chicago and Newark). The Los Angeles evaluation used a quasi-experimental design that included both nonequivalent and near-equivalent comparison groups; for the Los Angeles study, we included only the effects from the more rigorous matched comparison group analysis in our meta-analysis. Only one randomized controlled trial, the evaluation of the HOPE program in Honolulu, was identified. Table 1 provides a brief summary of the treatments, units of analysis, research designs, and results reported by the 11 eligible studies.

Three studies examined possible immediate spatial crime displacement and diffusion of crime control benefits that may have been generated by the focused deterrence interventions (Los Angeles, Nashville, and Newark). The Los Angeles study also examined the criminal behavior of rival gangs socially connected to the targeted gang. Only one study noted potential threats to the integrity of the treatment. Tita et al. (2004) reported that the Los Angeles intervention was not fully implemented as planned. The implementation of the Ceasefire program in the Boyle Heights neighborhood of Los Angeles was negatively affected by the well-known Ramparts LAPD police corruption scandal and a lack of ownership of the intervention by the participating agencies.

The basic findings of our review are very positive. Of the 11 eligible studies, 10 reported strong and statistically significant crime reductions associated with the approach. Nonetheless, we are concerned with the lack of rigorous

randomized experimental evaluations of this promising approach. While the biases in quasi-experimental research are not clear (e.g., Campbell and Boruch 1975; Wilkinson and Task Force on Statistical Inference 1999), recent reviews in crime and justice suggest that weaker research designs often lead to more positive outcomes (e.g., see Weisburd, Lum, and Petrosino 2001; Welsh et al. 2011). This does not mean that nonexperimental studies cannot be of high quality, but only that there is evidence that non-experimental designs in crime and justice are likely to overstate outcomes as contrasted with randomized experiments. In his review of situational crime prevention evaluations, Guerette (2009) finds that the conclusions of randomized evaluations were generally consistent with the majority conclusion of the nonrandomized evaluations. While our vote counting review is consistent with Guerette's (2009) conclusion, our calculated effect sizes reveal that less rigorous focused deterrence evaluation designs were associated with stronger reported effects. As such, we think that caution should be used in drawing conclusions regarding population effect sizes for the pulling levers intervention.

At the same time, the effects observed in the studies reviewed were often very large, and such effect sizes are evidenced as well in those studies using strong comparison groups (e.g., Papachristos et al. 2007) and in the sole randomized controlled trial (Hawken and Kleiman 2009). Our review provides strong empirical evidence for the crime prevention effectiveness of focused deterrence strategies. Even if we assume that the effects observed contain some degree of upward bias, it appears that the overall impact of such programs is noteworthy. These findings are certainly encouraging and point to the promises of this approach.

We certainly believe that the positive outcomes of the present studies indicate that additional experimental evaluations, however difficult and costly, are warranted. The potential barriers are real, especially in regard to identifying valid treatment and comparison areas. But existing evidence is strong enough to warrant a large investment in multisite experiments (Weisburd and Taxman 2000). Such experiments could solve the problem of small numbers of places in single jurisdictions and would also allow for examination of variation in effectiveness across contexts.

Despite our concerns over the lack of randomized experiments, we believe that the findings of eligible focused deterrence evaluations fit well within existing research suggesting that deterrence-based strategies, if applied correctly,

can reduce crime (Apel and Nagin 2011). The focused deterrence approach seems to have the desirable characteristic of altering offenders' perceptions of sanction risk. Our findings are also supported by the growing body of scientific evidence that suggests police departments, and their partners, can be effective in controlling specific crime problems when they engage a variety of partners, and tailor an array of tactics to address underlying criminogenic conditions and dynamics (Braga 2008a; Weisburd and Eck 2004). Indeed, our study suggests that Durlauf and Nagin (2011) are correct in their conclusion that imprisonment and crime can both be reduced through the noteworthy marginal deterrent effects generated by allocating police officers, and their criminal justice partners, in ways that heighten the perceived risk of apprehension.

While the results of this review are very supportive of deterrence principles, we believe that other complementary crime control mechanisms are at work in the focused deterrence strategies described here that need to be highlighted and better understood (see Weisburd 2011). In Durlauf and Nagin's (2011) article, the focus is on the possibilities for increasing perceived risk and deterrence by increasing police presence. Although this conclusion is warranted by the data and represents an important component of the causal mechanisms that have increased the effectiveness of focused deterrence strategies, we believe it misses an important part of the story. In the focused deterrence approach, the emphasis is not only on increasing the risk of offending but also on decreasing opportunity structures for violence, deflecting offenders away from crime, increasing the collective efficacy of communities, and increasing the legitimacy of police actions. Indeed, we suspect that the large effects we observe come precisely from the multifaceted ways in which this program influences criminals.

In closing, we think it is important to recognize that focused deterrence strategies are a very recent addition to the existing scholarly literature on crime control and prevention strategies. While the evaluation evidence needs to be strengthened and the theoretical underpinnings of the approach needs further refinement, we believe that jurisdictions suffering from gang violence, overt drug markets, and repeat offender problems should add focused deterrence strategies to their existing portfolio of prevention and control interventions. The existing evidence suggests these new approaches to crime prevention and control generate noteworthy crime reductions.

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REVIEW QUESTIONS

1. What do the authors mean by "focused deterrence" strategies?
2. What was the overall finding of this study regarding these strategies for reducing crime?
3. What are some of the concerns or issues with some of the studies used in this meta-analysis?



READING 5

This article uses the scenario design or vignettes to test the compatibility of rational choice theory with what has become the most researched and discussed theory of the last two decades: low self-control theory. Briefly mentioned in the introduction to this section, low self-control theory is a rather simple model that assumes (like other control theories, which we will cover in Section VIII) that all individuals are born with a propensity for crime and that children develop self-control through socialization and discipline. However, some children's parents do not do a good job at monitoring or training their children, so these children never develop self-control and, thus, engage in crime when opportunities present themselves. Alex Piquero and Stephen Tibbetts review other studies that have successfully merged rational choice theory with the low self-control model and then present a test of individuals' perceptions regarding two offenses that most college students are familiar with: drunk driving and shoplifting. As you read this study, try to relate the different theoretical concepts and types of offending to people you know.

Specifying the Direct and Indirect Effects of Low Self-Control and Situational Factors in Offenders' Decision Making Toward a More Complete Model of Rational Offending

Alex R. Piquero and Stephen G. Tibbetts

It has been argued that criminology is in a state of theoretical paralysis (Wellford 1989:119) and that its theoretical developments have stagnated (Gibbs 1987). Recently, however, theorizing in criminology has undergone two important advances. One of these was proposed by Michael Gottfredson and Travis Hirschi (1990) in *A General Theory of Crime*. Their theory concerns individual differences, or propensities, that predispose an individual toward offending; their central concept is that of low self-control. The other theoretical advancement is the rational choice perspective (Cornish and Clarke 1986, 1987). This framework emphasizes the contextual and situational factors involved in decisions to offend, as well as the “choice-structuring” properties of offenses (Cornish and Clarke 1987:935).

Low self-control is established early and remains relatively stable throughout life. This is a characteristic of individuals who are more likely than others to engage in imprudent behaviors such as smoking, drinking, or gambling and commit criminal offenses such as shoplifting or assault. Gottfredson and Hirschi (1990:89) characterize low self-control as composed of elements such as immediate gratification, risk taking, orientation to the present, acts involving little skill or planning, and self-centeredness.

The rational choice framework focuses on situational inducements and impediments to offending (Cornish and Clarke 1986, 1987; Nagin and Paternoster 1993) such as the perceived costs (e.g., threat of sanctions) and benefits (e.g., pleasure) of crime. The rational choice model is consistent

SOURCE: Alex R. Piquero and Stephen G. Tibbetts, “Specifying the Direct and Indirect Effects of Low Self-Control and Situational Factors in Decision Making: Toward a More Complete Model of Rational Offending,” *Justice Quarterly* 13 (3): 481–510. Copyright © 1996 Routledge. Reprinted with permission.

with a deterrence framework, especially in its focus on the perceived costs associated with committing an offense. It also includes the importance of examining an offender's perception of the benefits of offending and of informal and/or internal threats of sanction, which is absent from the traditional deterrence framework (Piliavin et al. 1986). Therefore the rational choice framework provides one way of looking at the influence of situational factors on offending. By the same token, this perspective is not confined to the situational determinants of (perceived) opportunity. Rational choice also examines how motivation is conditioned by situational influences and opportunities to commit crime.

Rational choice emphasizes would-be offenders' subjective perceptions of the expected rewards and costs associated with offending. From this perspective, a crime-specific focus is necessary because the costs and benefits of one crime may be quite different from those of another. This point suggests the importance of examining the choice-structuring properties of particular offenses (Cornish and Clarke 1987:935). Furthermore, the rational choice perspective suggests explanations in terms of those characteristics which promote or hinder gratification of needs, such as low self-control, shame, moral beliefs, threat of formal sanctions, or the pleasure of offending.

Situational factors and individual propensities are related to each other in a way suggested by Harold Grasmick and his colleagues. Grasmick et al. (1993b) noted that situational circumstances and individual characteristics may influence the extent to which low self-control affects criminal behavior. Thus the effect of low self-control depends on the situation; that is, low self-control may condition criminal behavior. Nagin and Paternoster (1993) have examined the compatibility of these perspectives. Using scenario data from a sample of college undergraduates, they found support for the underlying propensity (low self-control) argument advocated by Gottfredson and Hirschi, as well as some support for the effect of situational factors. Attractiveness of the crime target, ease of committing the crime with minimal risk, and perceptions of the costs and benefits of committing the crime were all related significantly to offending decisions. Their analysis, however, consisted solely of examining the direct effects of exogenous variables on the dependent variable (intentions to deviate).

Our analysis builds on Nagin and Paternoster's (1993) paper. We focus on specifying low self-control in an explicit

causal model while taking into account the situational factors associated with offending decisions. We believe that low self-control has a direct effect on intentions to deviate, but we also argue that low self-control has indirect effects on these intentions, which operate through a variety of situational factors. These indirect effects are an important step in understanding criminals' decision-making processes.

Whereas Gottfredson and Hirschi distinguish between crime and criminality, Birkbeck and LaFree (1993) argue that theories of crime (situational explanations) should be united with theories of criminality (stable propensities). In this paper, following suggestions emanating from the work of Birkbeck and LaFree (1993) and Nagin and Paternoster (1993), we merge theories of crime (situational factors measured by subjective perceptions) and theories of criminality (low self-control) into a more highly specified causal model of rational offending. We argue that offenders are rational decision makers who are affected by various factors. These factors include not only an individual propensity to offend (i.e., low self-control) but also situational inducements (such as the pleasure of committing the crime) and situational impediments to crime (e.g., sanction threats, shame).



Previous Research

Perceived Sanction Threats and Perceived Pleasure

Deterrence concepts have been modified and expanded (Cornish and Clarke 1986, 1987; Paternoster 1989; Piliavin et al. 1986; Stafford and Warr 1993; Williams and Hawkins 1986), and recent research conducted within the rational choice framework (Bachman, Paternoster, and Ward 1992; Klepper and Nagin 1989b; Nagin and Paternoster 1993), using factorial vignette surveys, has found support for perceptions of certainty and its negative effect on delinquent behavior. Given the consistency with which sanctions may deter certain individuals who commit certain crimes (Bachman et al. 1992; Klepper and Nagin 1989b; Nagin and Paternoster 1993; Smith and Gartin 1989), we contend that these factors are quite important in a general model of rational offending.

The rational choice framework has focused strongly on the pleasure of offending (Bachman et al. 1992; Nagin and Paternoster 1993; Piliavin et al. 1986). Most researchers

have found that the perceived benefits of criminal offending are important in a would-be offender's calculations, perhaps even more important than the estimated costs (Nagin and Paternoster 1993:482). The anticipated rewards or gains from offending may be more important than the potential costs to these individuals because the former are more immediate and more characteristic of risk taking and short-term gratification (Gottfredson and Hirschi 1990). Jack Katz (1988) argues that there are "seductions of crime," which result from the thrills and pleasures provided by committing criminal acts. Other research, however, suggests that seductions are influenced by several background factors including age, gender, and the strain associated with inadequate economic opportunities (McCarthy 1995). Almost all previous empirical tests of deterrence models neglected this beneficial dimension of offending; the few studies that have examined this construct find support for perceived pleasure (Nagin and Paternoster 1993; Piliavin et al. 1986).¹

Shame

Thomas Scheff (1988) labeled shame as an important factor for social control. Scheff's work was followed closely by John Braithwaite's (1989) *Crime, Shame, and Reintegration*, which caused an immediate increase in the attention given to shame in criminology. Early theorizing on shame, however, tended to focus on acts of shaming by others (e.g., disintegrative/reintegrative shaming) rather than on the internal emotion of shame felt by the individual. Therefore those theorists implied that to experience shame, one must be shamed by a social audience. This assumption is not supported by the psychological literature on shame; in fact, the early researchers in this area acknowledged that most experiences of shame are not preceded by an act of shaming (H. Lewis 1971; Piers and Singer 1953). Experiences of shame are the result of a global, internal evaluation of the self in which the actor temporarily loses some of his or her self-esteem (M. Lewis 1992). Although acts of shaming by others may elicit shame in an individual, such an act need not occur to cause the person to feel that emotion (M. Lewis 1992; Piers and Singer 1953). In other words, individuals can be shamed without the presence of an audience (see Grasmick and Bursik 1990).

Despite the lack of criminological theory on the phenomenological nature of shame, researchers recently have

attempted to measure the subjective experiences of shame within a rational choice framework. In these studies (Grasmick and Bursik 1990; Grasmick, Bursik, and Kinsey 1991; Grasmick et al. 1993b; Nagin and Paternoster 1993) respondents have been asked to describe the shame they felt, or would feel, if they had committed, or intended to commit, specific criminal offenses such as drunk driving, littering, date rape, tax evasion, or petty theft. Shame was found to have a strong inhibitory effect on the commission of all these offenses. Furthermore, for some of the offenses, shame had the strongest effect of all the variables specified in the model, including formal sanctions (Grasmick and Bursik 1990). Thus, a deterrent effect of shame seems to be strongly evident in the criminological literature.

Low Self-Control

Gottfredson and Hirschi (1990:90) contend that individuals with low self-control will tend to engage in criminal and analogous acts. Their ideas, which have met with some opposition (Akers 1991; Barlow 1991; Polk 1991), have generated a number of empirical studies (Benson and Moore 1992; Brownfield and Sorenson 1993; Gibbs and Giever 1995; Grasmick et al. 1993b; Keane, Maxim, and Teevan 1993; Nagin and Paternoster 1993; Polakowski 1994; Wood, Pfefferbaum, and Arneklev 1993). Although these studies generally support low self-control, some examination of this work is necessary. First, Grasmick et al. (1993b) developed a psychometric scale that measured low self-control, based on the criteria outlined by Gottfredson and Hirschi. The findings of their study, which examined only direct effects, indicated that low self-control was related strongly to offending (force and fraud). Keane et al. (1993) examined the relationship between low self-control and drinking and driving. Employing a behavioral measure of self-control (use of seat belts), they found that for both males and females, low self-control was an important predictor of driving under the influence of alcohol.

Gottfredson and Hirschi (1990:90) also believe that low self-control may manifest itself in various imprudent behaviors such as smoking, drinking, and gambling. Using the same data and measures as found in Grasmick et al. (1993b), Arneklev et al. (1993) tested this proposition. The results were mixed; on one hand, the low self-control index had a direct effect on an individual's participation in

various imprudent behaviors. Yet one component of that index (risk taking) was more strongly predictive than the scale as a whole. Furthermore, smoking appeared to be unaffected by low self-control.² Similarly, Wood et al. (1993) argued that although low self-control was a significant predictor of imprudent behaviors and some forms of delinquency, their results suggested that the low self-control measure, as well as the different dependent variables, should be disaggregated.

Gibbs and Giever (1995) examined the manifestations of low self-control on a sample of college undergraduates by creating an attitudinal measure of low self-control and examining its impact on two noncriminal behaviors, cutting class and alcohol consumption. They found that low self-control was the strongest predictor of these behaviors. Their study, however, did not include factors other than self-control, such as moral beliefs or perceived threat of sanctions.

Moral Beliefs and Prior Offending

In addition to the variables discussed above, we included two other variables in the model specification: moral beliefs and prior offending. Moral beliefs are necessary in the study of any rational choice framework because such beliefs impede criminal behavior; theorists have stressed the importance of internalized moral constraints (Bachman et al. 1992; Bishop 1984; Grasmick and Bursik 1990; Paternoster et al. 1983; Tittle 1977, 1980). We also included prior offending as a control variable because it could capture the influence of other sources of stable criminality (Nagin and Paternoster 1991, 1993).

Proposed Model

The proposed model assumes that a rational human actor with low self-control encounters situational factors which push him or her toward crime (pleasure of the offense) and/or away from crime (moral beliefs, perceived risk of sanctions, and situational shame). When the push toward crime is greater than the push away from crime, an individual is more likely to choose crime. This idea is summarized by Gottfredson and Hirschi (1990:89) when they observe that a major characteristic of those with low self-control is the tendency to respond to tangible stimuli

in the immediate environment and to have a concrete “here and now” orientation (also see Hirschi and Gottfredson 1993).

Although our theoretical model relies heavily on the most recent statement of control theory outlined by Gottfredson and Hirschi, it is not meant to downplay the importance of earlier control theorists, particularly Walter Reckless (1961; also see Toby 1957). In his seminal piece, Reckless noted that inner containment consists mainly of self-control, while outer containment represents the structural buffer in the person’s immediate social world which is able to hold him or her within bounds (Reckless 1961:44–45). Expanding upon the idea of outer containment, one could easily infer that sanctions, pleasure, and shame are structural buffers in an individual’s immediate social world. Moreover, Block and Flynn (1956:61) state that “there are many variables in the personality of the delinquent and the delinquency-producing situation itself which the investigators may not readily discern and which themselves may constitute the critical factors involved in the delinquent act.” Conceivably, then, one could argue that our theoretical model is a refinement, an extension, and an empirical test of Reckless’s theory and of Block and Flynn’s assertions (also see A. Cohen 1955).

Methods

We collected data through a self-administered questionnaire that presented respondents with a realistic scenario describing in detail the conditions in which an actor commits a crime. The respondents were told only that the actor committed the act, not whether he or she approved of the act. Thus we focus not on the hypothetical actor’s perceptions or approval of the act, but rather on the respondent’s perceptions and approval. The questions were designed to measure respondents’ perceptions of the costs and benefits of committing the offense described in the scenario, to estimate the probability that they would commit that offense, and to estimate the chance that their committing the offense would result in arrest and in exposure without arrest.

The scenario method differs from conventional data collection in perceptual social control/deterrence research in that it uses hypothetical, third-person scenarios of offending to elicit the dependent variable. This strategy has

been used successfully in recent research on rational choice (Bachman et al. 1992; Klepper and Nagin 1989a, 1989b; Nagin and Paternoster 1993). The primary weakness of this approach is that an expressed intention to offend is not synonymous with actual offending. Fishbein and Ajzen (1975), however, argue that a person's intention to perform a particular behavior should be highly correlated with the actual performance of that behavior.³ This proposition is supported empirically by Green (1989), whose two-wave panel design revealed a high correlation ($r = .85$) between intentions and actual performance of deviant behavior. In addition, Kim and Hunter's (1993) recent meta-analysis produced a strong relationship between attitude, intention, and behavior. In all, the scenario method is the best approach available because of its advantages, its realistic nature, and the specificity of the scenarios.⁴

The realistic and specific nature of the scenarios allows us to examine the effect of situational factors on both the intentions to offend and the anticipated risks and rewards of these behaviors. Without these contextual specifications, the respondents would impute their own details; such a situation would “undoubtedly vary across respondents and affect their responses” (Nagin and Paternoster 1993:474). Also, individuals may vary in their definition of illegal behavior. If these differences in definition vary systematically with responses measuring variables of interest, analysis of the effects of such variables on actual behavior may be misrepresented (Nagin and Paternoster 1993).

Another, perhaps more important advantage of the scenario method is its capacity to capture the “instantaneous” relationship between independent variables and the respondent's intentions to offend (Grasmick and Bursik 1990). Previous cross-sectional and panel studies on deterrence used measures of past behavior or behavior within waves to measure the dependent variable (e.g., Bishop 1984). Because perceptions of risk are unstable over time, however, this lagged type of measurement is not appropriate. These designs would tend to find lagged effects for independent variables that remained stable over time, such as moral beliefs, but no lagged effects for independent variables that are not stable, such as perceived of threats sanction (Grasmick and Bursik 1990). Therefore, because the scenario method permits the examination of “instantaneous” relationships, it is preferable to traditional designs.⁵

Sample and Scenario Design

Respondents were undergraduates at a major East Coast university, enrolled in several large introductory criminal justice courses in the fall 1993 semester. A total of 349 males and 293 females (642 in all) completed the questionnaire. Although participation was voluntary, only 4 percent of potential respondents refused to participate; given this small amount, analysis and conclusions appear not to be threatened by response bias. The respondents ranged in age from 17 to 35; the median age was 19. Because we selected introductory classes that fulfill general core requirements for the university curriculum, a substantial majority of students (69 percent) were not criminal justice majors and were currently in their freshman and sophomore years. In addition, questionnaires were administered during the second week of the semester. Therefore it is very unlikely that responses were biased by students' knowledge of deterrence or correctional concerns.⁶ Listwise deletion of missing cases resulted in a sample of 604.

The Scenarios

Under an adaptation of the factorial survey methodology developed by Rossi and Anderson (1982), each student was given two scenarios—drunk driving and shoplifting—to which to respond. All of the scenarios were framed in settings familiar to these college student respondents. Selected scenario conditions were varied experimentally across persons. Respondents were asked to estimate the probability that they would commit the act specified in the scenario, to predict the chance that their commission of the offense would result in arrest, and to answer questions designed to measure their perceptions of the costs and benefits of committing the offense described in the scenario. In the present analysis, then, all respondents receive the opportunity to commit the same crimes in the same setting.⁷

Measurement of Variables

Intentions to Deviate

Separate models are estimated for each type of offense. The dependent variable is the respondent's estimate of the chance that he or she will do what the character did in

the scenario. We measured intentions to offend on a scale from 0 (no chance at all) to 10 (100 percent chance). Responses were solicited for both the drunk driving (INTENTDD) and the shoplifting (INTENTSH) scenarios.

Shame

Shame is measured by two items following each scenario, which ask the respondent (1) “what is the chance” and (2) “how much of a problem” would loss of self-esteem be if he or she were to do what the actor in the scenario did, even if no one else found out. Responses to both of these items were measured on an 11-point scale (0 = no chance/no problem to 10 = 100 percent chance/very big problem). We computed shame (SHAME) by multiplying the responses of the two items; higher scores reflect a higher likelihood that the individual would feel shame if he or she were to commit the specified act.

Low Self-Control

We operationalized low self-control with a psychometric scale borrowed from Grasmick et al. (1993b), which includes 24 items intended to measure the six elements of low self-control.⁸ We coded these items on a five-point Likert-type scale (1 = never to 5 = very often) and created a composite measure of self-control (SELFCONT) by summing the responses across 24 items. High scores on the scale indicate low self-control. This instrument was used in two previous studies (Grasmick et al. 1993b; Nagin and Paternoster 1993), both of which provided strong reliability and validity support for the scale. The high estimated reliability coefficient ($\alpha = .84$) gave us confidence in the internal consistency of the scale. Furthermore, the factor loadings provided by a principal-components factor analysis were comparable to those reported by Grasmick et al. (1993b).

Perceived External Sanctions

Respondents were asked to estimate the chance of arrest (Pf : risk of formal discovery) and the chance that others would find out if they were not arrested (Pi : risk of informal discovery). To measure the perceptions of the implications of discovery, we asked respondents to estimate the probability that discovery by arrest or informal exposure would result in dismissal from the university (Pdf , Pdi), loss of respect by close friends (Pff , Pfi), loss of respect by parents

and relatives (Ppf , Ppi), and diminished job prospects (Pjf , Pji). Each of these perceptual measures is intended to measure the risks of informal sanctions that may threaten an individual’s “stake in conformity,” or bonding to the moral order. To measure the perceived risk of formal sanctions, we asked respondents to estimate the risk of jail ($Pjaf$). The drunk-driving scenario was followed by an additional item measuring the perceived chance of losing one’s driver’s license (Plf) if an arrest was made. All responses were measured on an 11-point scale (0 = no chance at all to 10 = 100 percent chance).

These measures of risk probably would have little effect on intentions unless associated with perceptions of some cost (Grasmick and Bursik 1990). Thus we asked respondents to estimate the perceived severity of each sanction. Specifically, we asked each subject to estimate “how much of a problem” each sanction would pose for them. All responses were measured on an 11-point scale (0 = no problem at all to 10 = a very big problem). To create the composite scale of perceived external sanctions, we multiplied each risk-perception response by the corresponding severity-perception response. Then we summed these separately for drunk driving and for shoplifting (PEREXSAN); higher scores on the scale correspond to a high degree of perceived risk and cost of performing the act in question for that individual. We used the following formula:

$$\text{PEREXSAN} = \text{Pi} [(Pdi) (Sd) + (Pfi) (Sf) + (Ppi) (Sp) + (Pji) (Sj)] + \text{Pf} [(Pdf) (Sd) + (Pff) (Sf) + (Ppf) (Sp) + (Pjf) (Sj) + (Plf) (SI) + (Pjaf) (Sja)]$$

where Sd equals the perceived severity of sanction d (dismissal from university) and all other variables are as defined previously.

Moral Beliefs

To measure the perceived immorality of the behavior, we asked respondents to estimate how morally wrong they thought the incident would be if they were to commit drunk driving and shoplifting (MORALS). Response options varied on an 11-point scale (0 = not morally wrong at all to 10 = very morally wrong). Although some may contend that our respondents may not regard the behaviors under study as criminal or morally wrong, the mean moral

value was 7.80 against drunk driving and 7.57 against shoplifting. These findings indicate that most of our respondents perceive even these behaviors as morally wrong.

Perceived Pleasure

To measure perceived pleasure, a single item asked respondents to estimate “how much fun or kick” it would be to commit drunk driving and shoplifting under the conditions specified in the scenarios (PLEASURE). Responses varied on an 11-point scale (0 = no fun or kick at all to 10 = a great deal of fun or kick).

Prior Offending

In addition to the variables discussed above, we included prior offending as a control in the model. We did so to capture the influence of sources of stable criminality extraneous to that of persistent individual differences due to personality traits included in the model (such as low self-control). To measure prior offending (PRIOROFF), we included two items (one for each scenario offense) that asked the respondents how many times in the past year they had driven while drunk and how many times they had shoplifted.⁹

Hypotheses

In this paper we postulate and examine three hypotheses:

H₁: Low self-control has both direct and indirect effects via situational factors on intentions to deviate;

H₂: Situational characteristics have both direct and indirect effects on intentions to deviate and on other situational variables;

H₃: The model uniting the effects of low self-control and situational characteristics of crime will provide a good fit to the data.¹⁰

Analysis of Shoplifting

According to Hypothesis 1, low self-control will have a direct effect on intentions to deviate and indirect effects on intentions to deviate through situational factors. Significant maximum-likelihood estimates for shoplifting may be found in Table 1 and Figure 1. Of the four paths estimated for low self-control, three are significant. Low self-control has a direct positive effect ($b = .153, t = 4.438$) on intentions to shoplift and a direct positive effect ($b = .178, t = 4.502$) on perceived pleasure, an indication that the higher one scores on the low self-control scale, the more likely one is to intend to shoplift and to perceive pleasure from shoplifting. Low self-control has a direct negative effect ($b = -.102, t = -2.889$) on shame, indicating that the higher one scores on the low self-control scale, the less likely one is to experience shame due to shoplifting. The only insignificant effect is the effect of low self-control on perceived risk of sanctions.

Therefore, low self-control not only has a direct effect on intentions to shoplift; it also indirectly affects intentions to shoplift through situational variables (pleasure and shame). These results are consistent with Gottfredson and

Table 1 Significant Full-Information Maximum-Likelihood Estimates for Intentions to Shoplift (N = 604)

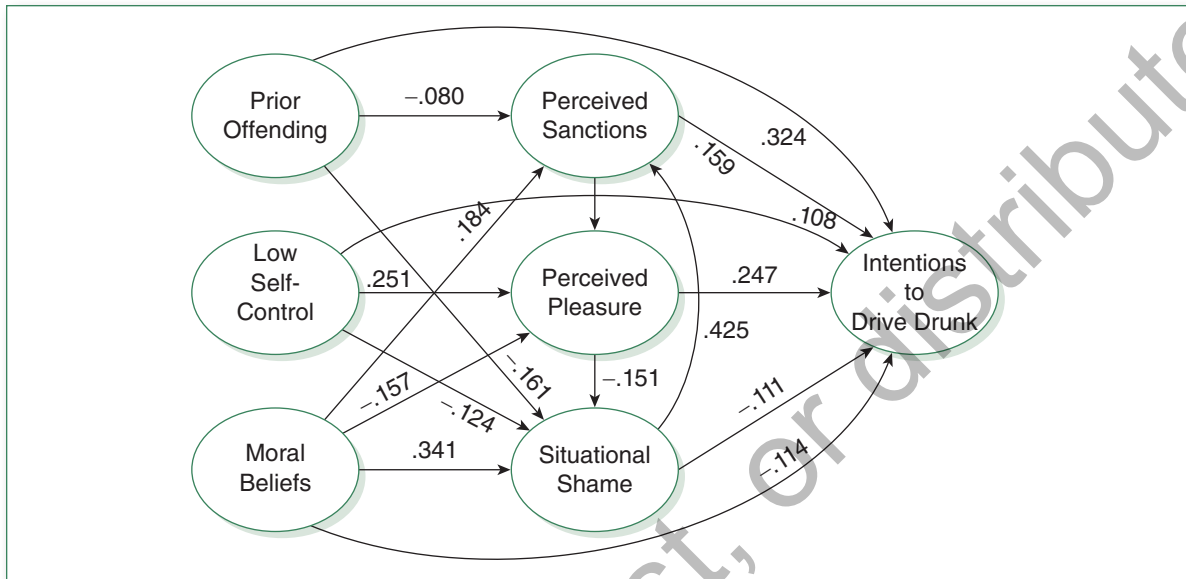
Dependent Variables	Independent Variables					
	Shame	Perceived Sanctions	Perceived Pleasure	Moral Beliefs	Prior Offending	Low Self-Control
Intentions to Shoplift	-.214	^a	.220	-.186	.176	.153
Shame	— ^b	—	-.173	.483	— ^a	-.102
Perceived Sanctions	.434	—	— ^b	.117	— ^a	— ^a
Perceived Pleasure	— ^b	.153	— ^b	-.267	.169	.178

NOTE: LISREL shows the effects of columns on rows.

a. Path estimated but not significant.

b. Path not established.

Figure 1



Hirschi's (1990:95) idea that individuals with low self-control will be less likely to consider the consequences of offending.

Hypothesis 2 indicates that situational characteristics should have direct effects on intentions to shoplift and indirect effects on intentions to shoplift which operate through other situational factors. With the exception of perceived sanctions, both shame ($b = -.214$, $t = -5.372$) and perceived pleasure ($b = .220$, $t = 6.270$) have the expected effects on intentions to shoplift. The null results for perceived sanctions are not surprising: Shoplifting is a very common crime and one that can be committed with relative impunity; thus an individual's perception of being caught would likely not be salient.

As for the other effects, shame ($b = .434$, $t = 9.745$) has a positive effect on perceived sanctions, indicating that the more likely one is to perceive shame, the more likely one is to perceive the threat of sanctions as salient. Even though perceived sanctions do not affect intentions to shoplift, they affect perceived pleasure in a rather interesting manner: Perceived sanctions have a positive effect ($b = .153$, $t = 3.398$) on perceived pleasure, in keeping with Katz's (1988) notion of "sneaky thrills." It appears that among our respondents, the more one perceives the risk of sanctions

as high, the more pleasure one perceives from shoplifting. Finally, perceived pleasure has a negative effect on shame ($b = -.173$, $t = -4.468$): The more one perceives pleasure from shoplifting, the less likely one is to feel shame.

Other effects include those of the other two exogenous variables, prior offending and moral beliefs. Prior offending has positive effects on intentions to shoplift ($b = .176$, $t = 5.322$) and on perceived pleasure ($b = .169$, $t = 4.421$), indicating that the more times respondents have shoplifted in the past, the more likely they are to intend to shoplift and to perceive pleasure from shoplifting. Prior behavior does not exert an effect on perceived sanctions. Moral beliefs are the only exogenous variable to be significant and consistent with all effects as predicted. Moral beliefs have the predicted negative effects on intentions to shoplift ($b = -.186$, $t = -4.669$) and on perceived pleasure ($b = -.267$, $t = -6.287$), indicating that the stronger one's moral beliefs against shoplifting, the less likely one is to intend to shoplift or to perceive pleasure from shoplifting. Likewise, moral beliefs have the predicted positive effects on shame ($b = .483$, $t = 13.599$) and on perceived sanctions ($b = .117$, $t = 2.691$), indicating that the stronger one's moral beliefs, the more likely one is to perceive shame and sanctions as important.

To test the third hypothesis, we constructed a model that united the effects of low self-control and of situational characteristics. To determine whether the proposed model fit the data adequately, we examined the chi-square statistic of the model. Because chi-square is sensitive to sample size and to departures from normality in the data, there are alternative methods for assessing the goodness of fit of a model; one such method is the ratio of chi-square to degrees of freedom. Smith and Patterson (1985) suggest that values of 5 or less indicate an adequate fit. For this model the value is 1.01 (4.05/4), indicating an adequate fit to the data.

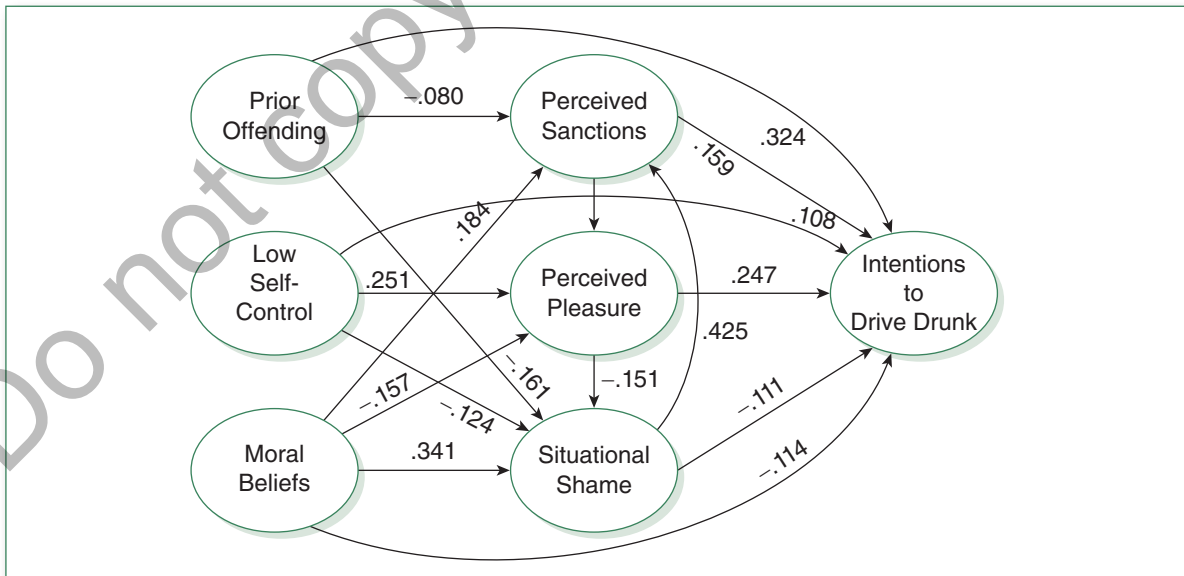
Analysis of Drunk Driving

The significant maximum-likelihood estimates for drunk driving are shown in Table 2 and Figure 2. For low self-control, three of the four effects are significant. Low self-control has direct positive effects on intentions to drive drunk ($b = .108, t = 3.167$) and on perceived pleasure ($b = .251, t = 6.308$), indicating that the higher one scores on the low self-control scale, the more likely one is to intend to drive drunk and to perceive pleasure from drunk

driving. Low self-control exerts a negative effect on shame ($b = -.124, t = -3.257$), indicating that persons with low self-control are less likely to feel shame. As in the analysis of shoplifting, the effect of low self-control on perceived sanctions is insignificant.

All three situational factors have the expected effects on intentions to drive drunk. Shame ($b = -.111, t = -2.796$) and perceived sanctions ($b = -.159, t = -4.219$) exert the expected negative effects on intentions to drink and drive, indicating that the more one perceives sanction threats and shame as important, the less likely one is to intend to drive drunk.¹¹ Perceived pleasure has the expected positive effect ($b = .247, t = 7.313$) on intentions to drive drunk, indicating that the more pleasure one perceives from drunk driving, the more likely one is to intend to drive drunk. Other effects for perceived pleasure include a negative effect on shame ($b = -.151, t = -4.057$), indicating that the more pleasure one obtains from drinking and driving, the less likely one is to lose self-esteem. Shame has a positive effect ($b = .425, t = 11.123$) on perceived sanctions, indicating that the more one perceives shame as salient, the more likely one is to perceive sanction threats as also important.

Figure 2



Effects of the other two exogenous variables (prior offending and moral beliefs) are largely as expected. Prior offending has a negative effect on shame ($b = -.161$, $t = -4.498$) and on perceived sanctions ($b = -.080$, $t = -2.295$), indicating that the more one has driven drunk in the past, the less likely one is to feel shame and to perceive sanctions as important. In addition, prior offending has a positive effect on intentions to drive drunk ($b = .324$, $t = 9.946$), which indicates that the more one has driven drunk in the past, the more likely one is to intend to drive drunk. Prior offending has no effect on the perceived pleasure of drunk driving.

All four moral belief effects are significant. Moral beliefs have negative effects on intentions to drink and drive ($b = -.114$, $t = -3.177$) and on perceived pleasure ($b = -.157$, $t = -3.959$), indicating that the stronger one's moral beliefs are against drunk driving, the less likely one is to intend to drive drunk and the less likely one is to derive pleasure from drinking and driving. Moral beliefs also have positive effects on shame ($b = .341$, $t = 9.269$) and on perceived sanctions ($b = .184$, $t = 4.925$), indicating that the stronger one's moral beliefs are, the more likely one is to experience shame and to perceive sanctions as important.

Results concerning Hypothesis 3 in regard to drinking and driving are similar to those for shoplifting. To determine whether the model constructed for drunk driving fit the data adequately, we performed the same two tests as we conducted for shoplifting. The first test

examined the ratio of chi-square to degrees of freedom. Values of less than 5 indicate an adequate fit to the data: our value was .33 (1.00/3).

Conclusion

Building on the early work of Nagin and Paternoster (1993), we set out here to combine two different paths in theoretical criminology into a more complete model of offending. One path attributes crime to individual differences that are established early in life, specifically in low self-control. According to the second path, crime is the result of situational factors associated with criminal offending, such as the perceived costs and benefits of crime. As observed by Nagin and Paternoster (1993:489), these two paths have been explored separately rather than in conjunction. On the basis of our analysis, we find support for a model that integrates these two paths. The model holds after controlling for several important factors and performs well in two different tests designed to measure the fit of the model to the data.

Aside from delineating and testing a more complete model of rational offending, this paper represents the first attempt to examine the indirect effects of low self-control. This attempt is especially important because previous research in low self-control examined only the direct effects of low self-control and rational choice characteristics (Grasmick et al. 1993b; Nagin and Paternoster 1993).

Table 2 Significant Full-Information Maximum-Likelihood Estimate for Intention to Drive Drunk (N = 604)

Dependent Variables	Independent Variables					
	Shame	Perceived Sanctions	Perceived Pleasure	Moral Beliefs	Prior Offending	Low Self-Control
Intentions to Drive Drunk	-.111	-.159	.247	-.114	.324	.108
Shame	— ^b	— ^b	-.151	.341	-.161	-.124
Perceived Sanctions	.425	— ^b	— ^b	.184	-.080	— ^a
Perceived Pleasure	— ^b	— ^a	— ^b	-.157	— ^a	.251

NOTE: LISREL shows the effects of columns on rows.

a. Path estimated but not significant.

b. Path not established.

Of all our findings, the indirect effects of low self-control were the most interesting. In fact, these effects were more complex than we had imagined originally. We found that low self-control had similar effects on shame and perceived pleasure across offenses, but exerted no effect on perceived sanctions in either scenario. Modeling indirect effects of low self-control is a difficult task, which we undertook with almost no previous theoretical guidance. Such effects probably depend on the offense, but currently we have too little information about the indirect effects of low self-control on offending. Additional theoretical work and further modeling of the total effects are priorities in self-control research.

The model we have presented here may be extended in the following ways. First, we would like to see future studies examine a wide array of criminal and deviant behaviors, such as drug use, sexual assault, burglary, and robbery. Insofar as Gottfredson and Hirschi are correct, low self-control should be related to all types of criminal and deviant behaviors. Second, many variables could be interchanged with and/or added to our list of situational variables. We contend that because different offenses require different situational characteristics and circumstances, these mediating factors may change in type—but they will be situational factors nonetheless. For example, an examination of marijuana use may require inclusion of a situational variable such as the ease of obtaining marijuana, whereas an examination of breaking and entering would require situational characteristics such as the lack of capable guardians, lack of a security system, and the time of day or night. Still other examples of situational variables would include peer delinquency and peer associations. Because delinquency is overwhelmingly a group phenomenon (Reiss 1986), inclusion of such a measure has the potential to enhance the predictability of our model. This discussion should make apparent that although situational characteristics may vary in type depending on the crime, the framework of the model will remain the same: Time-stable variables such as low self-control will always precede and influence the situational variables.

Because of the lack of significant findings from Nagin and Paternoster's (1993) vignettes of these conditions, we did not vary these situational characteristics.

2. This result may be due to the average age of the sample (46.5 years). It could be that these individuals began to smoke before the effects of smoking were known to be undesirable (Arneklev et al. 1993).

3. Fishbein and Ajzen (1975) identify three criteria for maximizing the correspondence between intentions and actual behavior. The first of these criteria is the degree to which the intentions are measured with the same specificity as the behavior that is being predicted. The scenarios presented here include highly specific circumstances, (see). The second criterion is the stability of the expressed intention. In view of the realistic and specific conditions of the scenarios, there is no compelling reason to question the stability of these intentions. The final criterion is the degree to which the respondent can willfully carry out the intention.

4. Our scenarios were designed after those used by Nagin and Paternoster (1993) in regard to detail and contextual specificity. We achieved specificity by presenting details of the circumstance of the offense, such as naming the bar where the actor is drinking or the type of item the actor is shoplifting. The scenario approach has been used as well in research on death penalty juries (Bohm 1991).

5. We systematically varied the location of the intention questions for both the drunk driving and the shoplifting scenarios. In approximately half of these scenarios, the dependent variable item was placed directly after the scenario; other perceptual items (e.g., moral beliefs, perceived certainty) followed (this position was coded 0). In the other half, the dependent variable was located at the end of the battery of perceptual items (this position was coded 1). We adopted this procedure to examine for possible differences due to responses on the dependent variable item affecting the responses on the subsequent perceptual items. For instance, if the dependent variable item is placed directly after the scenario, the respondents may base their perceptions on their previous response to the dependent variable item. In contrast if the dependent variable item is placed after the perceptual items, respondents may respond differently on the dependent variable item if they have thought carefully about their perceptions regarding the offense. Bivariate correlations showed that the location of the dependent variable item did not have a significant effect on respondents' intentions to commit drunk driving or to shoplift ($r = .06$ and $-.05$, respectively). Therefore, we did not include this variable in the multivariate analyses.

Notes

1. Some may argue that the pleasure associated with offending is only part of the story, and that often the more important situational factors are the amount of time and energy saved (as in drunk driving) and the value of goods stolen (as in shoplifting).

6. The use of convenience samples in deterrence research is questionable and has drawn some criticism (Jensen, Erickson, and Gibbs 1978; Williams and Hawkins 1986). The major objection is that of representativeness. Large public universities, however, contain a moderate number of marginal offenders (Matza 1964), particularly for the kinds of offenses that are the focus of this study. In our data, 44 percent of respondents admit to having committed drunk driving in the past year (17 percent committed shoplifting in the past year). Furthermore, a Bureau of Justice Statistics Report (R. Cohen 1992) reveals that the rate of arrest for driving while under the influence of alcohol (DUI) is highest for persons between ages 21 and 24. Those in the 18–20 age range have the second-highest arrest rate for DUI. Also, a survey of 1,287 university students conducted in 1991 revealed that almost one-half were regular users of alcohol; 45 percent of these reported consuming four or more drinks at a time, and more than half reported driving within an hour after consuming their last drink (Kuhn 1992). When subjects in our sample were asked the likelihood of drinking and driving under the conditions of the scenario presented to them, only 33 percent reported “no chance.” Shoplifting also has been shown to be quite common among young adults (Empey and Stafford 1991); self-reports show that shoplifting is about as common as drinking (Elliott, et al. 1983; Hindelang, Hirschi, and Weis 1981). When subjects in our sample were asked the likelihood of committing shoplifting under the conditions of the scenario presented to them, only 37 percent reported “no chance.” In addition, arrests for theft reported by the university police department totaled 1,267 for 1992; an overwhelming number of these crimes were committed by students. Given this information, one can conclude that college student populations contain frequent offenders in situations involving drunk driving and shoplifting; thus college samples are appealing for studies such as this.

7. We varied the level of risk of exposure (informal and formal) in both the shoplifting and the drunk driving scenarios. Preliminary analysis revealed no effect for these scenario-varied conditions; as a result, they were not estimated in the LISREL equations. Furthermore, we used gender as a control variable in preliminary analyses. After controlling for low self-control, the effect of gender was not significant in predicting intentions to either shoplift or drive drunk. In addition, gender had no significant effect on the other exogenous variables. Thus we did not examine gender in the LISREL models. These results confirm Gottfredson and Hirschi’s (1990:144–49) predictions concerning gender, low self-control, and crime and they are consistent with previous research regarding similarity between males and females

in offending behavior regarding shoplifting and drunk driving (Grasmick, Bursik, and Arneklev 1993a; Hindelang et al. 1981; Keane et al. 1993; Nagin and Paternoster 1993; Yu, Essex, and Williford 1992).

8. Persons interested in obtaining a copy of the low self-control scale can write to us or consult Grasmick et al. (1993b) or Nagin and Paternoster (1993).

9. In the models that follow, when we investigate intentions to drive drunk, we use a past behavior measure: the number of times in the past year the respondent has driven drunk. Similarly, when we examine intentions to shoplift, we use a past behavior measure of respondent’s previous shoplifting. An anonymous reviewer observed correctly that a situational variable from the perspective of rational choice theory may be a dispositional variable from the perspective of self-control theory, such that one can use the drunk driving (past behavior) variables to predict shoplifting and can use the shoplifting (past behavior) variables to predict drunk driving. Insofar as dispositions rather than situations are at work, the results should be largely the same in either case. For the sake of brevity and because it is not the focus of the present analysis, we did not examine this issue here. We plan on assessing this issue, however, in future work with these data.

10. To examine the validity of this hypothesis, the LISREL computer program provides a chi-square statistic that estimates the goodness of fit of the model.

11. This is the only effect for perceived sanctions and differs from the results for shoplifting. The sanction effects for drunk driving appear to be direct—not indirect, as they were for shoplifting—perhaps because of recent moral campaigns targeting drunk driving and because of the harshness of penalties that are reported by the media. This result is consistent with recent research concerning perceived sanctions on drunk driving (Grasmick et al. 1993a; Nagin and Paternoster 1993).



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REVIEW QUESTIONS

1. What are some of the elements of the low self-control personality?
2. What do Piquero and Tibbetts say are some of the key concepts of the rational choice framework that go beyond traditional deterrence concepts? Which of these concepts were most supported by their own findings?
3. What finding do Piquero and Tibbetts claim is the "most interesting"?

READING 6

This empirical study on "hot spots" by Lawrence Sherman, Patrick Gartin, and Michael Buerger is generally considered one of the contemporary classics in the literature, perhaps due to its being one of the first tests of routine activities theory to use spatial data, as measured by crime distribution by location of the crime, as opposed to individual or family victimization data.¹ Using data for a single year from Minneapolis, Minnesota, this study found that some locations—both businesses and residences—are responsible for many hundreds of calls for police each year. On the other hand, the vast majority of locations place no calls to police at all. Routine activities theory helps provide a framework for explaining this nonrandom distribution of criminal activity. While reading this selection, consider the place where you grew up or live in now and see if the findings of this study fit with the "hot spots" there.

¹Cohen and Felson, "Social Change."

Hot Spots of Predatory Crime

Routine Activities and the Criminology of Place

Lawrence W. Sherman, Patrick R. Gartin, and Michael E. Buerger

Is crime distributed randomly in space? There is much evidence that it is not. Yet there are many who suggest that it is. In a leading treatise on police innovations, for example, Skolnick and Bayley (1986: 1) observe that “we feel trapped in an environment that is like a mad-house of unpredictable violence and Quixotic threat.” People victimized by crime near their homes often feel that there are no safe places and that danger lurks everywhere (Silberman, 1978: 15–16). Even many police we know, who acknowledge that some areas are more dangerous than others, often assume a random distribution of crime within areas. For them, the practical question is not whether crime is concentrated in space, but how much.

Such analysis of variation across space is one of the basic tools of science. Many clues to the environmental causes of cancer, for example, have been revealed by the discovery of carcinogenic “hot spots”: locations with extremely high rates of cancer mortality (Mason et al., 1985). Similarly, many factors associated with automobile fatalities (such as low population density and distance from emergency medicine) have been highlighted by the discovery of rural western counties with death rates 350 times higher than those in such eastern states as New Jersey (Baker, Whitfield, and O’Neill 1987). The methodological history of such analyses can be traced to the moral statistics tradition (Guerry, 1831; Quetelet, 1842) and the sociology of crime and deviance, which pioneered the analysis of variation in behavior across space. Durkheim’s *Suicide* (1897/1951) and Shaw et al.’s *Delinquency Areas* (1929) are two classic examples. More recently, sociologists have tested income inequality and other structural theories of crime with variation in crime rates across collectivities, at the levels of nation-states (e.g., Krahn, Hartnagel, and Gartrell, 1986; Messner, 1980), regions (e.g., Gastil, 1971; Loftin and

Hill, 1974; Messner, 1983), and cities or metropolitan areas (e.g., Blau and Blau, 1982; Messner, 1982; Sampson, 1986).



Collectivities, Communities, and Places

A common problem of spatial analysis is pinpointing the locations of events. The ecological tradition in criminology has been confined to relatively large aggregations of people and space, which may mask important variation and causal properties within those aggregations. This may be especially important for within-city spatial variation.

Unlike the boundaries of nation-states and cities, the boundaries of within-city crime reporting districts do not correspond to theoretically or empirically defined collectivities, such as local communities or ethnic areas (Reiss, 1986: 26). Nor, as Reiss (1986) also points out, do official statistics on communities include many of the variables on collectivity characteristics needed to test theories of crime. The inability of community data to measure those characteristics creates major problems for community crime research (just as it does for this analysis) and leaves it vulnerable to what one sympathetic observer describes as a claim that there is little more here than “a theoretical exercise in the mapping of criminal phenomena” (Bursik, 1986: 36).

Even if collectivity characteristics can be measured at the level of community areas, those characteristics may have very different meanings and causal properties at the level of places. An independent variable like per capita alcohol consumption per hour, for example, means something very different at the street-corner level than it does at a 2-mile-square neighborhood level. It is clearly subject to a much wider range at the place level than it is at greater

SOURCE: Adapted from Lawrence Sherman, Patrick Gartin, and Michael Buerger, “Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place,” *Criminology* 27 (1989): 27–56. Reprinted by permission of the American Society of Criminology.

aggregations, with all of the effects of higher levels of consumption being concentrated on behavior in that microsocial space. Focusing on variation across smaller spaces opens up a new level of analysis that can absorb many variables that have previously been shunned as too obvious or not sufficiently sociological: the visibility of cash registers from the street, the availability of public restrooms, the readiness of landlords to evict problem tenants.

The increased range of such independent variables at a micro-place level also means that variation in crime within communities is probably greater than variations across communities (Robinson, 1950). The very meaning of the concept of a bad neighborhood is an open empirical question: whether the risk of crime is randomly or evenly distributed throughout the neighborhood, or so concentrated in some parts of the neighborhood that other parts are relatively safe.

Some recent policy research hints at the latter answer. Taylor and Gottfredson (1986: 410) conclude that there is evidence linking spatial variation in crime to the physical and social environment at the subneighborhood level of street blocks and multiple dwellings (e.g., Jacobs, 1961; Newman, 1972; Newman and Franck, 1980, 1982; but see Merry, 1981a, 1981b). Some 40 years ago, Henry McKay himself made the unpublished discovery that even within high-crime Chicago neighborhoods, entire blocks were free of offenders (Albert J. Reiss, Jr., personal communication).

Other findings suggest microlevel variation within blocks for the predatory stranger crimes of burglary, robbery, and auto theft. Salt Lake City houses with well-tended hedges were found to be less likely than other houses in the same neighborhood to be burglarized (Brown, 1983). Tallahassee apartments near the complex entrance and not facing another building were more likely to be burglarized than apartments inside the development facing other buildings (Molumby, 1976). And apartments in buildings with doormen were also less likely to be burglarized than other apartments (Repetto, 1974; Waller and Okihiro, 1978).

Microspatial variations in robbery rates also suggest nonrandom distributions. Convenience stores near vacant land or away from other places of commerce were more likely to be robbed than those in dense commercial areas (Duffala, 1976). Over a 5-year period in Gainesville, Florida, 96% of all 47 convenience stores were robbed, compared with 36% of the 67 fast-food establishments, 21% of

the 71 gas stations, and 16% of the 44 liquor stores (Clifton, 1987). Conversely, over a 10-year period in Texas, gas station workers were murdered at a rate of 14.2 per 100,000 workers per year, compared with a rate of 11.9 for convenience-type store workers and 5.1 per 100,000 per year for all retail workers (Davis, 1987). Tallahassee convenience stores with the cashier visibly stationed in the middle of the store were three times more likely to have a low robbery rate as stores with the cashier set less visibly off to the side (Jeffery, Hunter, and Griswold, 1987). Convenience stores with two clerks on duty may be less likely to be robbed than stores with only one (Clifton, 1987; Jeffery et al., 1987; but see Chambers, 1988).

Similar microspatial findings are reported in England. English parking lots with attendants had lower rates of auto theft than unattended parking lots (Clarke, 1983: 239). Pedestrian tunnels in downtown Birmingham, England, accounted for a negligible portion of all public space, but they produced 13% of a sample of 552 criminal attacks on persons (Poyner, 1983: 85).

Traditional collectivity theories may be appropriate for explaining community-level variation, but they seem inappropriate for small, publicly visible places with highly transient populations. Nor is it necessary to give up the explanatory task to the competing perspectives of rational choice (Cornish and Clarke, 1986) and environmental design (Jeffery, 1971; Newman, 1972). A leading recent sociological theory can address these findings, but only with a clearer definition of its unit of analysis. The routine activities approach of Cohen and Felson (1979) can be used to develop a criminology of *places*, rather than its previous restrictions to a criminology of *collectivities* or of the life-styles of victimized *individuals* (Hindelang, Gottfredson, and Garofalo, 1978; Messner and Tardiff, 1985; Miethe et al., 1987) and *households* (Massey, Krohn, and Bonati, 1987).

Routine Activities and Place

In their original statement of the routine activities approach, Cohen and Felson (1979: 589) attempt to account for “direct contact predatory violations,” or illegal acts in which “someone definitely and intentionally takes or damages the person or property of another” (Glaser, 1971: 4). They propose that the rate at which such events occur in collectivities is affected by “the convergence in space and time of the

three minimal elements of direct-contact predatory violations: (1) motivated offenders, (2) suitable targets, and (3) the absence of capable guardians against a violation” (Cohen and Felson, 1979: 589).

Data Collection

Unfortunately, few if any police departments can provide researchers, or even police chiefs, with a year-long call data base ready to analyze. Computer-aided dispatch systems are designed for operational purposes, so they do not have large storage capacities. The Minneapolis system, for example, can store only about 7,000 call records on line, so the calls must be removed from the mainframe computer about once a week and stored on tape. To construct a single data file for police calls covering 1 year or longer, researchers must generally provide their own computer into which the police backup tapes are read.

Using that procedure in Minneapolis, selected data elements from each complete call record were read from all the available tapes covering the period from December 15, 1985, to December 15, 1986. Missing data were discovered for 28 days, distributed throughout the year in four blocks of about 7 days each. A total of 323,979 call records were copied into a microcomputer, after fire, ambulance, and administrative record calls from police (e.g., out to lunch) were deleted. The findings presented below are derived from those data as well as from a less precise estimate of the number of street addresses and intersections in the city.

Hot Spots of Crime

The analysis reveals substantial concentrations of all police calls, and especially calls for predatory crime, in relatively few “hot spots.” Just over half (50.4%) of all calls to the police for which cars were dispatched went to a mere 3.3% of all addresses and intersections. A majority (60%) of all addresses generated at least one call over the course of the year, but about half of those addresses produced one call and no more. The top 5% of all locations generated an average of 24 calls each, or 1 every 2 weeks.

The number of calls per location ranged as high as 810 at a large discount store near a poor neighborhood, followed by 686 calls at a large department store, 607 calls at a corner with a 24-hours-a-day convenience store and a

bar, and 479 calls at a public housing apartment building (data not displayed). To test the premise that these concentrations are not merely random clusters, we calculated a simple Poisson model of the expected frequency of locations with each level of call volume. The simple Poisson model assumes that (1) the probability of a dispatched call to police is the same for all places and (2) the probability of a call does not depend on the number of previous calls (Nelson, 1980). For a sample of 115,000 places, the frequencies of repeat calls expected by chance are significantly lower than the observed frequencies, with a maximum of 13 calls expected (and 810 observed) at any one location.

Our findings must be interpreted with great caution, largely because of the enormous heterogeneity across places of both the size of the population and the periods of time at risk. The wide range of risk levels is suggested by capsule qualitative descriptions of the places with highest raw frequencies of predatory crime calls, presented in Table 1.

The nonrandom distribution of crime by place may simply be due to the nonrandom distribution of people. Geographers have long recognized the day-to-day clustering of people residing over a wide area into small “nodes” of activity (Brantingham and Brantingham, 1984: 235). If crime is concentrated in direct proportion to the concentration of people, then there may be nothing particularly criminogenic about those places. It may make sense for police to concentrate their efforts at those nodes, as an experiment in Minneapolis is now attempting to do (Sherman and Weisburd, 1988), but there is no increased per capita risk of crime for people to worry about or for theory to explain.

Two cases in point illustrate the population issue. A Dallas hotel we analyzed looked much like the worst hot spots in Minneapolis. It had a high place rate of predatory crime, with 1,245 crime reports over a 2-year period, 41 of them for violent crimes against persons. Yet the hotel covered 48 acres and had an estimated mean daily population of 3,000 guests, employees, and visitors. The per capita robbery rate was 76% lower than the per capita robbery rate for the entire city (Sherman, Buerger, and Gartin).¹ In contrast, the bar on the Minneapolis hot-spot list (Table 1) with the highest raw frequency of predatory crime also had very high per capita rates of crime. With 25 robberies in 1 year, and an estimated mean daily population of no more

Table 1

Hot Spots in Minneapolis, December 15, 1985–December 15, 1986, with 10 or More Predatory Crimes (adjusted data before aggregation of multiple address listings)

Rank/Description	Robberies, Rapes, Auto Thefts	All Types
1. Intersection: bars, liquor store, park	33	461
2. Bus Depot	28	343
3. Intersection: homeless shelters, bars	27	549
4. Downtown Mall	27	445
5. Intersection: adult bookstore, bars	27	431
6. Bar	25	510
7. Intersection: theater, mall, record store	25	458
8. Hotel	23	240
9. Convenience Store	22	607
10. Bar	21	219
11. Intersection: drugstore, adult theater	18	513
12. Intersection: restaurant, bar	15	445
13. Apartment Building	15	177
14. Department Store	15	449
15. Intersection: Burger King, office bldg.	15	365
16. Shopping Mall	15	305
17. Hotel	14	121
18. Bar	14	244
19. Towing Company	14	113
20. Movie Theater	14	251
21. Department Store	14	810
22. High-rise Apartment Building	14	479
23. Intersection: drugstore, adult bookstore	13	290
24. Convenience Store	13	113
25. Intersection: high concentration of bars	13	206
26. Parking Lot	13	31
27. Loring Park	13	212
28. Restaurant	13	25
29. Apartment Building	12	142
30. Restaurant	12	198
31. Homeless Shelter	12	379
32. Detached House	11	190
33. High-rise Apartment Building	11	125

Rank/Description	Robberies, Rapes, Auto Thefts	All Types
34. Apartment Building	10	233
35. Intersection: high residential area	10	156
36. High-rise Apartment Building	10	92
37. Restaurant	10	122
38. Intersection: apartments, gas stations	10	197
39. Intersection: supermarket, liquor store	10	94
40. Lake Harriet	10	171
41. Bar	10	107
42. Apartment Building	10	142
Totals	661	11,760

than 300, Moby Dick's Bar had a robbery call rate of 83 per 1,000 persons—seven times higher than the call rate of 12 per 1,000 for the city's entire 1986 estimated population of 362,000. With 81 assaults, the per capita assault rate at the bar was 270 per 1,000 or more than 1 assault for every 4 persons in the bar over the year. Such an environment can reasonably be labeled as a dangerous place, in which individuals face substantially higher personal risks of criminal victimization than in the “average” place.

The estimates of per capita crime risk by place are further complicated by the varying time at risk. One reason the convenience stores in Gainesville had six times greater prevalence than the liquor stores of at least one armed robbery per location (Clifton 1987) may be that the liquor stores were open for less than half the hours per week of a 24-hour, 7-day convenience store. Just as plane and automobile crash fatalities are computed per passenger mile traveled, the conceptually appropriate indicator for place crimes against persons may be crimes per person-minute spent on the premises. Property crimes would require different adjustments for time at risk. Commercial burglary, for example, should be standardized by the number of hours per week an establishment is closed, and auto theft rates might be standardized by the number of hours each car is present at a place. The violent Minneapolis bar would be even more violent if the annualized violence rates were adjusted for the limited hours per day it was occupied.

Are Places Criminogenic?

The basic theoretical problem for the criminology of place, however, is not just to account for variation in raw frequencies of place crime, or per unit/period crime target risks. The more fundamental issue is whether the routine activities of places, given their physical environment, are actually criminogenic. Do places vary in their capacity to help *cause* crime, or merely in their frequency of *hosting* crime that was going to occur some place inevitably, regardless of the specific place? Are the routine activities of hot spots criminogenic *generators* of crime, or merely more attractive *receptors* of crime? If a crime hot spot is somehow incapacitated from producing its routine activities, would there be a corresponding net decline in total criminal events, or merely a hydraulic displacement of the same events to the next most appropriate locations?

Displacement

A routine activities criminology of place hypothesizes that crime cannot be displaced merely by displacing motivated offenders; the offenders must also be displaced *to* other places with suitable targets and weak guardianship. The findings presented above support that view. If the distribution of crime hot spots was determined solely by the concentration of offenders, then how can we explain the complete 1-year absence of predatory crimes from 73% of

the places in high-crime areas in Minneapolis (compared with the expected absence from only 57%)?

Cohen and Felson (1979) support the criminogenic role of place by demonstrating temporal correlations between time spent away from home and collectivity crime rates. Other evidence suggests that variations in area-level guardianship are associated with little displacement of offending from better to more poorly guarded areas (Hakim and Rengert 1981). The entire problem of planned reductions in criminal opportunity unintentionally producing *displacement* of crime may have been exaggerated by policymakers pessimistically resigned to the perseverance of evildoers (Clarke and Mayhew 1988; Cornish and Clarke 1987). But as an empirical question, the generator-versus-receptor problem is far from being resolved.

It seems likely, for example, that the criminogenic influence of place varies by type of offense. Crimes arising out of intimate or market relationships may be much less dependent on place than predatory stranger crimes. The concentration of domestic disturbance calls may simply indicate that certain buildings are receptors for the kinds of people most likely to experience, or at least call police about, domestic problems; such calls might occur at the same rate no matter where they lived. Some market-driven offenses, like the street sale of prostitution and illegal narcotics, may occur independently of the routine activities of places. As the recent failed crackdown on drugs in the District of Columbia suggests (Reuter et al., 1987), market crimes may create their own routine activities in otherwise relatively unorganized public places.

Yet all the literature on robbery discussed above suggests that cash business places open at night generate opportunities for robbery, the absence of which could well mean fewer robberies. The concentration of exposers in Minneapolis parks (7 of the 25 top-ranked places for sex crimes) suggest that there might be fewer exposures if there were fewer places providing both a desirable audience and abundant opportunities for concealment. Predatory stranger offenses, in particular, seem dependent on places where offenders converge with vulnerable victims and low surveillance.

Yet even predatory stranger offenses vary substantially by type of offense, as Table 1 shows, with respect to the magnitude of concentration they display relative to the number of possible locations. One can avoid robbery twice as effectively by staying away from certain places than one

can avoid sex crimes or auto theft. If routine activities of places are criminogenic, they appear to be more powerfully so for some kinds of offenses than others.

Changing Places, Not People

Ironically, Cohen and Felson (1979) concluded their original analysis with an emphasis on individual life-styles as the primary aspect of routine activities affecting crime, implying the inevitability of higher crime with a more mobile life-style (cf. Hindelang et al. 1978). Focusing on the routine activities of places rather than of individual life-styles produces a different conclusion, as Felson (1987) has recently implied. On a place-specific basis, targets may be made less suitable, guardianship may be increased, and the supply of potential offenders may be reduced. Successful efforts to do so might produce net reductions in crime, holding constant the absolute size of the populations of offenders and targets. The routine activities of the person who goes to bars or convenience stores late at night does not have to change for such places to be made less criminogenic.

Many recent examples of such attempts can be found. Local ordinances passed in the late 1980s in Ohio, Florida, and New Jersey require convenience stores to have two or more clerks on duty, for the explicit purpose of reducing armed robbery through better guardianship (Clifton 1987). A 1987 editorial in the *American Journal of Public Health* recommends that the U.S. Occupational Safety and Health Administration regulate workplace environments to reduce target suitability for robbery-homicide by requiring bullet-proof barriers to protect taxi drivers and store clerks and better placement of cash registers to increase surveillability from the street (Dietz and Baker, 1987). The mother of a boy murdered in a 1985 Orlando, Florida, convenience store robbery attempted to create a Mother against Drunk Driving (MADD)-type organization called Victims of Interstate Convenience Enterprises (VOICE) to fight for better convenience store security (Lawrence 1986). New York police developed an Operation Padlock program to close up businesses with repeated crime problems. As part of the developing problem-oriented approach to reinventing police strategies (Eck and Spelman 1987; Goldstein 1979), police in Minneapolis have sought to reduce convergence of offenders and targets under weak guardianship by revoking the liquor licenses of two violent bars, based in

part on the data analysis presented above (Sherman et al., 1988). Citizens in Detroit have gone as far as buying up and renovating vacant houses to prevent them from becoming crack houses (Wilkerson, 1988b), and citizens in both Detroit and Miami have burned down crack houses, with an acquittal on arson charges by one Detroit jury (Wilkerson, 1988a).

Whether such measures can produce net reductions in crime (without displacement) may be impossible to determine, given the difficulty of holding constant the collectivity supply of motivated offenders—or even of defining adequately who they are (Massey et al., 1987). But controlled experimentation may be the best means for determining the extent to which routine activities of places can be made less criminogenic. Random assignment of a large sample of clusters of hot spot addresses to different levels of guardianship by police patrol, for example, could determine (1) whether guardianship affects place crime and (2) whether crimes reduced in one place are matched by crimes increased in nearby places (Sherman and Weisburd, 1988). The convenience store industry could experiment with numbers of clerks and other guardianship measures and examine potential displacement of armed robbery to other nighttime commercial establishments in nearby jurisdictions.

At the same time, the criminology of place can be enhanced by longitudinal analysis of the characteristics associated with onset, frequency rates, seriousness, and desistance of crime in places (Blumstein, Cohen, Roth, and Visser, 1986; Wolfgang, Figlio, and Sellin 1972). For example, from 1945 (the birth year of the first Philadelphia cohort) to 1988, one liquor store in Northeast Washington under the same family management experienced 16 robberies and burglaries and 4 robbery-homicides (Mintz, 1988). How does that compare with other liquor stores? How will it compare with future rates under new management? How do liquor stores compare with other types of retail outlets, or other types of places? Such research on the “criminal careers” of places could help to specify the fertile, but still too general, routine activities concepts of target suitability, motivated offenders, and guardianship.

Like the criminology of individuals, a criminology of place could fall prey to the facile notion that getting rid of the “bad apples” will solve the problem. Neither capital punishment of places (as in arson of crack houses) nor incapacitation of the routine activities of criminal hot spots

(as in revocation of liquor licenses) seems likely to eliminate crime. But since the routine activities of places may be regulated far more easily than the routine activities of persons, a criminology of place would seem to offer substantial promise for public policy as well as theory.

Note

1. One possible cause for the actual “coolness” of this apparently hot spot was the much higher level of guardianship at the hotel. The ratio of patrol officers (including the hotel’s security officers) to population was three times higher at the hotel than in the city as a whole, and the density of patrol presence per acre was 63 times higher at the hotel than city wide. As Felson (1987: 927) points out, growing inequality of security is characteristic of the modern metropolis. This inequality has arguably made many people into virtual prisoners of their private spaces, or “modern cliff dwellers” (Reiss, 1987: 42).

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REVIEW QUESTIONS

1. What measure did Sherman et al. use to measure how crime was distributed? What are the strengths and weaknesses of this measure?
2. Regarding the more serious crimes that Sherman et al. measure, what types of establishments appear the most in the Top 10? Why do such locations appear to epitomize the various elements of routine activities theory?
3. Why would fast-food restaurants or towing companies appear as "hot spots" for crime? What types of characteristics do these locations have that would predispose them to crime/victimization?

READING 7

Like the authors of the previous reading, Teresa LaGrange uses a routine activities theoretical framework for her study of crime in Edmonton, Alberta, and goes a bit further by examining the influence of environmental predictors on why crime tends to be higher in certain areas. Furthermore, she uses more advanced mapping software for her analysis, a relatively new program called MapInfo, which is based on coordinates and geocoding of crime activity. In addition, she reviews the influence of the theory of "broken windows" that was originally presented by Wilson and Kelling.¹ That theory argues that in certain areas, a broken window or other physical eyesore will be fixed very quickly, whereas in other areas, one broken window quickly leads to other broken windows and additional dilapidation because the residents and business owners do not care much about the area or do not have the financial

¹Wilson and Kelling, "Broken Windows."

means to pay for such improvements. Subsequently, this leads to higher crime rates in the area because motivated offenders feel they have less chance of getting caught in run-down areas where residents do not have the inclination or resources to secure the area. This often becomes a serious feedback loop, and physical and crime conditions continue to decline in a rapid cycle. While reading the following selection, consider the importance that environmental planning and the layout of cities have on opportunities for offenders to commit crime.

The Impact of Neighborhoods, Schools, and Malls on the Spatial Distribution of Property Damage

Teresa C. LaGrange

Analysis of the geographic distribution of crime has had a long history in criminology, dating from the work of sociologists at the Chicago School. Most of this research has focused on index crimes such as homicide, robbery, rape, or burglary, and it has linked rates of offending to the social and residential characteristics of the neighborhoods where these crimes occur. Minor crimes, however, such as property damage and vandalism, occur far more frequently in any city than the more widely studied index offenses. Recent research has suggested that these crimes may be significant factors in the occurrence of urban crime in a more general sense, through processes described as the “broken windows” effect or “spiral of decay” (Felson 1998: 131; Skogan 1990:40; see also Kelling and Coles 1996). According to these perspectives, the accumulation of minor property damage sends a subtle signal to potential offenders that guardianship is low and that crimes may be carried out undetected. Thus, crimes of all types are more likely to be committed in run-down areas of a city. An understanding of the geographic distribution of minor offenses like property damage and vandalism, therefore, has the potential to shed light on the spatial patterns of a much broader range of criminal activity.

Although the causal variables that are usually examined in relation to spatial variations in crime rates have been those associated with structural theories of offending

(Bursik 1988; Park and Burgess 1933; Shaw and McKay 1942; Snodgrass 1976), the broken windows phenomenon emphasizes that the immediate situational context may also be an important factor in the occurrence of crime. A would-be offender needs a suitable victim or target, and must encounter it in circumstances that permit a crime to be carried out without interruption. Recognition of these fundamental observations has led to the recent development of perspectives such as routine activities theory, which looks beyond the attributes of residents of high-crime areas to consider those social and environmental factors that make such areas conducive to crime (Cohen and Felson 1979; Felson 1986, 1987, 1994, 1998; Felson and Cohen 1980). As formulated and developed by Felson and Cohen, routine activities theory portrays crime as the convergence of the following three elements: motivated offenders, potential victims or targets, and unguarded access (Felson 1998:53). Thus, features of the urban environment that contribute to the convergence of these factors by increasing the concentration of offenders and victims, or reducing guardianship, will result in increased crime rates. Such factors may include characteristics of neighborhoods, such as the age composition of residents or the proportion of rental housing. They may include physical structures in the environment such as bars (Block and Block 1995; Roncek and Maier 1991), schools (Roncek and Faggiani 1985; Roncek and LoBosco 1983),

SOURCE: Teresa C. LaGrange, “The Impact of Neighborhoods, Schools, and Malls on the Spatial Distribution of Property Damage,” *Journal of Research in Crime and Delinquency* 36, no. 4 (1999): 393–422. Copyright © 1999 Sage Publications, Inc. Reprinted by permission of Sage Publications, Inc.

or shopping malls (Engstad 1980) that serve as crime attractors or generators (Brantingham and Brantingham 1991, 1994, 1995; Jarvis 1972).

The primary objective of the current study is to apply these concepts, derived from routine activities theory and previous research on the spatial distribution of crime, to the occurrence of minor property damage throughout one city during a single year. The occurrence of damage incidents as recorded by three different city departments or agencies is considered in relationship to neighborhood characteristics, residential composition, and environmental structures (schools and malls) that contribute to the convergence of likely offenders and reduced guardianship. The research has a number of implications. The link between cumulative property damage and more serious crimes means that the analysis of these crimes can make an important contribution to the understanding of urban crime patterns. Furthermore, because property damage and vandalism tend to be directed primarily toward public or impersonal spaces and facilities, an understanding of their etiology may provide a useful model for research into other forms of anonymous environmental damage (Skogan 1990:37). Finally, this research extends the principles of routine activities theory to previously understudied types of criminal activity, and thus sheds further light on the way in which guardianship and opportunity intersect to permit crimes to occur.

Theory and Previous Research

It is well known that crimes tend to cluster in certain areas of a city, so that some areas have higher crime rates than others (Brantingham and Brantingham 1984, 1993; Dunn 1984; Figlio, Hakim, and Rengert 1986; Georges-Abeyie and Harries 1980): This is one of the least disputed facts about crime, and it has been repeatedly supported by numerous studies spanning several decades, different cities, and diverse offenses. Previous research has examined, for example, the locations of homicides in Cleveland (Bensing and Schroeder 1960), Chicago (Block 1976), and Houston (Bullock 1955); robberies in Seattle (Schmid 1960); and burglaries in Washington, D.C. (Scarr 1973). Furthermore, it was the early observation of spatial variations that initially contributed to the development of the

classical perspectives on crime. Early theorists equated areas of the city with neighborhoods having enduring and distinctive features; this conceptualization led to the development of theories that attempted to explain the criminogenic nature of these areas (Kornhauser 1978). Factors associated with higher crime rates included the proportion of unemployed persons, the amount of rental housing, the overall residential density, and the length of time residents remained in the area. Various mechanisms have been identified that link these area characteristics to the criminal inclinations of residents—blocked opportunities and the absence of legitimate pursuits, the attraction of illegitimate opportunities, or a general lack of neighborhood social control (Allan and Steffensmeier 1989; Bursik 1988; Park and Burgess 1933; Sampson and Grove 1989; Shaw and McKay 1942; Snodgrass, 1976).

Contemporary research on when and where crimes occur, however, has been strongly influenced by the recognition that human activities, including crimes, take place within a specific social and physical environment (Hawley 1950, 1971). Thus, contemporary studies have taken into consideration the situational context that surrounds the occurrence of criminal events (Sacco and Kennedy 1994), rather than focusing exclusively on offender motivation. Even highly motivated offenders require certain conditions to complete their crimes—conditions that include such factors as the vulnerability of victims or targets and the presence or absence of witnesses (Sherman, Gartin, and Buerger 1989). Analyses of situational factors that include the routine activities of both likely offenders and potential victims have demonstrated that these requisite elements of crime converge nonrandomly; that is, some areas provide all the components for crime to occur more frequently and more regularly than others. The circumstances, under which crimes occur, from this perspective, are functions of social and structural phenomena that allow people to translate their criminal inclinations into action (Felson 1986, 1994, 1998).

Therefore, the social characteristics of residents of specific areas may not be a direct cause of the crimes rates in those areas (Allan and Steffensmeier 1989). Some, if not all, of the crimes may be committed by outsiders who gravitate to these areas rather than by residents themselves (Costanzo, Halperin, and Gale 1986:74). Crime rates might be high, not because of the criminal inclinations of residents, but because of the criminal opportunities that such

areas provide (Dunn 1984; Felson and Cohen 1980). The nature and extent of guardianship in an area is directly related to whether people are at home or away from home and whether there are many people about during different times of day. It is affected by whether residents know their neighbors, and are capable of both recognizing and responding to events that appear out of the ordinary. Social characteristics such as the number of homemakers, single adults, or retired persons living in the area contribute to different patterns of local activity, dictating whether the majority of residents are at home during the day, during the evenings, or only rarely; and whether residents come and go regularly or at all hours.

Residents in their teens or early adulthood are likely to be absent from their homes more frequently, as are those who are single (Felson and Cohen 1980; Hindelang, Gottfredson, and Garofalo 1978). In areas where a large proportion of residents fall into these categories, guardianship may be substantially reduced. Similarly, areas with a high proportion of rental units have a less permanent resident population than well-established owner-occupied housing tracts (Bursik 1988). In areas with a high population turnover, it is less likely that residents will know their neighbors and know who does or does not have a legitimate reason for being in the area. Residents may therefore be unable to exercise informal surveillance by direct observation and by questioning of strangers or suspicious activities (Sampson and Grove 1989). Consistent with a routine activities perspective that emphasizes opportunity; higher crime rates in such areas may be directly related to the inability of residents to exercise suitable guardianship.

The population density of an area, by contrast, may have the opposite effect. Although high density might be hypothesized to increase the convergence of potential offenders and suitable targets, and has been linked by some research to higher crime rates (Hartnagel and Lee 1990), the sheer number of people in an area may make it more difficult for potential offenders to commit a crime without being observed. In general, density may lead to lower rates for crimes that involve secrecy (burglary, for example) and higher rates for crimes that arise from proximity (larceny and muggings) (Decker, Shichor, and O'Brien 1982:52–53; Felson 1998:29; see also Roncek and Faggiani 1985; Roncek and LoBosco 1983; Shlomo 1968).

Physical Structures in the Environment

In addition to the social environment provided by residents and neighborhoods, the urban landscape is shaped by physical structures that influence human activities. Two types of public structures, shopping malls and high schools, have been identified by previous studies as being significantly related to higher crime rates in adjacent areas (Engstad 1980; Roncek and Faggiani 1985; Roncek and LoBosco 1983). Both serve to attract a large number of nonresidents into an area who come and go with little formal supervision—a situation that not only brings potential offenders into the area, but also reduces guardianship.

Shopping malls. Shopping malls exist for the express purpose of attracting potential customers to the shops and services that they shelter. The large number of people who come and go in the streets around a mall works to reduce effective guardianship, because distinguishing between legitimate patrons and persons who are simply loitering may be difficult. It might be predicted that this combination of factors would result in higher crime rates in the areas immediately adjacent to malls. Consistent with this prediction, Engstad (1980) found significantly higher frequencies of auto crimes, thefts, and miscellaneous offenses in three urban census tracts, each of which contained a major shopping center,¹ when compared to surrounding areas with similar social and demographic characteristics. Areas with shopping centers had from 2.1 to 6.5 times as many offenses as the averages recorded for adjacent areas, and 1.5 to 3.7 times as many offenses as the maximum recorded for adjacent areas (Engstad 1980:210–11).

High schools. High schools also contribute to increased traffic and activity in the immediate, surrounding vicinity. Furthermore, this population consists of persons in their teens, who are implicated in higher rates of offending than other demographic groups. Thus, research into the impact of high schools has consistently demonstrated that their presence is associated with higher crime rates in surrounding neighborhoods. In the first of two studies conducted in medium-sized American cities, Roncek and LoBosco (1983) examined crimes occurring in a relatively new, affluent city that ranked lower in crime rates than other cities of comparable size. The authors report higher rates of

several types of index crimes² in one-block areas immediately adjacent to public high schools,³ controlling for social, housing, and demographic composition of the areas. Although the size of a school's enrollment was evaluated as a possible predictor, it was found to be nonsignificant.

Routine Activities and Minor Crimes

Although the impact of routine activities of residents and environmental structures such as schools and malls has been investigated for serious crimes such as robbery, burglary, or rape, these factors have not been considered in relation to minor offenses like property damage. One of the primary justifications for the emphasis on serious crimes, without question, is the potential such offenses have for grave social harm. Such crimes typically and understandably arouse the greatest fear and concern among the public, and they receive the greatest attention and resources from criminal justice agencies. Minor crimes do not appear to pose the same sort of immediate social threat, and hence are usually considered to be of secondary concern. Yet, the rate of occurrence for minor crimes far surpasses, in any city, the rates for more serious offenses. Such crimes as vandalism are a constantly occurring and ever present problem in most contemporary North American cities, and their cumulative impact can prove very costly (Bell, Bell, and Godefroy 1988; Skogan 1990). More significant, the accumulation of such incidents has been implicated in the spiral of decay (Felson 1998:131) that leads to the devaluation of urban neighborhoods. The impact is more than economic; the occurrence of minor crimes in an area, especially those that involve visible property damage, may elicit other criminal activity (Chalfant 1992; Challinger 1987; Kelling and Coles 1996).

The assertion that behavior can be formed by the circumstances surrounding it has been criticized as mechanistic at best and environmental determinism at worst (Clarke 1978). It is based, however, on the fundamental tenets of learning theory (Marongiu and Newman 1997; Wortley 1997:66). Specific situational factors can act as eliciting stimuli or behavioral cues to engage in or restrain certain behaviors. For example, in an influential and widely cited study, Zimbardo (1970) demonstrated that "releaser cues," in the form of existing damage, led to the rapid destruction of seemingly abandoned vehicles on the street.

The view that criminal events are contingent on the situation in which they occur is consistent with rational theories that attribute actions, including criminal ones, to a balancing of costs and benefits (Clarke and Felson 1993; Cornish and Clarke 1986). Benefits may be perceived as more likely if there is seemingly a low risk of apprehension. Thus, the perception of opportunity may in fact contribute to the occurrence of crime. Risks, on the other hand, particularly the perceived risks of being caught, may work to suppress such behavior. Areas where minor offenses such as property damage or vandalism occur and accumulate may convey a subtle signal to potential offenders that guardianship and social control are low. This perception may be taken, consciously or unconsciously, as an indication that the risks of detection and apprehension for criminal activity are negligible. That perception, in turn, may lead to an escalation in the rate of other, potentially more serious crimes (Felson 1998:131; Wortley 1997:67).

Social characteristics of areas that contribute to these elements may therefore be associated with higher rates of property damage. Areas that contain many unemployed persons, more young males, more rental than owned housing, and a larger number of transient residents will have greater movement and activity in and around the neighborhood, both during the course of the daily routine and over longer periods of time. These factors, in turn, make it more difficult to distinguish between strangers and residents and to determine the nature of their activities, thereby weakening guardianship. On the other hand, areas of high density and areas where more residents are homemakers or retired, and therefore home for more hours during the day, may not afford anonymous access to unguarded targets. Because potential offenders may feel constrained by the possibility of observation, less damage may occur in such areas.

Beyond the social characteristics of neighborhoods, physical features of the environment, such as malls and schools, that contribute to the convergence of offenders in an area might be expected to result in increased rates of minor crimes, just as with more serious crimes. Malls serve to draw large numbers of people into an area, some of whom may be potential offenders. Malls also impede effective guardianship because of the difficulty in distinguishing between legitimate and illegitimate visitors to the area. The presence of secondary schools within an area can also be expected to result in more crimes of this type because, like

malls, such facilities increase local human traffic and thus interfere with guardianship. Furthermore, both malls and schools serve to draw together young people in their teens—the specific age groups most likely to be involved in minor property crime (Beaulieu 1982; Erickson and Jensen 1977; Gladstone 1978; Gold 1970).

The Current Research

In keeping with the foregoing discussion, this study examines the geographic distribution of minor property crime recorded as mischief and vandalism in a medium-sized Canadian city during a 1-year period.⁴ Previous studies of the spatial distribution of crime have, for the most part, relied on official crime data as the most widely available and consistent information on crimes throughout all parts of a given geographic area. These statistics usually reflect police activity in response to crime. It is axiomatic that such records undercount crime for a variety of reasons, including the fact that many crimes go unreported and therefore fail to show up in official records. However, underreporting is especially likely to be a problem for official counts of very minor crimes such as property damage and vandalism, because victims may view such incidents as too minor to report. To address the potential methodological issues that arise from reliance on official reports for minor crimes, this study uses three types of data obtained from three departments in the city that served as the study site: the city's Department of Parks and Recreation, its transit department, and its police service.⁵ Using census enumeration areas as a unit of aggregation,⁶ the geographic patterns of these three types of damage are evaluated using ordinary least square (OLS) regression in relationship to two categories of predictors; the social characteristics of residents of each area, taken from municipal census data, and the presence or absence of two types of environmental structures, shopping malls and secondary schools.

Method

Data for this research was collected in Edmonton, Alberta, a western Canadian city with a population of approximately 600,000. The three agencies cooperating in this research—the police service, the city transit department, and the Department of Parks and Recreation—provided records of

the damage done to the facilities under their supervision during the calendar year of 1992. Each of these data sources was unique due to the nature of the targets, the types of incidents that could occur, and the way in which incidents were recorded; thus, merging them into a single composite index was deemed to be unsuitable. Each measure was therefore retained as a separate indicator of damage.

Mischief. Records were obtained from the Edmonton Police Service on all mischief incidents reported during 1992. Under Canadian law, the offence category of mischief refers to willful, malicious damage or public behavior. Most such incidents are property-related vandalism. Because many of them are relatively minor, however, police data are potentially biased, both by underreporting and by differential response. Research indicates that in Canada, as elsewhere, the extent to which citizens report crime varies. For very minor offenses, and particularly where there is little likelihood of identifying and arresting an offender, reporting is low (Griffiths and Verdun-Jones 1989; Silverman, Teevan, and Sacco 1996). Canadian victimization surveys reveal that most respondents do not report minor property crimes, even when the property is their own. Typically, less than half of such incidents are reported. Most respondents blame their failure to report on the trivial nature of incidents (60 percent) or on the lack of benefit expected from formal police action (47 percent) (Gartner and Doob 1996). Hence, the majority of incidents involving minor property damage does not show up in official police records. In addition, police responses to citizen complaints may vary according to the seriousness of the crime, considerations of the immediate workload, and time pressures. An officer's perception of the neighborhood where the report comes from may also influence the response (Hagan, Gillis, and Chan 1978). These factors can be expected to substantially restrict the number of incidents of minor property damage that show up in official police records, a reduction that may vary considerably for different neighborhoods.

For this study, additional data were obtained from two other contributing agencies. These data consisted of maintenance records to damaged structures, avoiding the difficulties associated with behavior and selective recording of damage. Where damage was observed, maintenance personnel for each department filed a report indicating their assessment of the cause, whether it was an accident, normal wear and tear, theft, or deliberate damage. In

contrast to police data, which provided information on single incidents, both of these agencies kept periodic maintenance records that include an unknown amount of cumulative damage.

Transit vandalism. Records obtained from the transit department reported damage to bus stops and shelters throughout the city.⁷ These records were compiled on the basis of reports from staff maintenance personnel who made regular visits to each shelter. Given the nature of these structures, assessments on the type of damage were deemed to be fairly accurate—their construction is designed to resist most inadvertent damage and discourage theft. The majority of incidents involved damage to the glass or plexiglass panels from which shelters are constructed; graffiti was excluded from the reports. However, maintenance personnel only visited the shelters on their route on a monthly basis. Any damage that was recorded at that time therefore incorporated an unknown number of actual incidents (D. Kowalchuk, personal communication, June 30, 1993).

Park vandalism. Reports on damage to facilities maintained by the Department of Parks and Recreation reflected periodic visits by maintenance personnel. Unlike the transit department records, however, which listed only a relatively restricted type of damage to specific types of structures, records from the Department of Parks and Recreation included a wide variety of different incidents, reflecting the greater variation in the types of structures and grounds for which the department had responsibility. In addition to all parks within the municipal limits, the Department of Parks and Recreation maintained recreational facilities, cemeteries, the grounds of public buildings, and tracts of public landscaping. Hence, there were potentially many different types of damage done to lawns, flowerbeds, buildings, pools, and other structures. This greater variety, however, renders the issue of determining the exact nature of damage and judging whether it was deliberate more problematic. Although maintenance personnel attempted to discriminate deliberate damage from accidental, the extent to which these judgments were correct is unknown. In addition, there is no way to ascertain whether similar criteria were used in evaluating incidents in different locations. Decisions were made by individual workers who filed reports on damages and classified them

according to the type of incident (W. Gorman, personal communication, June 2, 1993).

Census Enumeration Areas

Data on population and housing characteristics in the city were obtained from the 1992 City of Edmonton Municipal Census, which reported aggregate information for each census enumeration area. Enumeration areas are subdivisions of the permanent statistical units established by Statistics Canada for the national census (Lalu 1989:1). The smaller enumeration areas do not provide as much demographic detail as the larger census tracts. Their smaller size, however, allows for greater variation in population characteristics.

The routine activities perspective that forms the theoretical basis for this research does not equate the concept of neighborhood with that of community or that of the distinctive sociocultural attributes inherent in this term as developed in the earlier ecological tradition. Nevertheless, some minimal assumption about neighborhood is implicit in the expectation that people can potentially come to know their neighbors, that they may become familiar with their neighbors' children and habitual routines, and that these developments are important in informal guardianship. Although the placement of boundaries along naturally occurring lines of demarcation like main roadways, parks, ravines, and commercial strips may appear to be arbitrary, such divisions also tend to create effective barriers that limit guardianship. Residents preoccupied with daily activities are less likely to take note of events that occur across the park, or across the railroad tracks, than those next door or on their own block. It is in this limited sense that the use of census enumeration boundaries provides a basis for comparing areas.

Area characteristics. Area characteristics that are used as predictors of vandalism and mischief for this research included a measure of residents who had lived 1 year or less at their current address (new residents), calculated as a percentage of the total population in each area. Additional population measures included the percentage of the total population identified as homemakers, as retired, and as unemployed at the time of the enumeration. The two following specific segments of the population were included: males between the ages of 10 and 19 and males between the ages of 20 and 24. Both were calculated as a percentage of

the total number of males in the area.⁸ Housing characteristics were calculated as a percentage of the total number of housing units in the area. These included the percentage of renters, rooming houses, and vacant housing units. A final measure, child density, was calculated as the average number of children per household with ages from 5 to 19.⁹

Environmental structures. Malls included in this study were the 17 largest malls in the city. Commercial strips and smaller neighborhood malls were excluded.¹⁰ Secondary schools included the four following types of schools: the junior and senior high schools of the public school district, and the junior and senior high schools of the Catholic school district. Several schools in the Catholic school district served students at more than one level, including three junior-senior high schools; these schools were coded as high schools in the analysis. Each of these facilities was coded 0 (absence) or 1 (presence). Previous research on the impact of schools (Roncek and Faggiani 1985; Roncek and LoBosco 1983) had identified a single-block radius as the extent of significant differences. Therefore, schools were introduced as variables only within the enumeration area in which they were located. The impact of malls, however, was expected to be wider, due in part to their greater use of land within a given area and in part to the greater amount of human traffic that they generate. Therefore, malls were introduced both for their presence within an area and for their presence in an adjacent area.¹¹

Mapping of Crime Incidents

To obtain area measures of crime rates that might be evaluated in relation to area-level predictors, crime data were spatially located within the city using a computerized mapping program (MapInfo) that assigns *x* and *y* coordinates to a reference map.¹² For this study, two base maps were used: a computerized street map containing streets and block numbers for all city addresses, and a map of the boundaries of the census enumeration areas. Mischief incidents as reported by the police department were recorded as specific points, in most cases, a street address, and they were geocoded as such. Of the original 13,537 incidents reported to the police, 97 percent (13,131) were successfully geocoded.¹³ Locations for the remaining 259 cases (1.9 percent) could not be identified. Transit vandalism incidents were recorded as occurring at intersections, with

route direction information provided; route direction was used to determine assignment to one of the corners of the intersection. Of the 1,337 incidents, 1,325 were successfully geocoded. Park vandalism incidents were recorded according to the park or facility where they occurred rather than a street address. Each record also indicated a structure or type of structure, such as a pool house or field house; this portion of the record was used to refine the point of location further. Out of the 402 incidents recorded during 1992, all but 9 were successfully geocoded.¹⁴

All incidents from each source were separately aggregated according to the census enumeration area boundaries, resulting in a total figure for each type of damage within each area. These figures represented the actual count of incidents recorded in each enumeration area. In resident populations, areas ranged from 0 (for six areas of the city) to 3,201 (for the most densely populated). They ranged in size from .027 square kilometers to over 55 square kilometers. These two factors are inversely related; that is, the largest areas were low in population, whereas the smaller areas were high.

Area amounts of crime are generally calculated as a population-based rate, obtained by dividing the total number of crimes by the total population and then multiplying by a constant (1,000 or 100,000). Crime rates provide a useful way of comparing units such as cities, states, and even countries, because it is plausible to assume that a larger population would contain a larger number of offenders, even if the proportion of such offenders within the population remained constant. For this analysis, however, population-based rates present a number of shortcomings. Although it is logical to calculate a population-based rate of crime for larger geographical units such as a city in comparison to other cities, because most of the crime in a city can logically be attributed to residents, it is less reasonable to make the same assumption about smaller geographic units such as enumeration areas. Although it may be true that offenders are likely to select targets close to their own residences, the question remains of how close (Costanzo, Halperin, and Gale 1986). Five blocks might be considered close; yet, this is a sufficient distance to place a criminal event two enumeration areas away from the offender's home territory. Following a similar argument, Harries asserts that "most if not all the incidents may be attributable to outsiders . . . theoretically, zero events might be 'blamed' on residents, again making nonsense of the rate

concept⁹ (Harries 1993:4). This observation is underscored by the fact that crimes can and do occur in areas where there is a very small (or sometimes zero) population. The use of a population-based rate would inflate the amount of crime for these areas.¹⁵

Difficulties also arise in relation to the physical size of an area. The incidents examined in this research involve crimes, not against individual victims, but against the physical environment. Furthermore, although these crimes are often directed at structures in populated areas such as residences and stores, damage can also occur in parks, ravines, and in industrial or commercial areas. It could therefore be argued that a geographic rate (crimes per square kilometers) would provide a better measure, because larger areas would provide more opportunities for crime. However, the opportunities inherent in available targets, by themselves, are not sufficient to predict crime; it is the convergence of potential offenders with these targets in the absence of suitable guardianship that provides the conditions under which crime is likely to occur. These factors, in turn, are linked to the movements of human activity. Although the empty land around a city's perimeter may theoretically be damaged, areas that are populated, either residentially or because they are activity centers, are likely to experience a greater convergence of all of the components contributing to crime.

These arguments suggest that both the physical size of an area and the number of persons who live there are important considerations; one alone cannot provide an adequate basis for constructing a rate to control for their effects. For this reason, the actual counts of the three types of incidents that occur within each area are retained as measures. To control for the effects of area size and population, these measures are introduced as independent variables in the multiple regression analysis (Agresti and Finlay 1997; Bollen and Ward 1980).¹⁶

Results

Edmonton, Alberta, had almost three-quarter million residents within its metropolitan limits during 1992, the year for which census data used in this study were gathered. The total area occupied by the city was 690.74 square kilometers.¹⁷ Schools included 13 senior high schools and 26 junior high schools in the public school district, and 9 senior high

schools and 11 junior high schools in the Catholic school district. There were, in addition, 17 shopping malls. The municipal enumeration had identified 662 areas. Listwise elimination of missing cases and the removal of one extreme outlier from the analysis¹⁸ resulted in 654 areas that were used in the subsequent analysis. The mapping and aggregating of incidents of mischief and vandalism resulted in positively skewed distributions. Extreme scores at the upper end of the distribution for mischief and transit vandalism were recoded at the 90th percentile (Nagin and Smith 1990).¹⁹ Incidents of recoded mischief ranged from 0 to 37, with a mean of 17.72; recoded transit vandalism ranged from 0 to 5, with a mean of 1.63; and park vandalism ranged from 1 to 29, with a mean of .59.

Ordinary least squares (OLS) regression was used to examine relationships between predictors and dependent variables. Of the residential characteristics, the percentage of unemployed and the percentage of residents who were males aged 20 to 24 were found to be statistically significant predictors of increased mischief. Only the percentage unemployed, however, was identified as a statistically significant predictor for all three crime measures. For transit vandalism, it predicted a small increase, and for park vandalism, a somewhat greater increase. Other measures of residential characteristics, however, had little consistent impact. Those few that were statistically significant for one type of measure proved to be nonsignificant for the other two types. The percentage of new residents was significantly related to mischief, but it predicts lower levels instead of the expected higher levels. For transit and park vandalism, the percentage of new residents was nonsignificant. The percentage of area residences that were rooming houses and the percentage that were vacant were also significant predictors of increased mischief, but not of transit or park damage. The percentage of renters was related to a small but statistically significant increase in both mischief and transit vandalism but it was nonsignificant for park vandalism.

In contrast, the presence or absence of public high schools and shopping malls within an area were consistent and robust predictors for increased damage of all types. Because all these facilities had been coded as dummy variables, the reported coefficients represent the difference between two conditional means—one for those areas with such a structure, and one for those without (Table 1). The presence of a high school predicted a substantial and

Table 1 Comparison of Means for Areas with and without Schools and Malls: Independent Sample t Test (N = 654)

Structure	n	Resident Characteristics (in percentage)				Damage Incidents			
		New Residents	Unemployed	Males Age 10 to 19	Males Age 20 to 24	Renters	Mischief	Transit	Park
Catholic school									
High School									
Present	9	18.07	4.68	11.52	6.94	39.40	23.22	1.00	3.44
Absent	645	20.45	5.57	11.86	9.41*	44.39	17.67	1.64	.56
Junior High									
Present	11	17.20	6.91	11.73	7.93	37.01	21.73	2.72	1.09
Absent	643	20.48	5.54	11.86	9.40*	44.45	17.67	1.61*	.59
Public School									
High School									
Present	12	20.32	4.78	9.97	6.67	54.78	29.16	2.80	6.75
Absent	642	20.42	5.57	11.98	9.39	44.13	17.52**	1.16*	.48
Junior High									
Present	26	14.39	4.08	11.97	7.83	37.49	19.88	2.80	.84
Absent	628	20.67**	5.62**	11.85	9.44**	44.61	17.65	1.59**	.59
Mall									
In Area									
Present	17	24.44	6.55	10.18	9.84	59.89	31.11	3.59	4.41
Absent	637	20.31	5.53	11.90	9.37	43.91	17.38**	1.59**	.50**
Adjacent									
Present	102	21.37	6.32	11.92	9.69	50.01	21.76	2.00	.59
Absent	552	20.24	5.42	11.84	9.32	43.28*	17.00**	1.57*	.60

* $p < .05$. ** $p < .01$. Two-tailed tests.

statistically significant increase in mischief incidents, transit incidents, and park vandalism. Effects for a mall in a given area were of greater magnitude, with for mischief, for transit, and for park vandalism. Contrary to expectations, having a mall in an adjacent area did not predict a significant increase in transit or park vandalism, although the reported effect was both robust and statistically significant

for mischief. Consistent with previous literature, the significant relationship identified for high schools applied only to those of the public school system. Catholic schools were associated with a significant increase in park vandalism, but they had little consistent relationship to other types of damage. In contrast to the prominent effect identified for high schools, the presence of a junior high school

had a negligible impact. Although these schools were statistically significant for predicting transit vandalism, they did not predict a corresponding increase in mischief or park vandalism.

These differences in incidences reported for high schools and malls cannot be attributed to differences in area characteristics, as measured by the variables included in this study, which summarizes comparisons between areas with and without schools and malls, and is based on independent samples *t* tests, areas containing high schools did not differ significantly from those without in terms of population characteristics. The same conclusion is apparent for areas containing malls, when they are compared to other areas.²⁰ These types of structural facilities are dispersed throughout the city in neighborhoods of all kinds. The fact that property crime is consistently higher in surrounding areas appears to be related more to their presence than to any distinctive differences in the residential environment.

Discussion

Damage or vandalism was defined, measured, and counted in widely divergent ways by the agencies that provided data for this research. These three measures of damage, however, yielded very similar results when their spatial patterns throughout the city were examined. In spite of the expectation that residential and neighborhood characteristics would influence the amount of property crime that occurred in an area, these variables had little consistent impact for all types of damage. The unemployment rate, however, was a significant predictor of increased levels of mischief and transit and park vandalism. Other characteristics that were expected to increase the likelihood of property damage were either nonsignificant (the percentage of teen males living in an area) or were predictors of one type of damage but not another (the percentage of local housing that was renter occupied). Those areas with high schools and malls, however, were found to have consistently higher rates of all three types of damage, controlling for differences in social, residential, and demographic characteristics. These results are consistent with a routine activities interpretation of the circumstances in which damage occurs. Routine activities theory argues that crimes will be

committed when potential offenders are confronted with the opportunities afforded by available targets in situations of reduced guardianship. This research extends the geographic analysis of crime patterns, which has previously focused on serious index crimes, to study the occurrence of minor property crimes in a Canadian city during a 1-year period. As with the index crimes examined in previous research, the results of this study reveal a marked concentration of criminal incidents in certain areas—specifically, those containing high schools or malls, and those with higher unemployment. Reasons for the concentration of mischief and vandalism in these areas have been framed in terms of routine activities theory's model of crime as arising from the convergence of offenders and targets in the absence of effective guardianship. The results support the conclusion that situational opportunities presented by urban ecological features can account for variations in crime patterns. Some urban areas, due to their residential composition, may be particularly attractive to vandals and to those inclined to minor property crime because they afford inherently low guardianship. Further weakening of guardianship is brought about by the presence of facilities like schools and malls that bring a large number of nonresidents into the vicinity on a daily basis. Furthermore, these facilities attract the segments of population most likely to engage in minor damage and vandalism—people in their teens. Although replication is necessary to confirm these findings, the results of this analysis have implications for crime control. If minor property damage and vandalism are seen as the product of routine activities that arise primarily from the convergence of offenders and reduced guardianship, then prevention may most effectively be focused on disrupting the way in which these factors intersect—through an increase in both active and passive guardianship. Furthermore, the relevance of these findings goes beyond the damage itself. Crimes such as vandalism and mischief are often trivial as single events, but they are collectively significant in their impact on the perception of guardianship, and hence on potential offenders' weighing of the risks and benefits associated with more serious and socially harmful criminal behavior. The accumulation of property crime in an area may provide a signal to the criminally inclined that there is little likelihood of apprehension; therefore, such areas become likely sites for more serious criminal activities. In light of recent research into

what has been described as the broken windows effect, an understanding of the circumstances surrounding minor property damage sheds further light on urban crime patterns more generally.

Notes

1. The cited research uses the term *shopping center* to describe the retail facilities studied, in contrast to the current usage of the term *mall*. Although there is a semantic distinction between the two terms based on whether facilities have a common nonretail area (the mall itself), the city in which the current research was conducted does not make such a distinction. The two terms are therefore used interchangeably in this study.

2. The offence categories examined were murder, rape, assault, robbery, burglary, grand theft, and auto theft (Roncek and LoBosco 1983).

3. A similar effect was not observed for private high schools. The authors speculated that “the grounds of public high schools are public property and legitimately available for use by anyone while the grounds of private schools are not” (Roncek and LoBosco 1983).

4. *Vandalism* is defined variously as “intentional acts aimed at damaging or destroying” (Moser 1992); “intentional hostile behavior aimed at damaging environmental objects”; “willful or malicious destruction, injury, disfigurement, or defacement” (Federal Bureau of Investigation 1994; see also Cohen 1973; Levy-Leboyer 1984). Although the term vandalism is commonly used in Canada, it is not contained in the Canadian Criminal Code. Instead, instances of vandalism are recorded and prosecuted under the statutes for mischief.

5. Incidents involving property damage and vandalism are recorded under the Canadian Criminal Code as mischief more than or less than \$1,000 (Rodrigues 1990:210–211, section 430). Although offences recorded under this section usually refer to property damage, some incidents may refer to other behavior. Section 430.1 of the Canadian Criminal Code states that “Every one commits mischief who willfully (a) destroys or damages property; (b) renders property dangerous, useless, inoperative or ineffective; (c) obstructs, interrupts or interferes with the lawful use, enjoyment or operation of property” (Rodrigues 1990:210–211). Section 430.1.1 adds that anyone who “destroys or alters data,” “renders data meaningless, useless, or ineffective,” or otherwise interferes with data is also guilty of mischief (Rodrigues

1990:210–211). Actions falling within the latter subsection would not be considered property damage. It is, however, impossible to determine from the data source whether police records on mischief include offenses of this nature, and, if so, how many.

6. Enumeration areas are subdivisions of the permanent census tracts established by Statistics Canada, and they represent the smallest unit of census aggregation. There are typically several enumeration areas within a tract. Their boundaries are intended to define an area as homogenous as possible in terms of socioeconomic characteristics and to follow, where feasible, well-established natural boundaries (Lalu 1989:1).

7. Although the transit department maintained additional records on damage to buses and Light Rail Transit trains, they were excluded from this study, because they could not be spatially located.

8. Age groupings were chosen to allow a measure of residents in their teens or early adulthood. Actual cutoffs between age groups, however, reflect the limitations of the municipal census data, which recorded age by gender in categories rather than in any substantive or legal distinctions (in Canada, the cutoff between juvenile and adult status is 18 years).

9. Child density was included instead of broader measures of residential or neighborhood density; this was based on previous research that has identified this measure as predictive of increased levels of minor property damage (see Wilson 1978).

10. Commercial strips and smaller neighborhood malls were excluded because an exhaustive, valid measure of their presence or absence in a given area could not be developed for the city in which data were gathered. Many areas contained small, neighborhood strip malls that were identifiable as separate corporate entities. Others had commercial strips of very similar composition (typically centering on fast food outlets or convenience stores) that reflected the clustering of separate facilities within a municipal commercial zone. These latter areas were not identified as malls, although they effectively functioned as such.

11. An adjacent area was operationally defined as one sharing one or more common boundaries with an area containing a mall.

12. More detailed information on the technique of geocoding used for this study is available from the author.

13. This number includes three types of records: (1) those which had been recorded as a specific street address; (2) those recorded as occurring at a particular named building or facility, which in turn had a street address; and (3) those recorded as occurring at an intersection. For the latter group of incidents, a

specific street address could not be identified, nor could it be determined on which of four potential corners an incident had occurred. All incidents of this nature were therefore geocoded to the northwest corner of the intersection.

14. Missing data for the three types of property damage incidents included cases in which an address or specific location could not be identified, cases in which the indicated address or location did not exist (recording agency errors), and cases in which the indicated address or location corresponded to two or more potential locations.

15. The use of a population figure as the denominator in calculating a rate for the dependent variable may lead to spurious positive results if the same population figure is used to compute independent variables. Such a situation might arise in this analysis because predictors include the percentage of area residents falling into certain demographic categories (Bollen and Ward 1980: 61).

16. A further source of potential bias arises from the nature of the data and the possibility of spatial autocorrelation. Multivariate analyses such as the ordinary least squares (OLS) regression models employed in this study are based on the expectation that error terms are independent and do not vary systematically—a requirement that is rarely met with spatial data (Upton and Fingleton 1985:371). Instead, such data are likely to exhibit organized patterns or systematic spatial variation in values across a map (Cliff and Ord 1981:6; Upton and Fingleton 1985:151). High unemployment rates in one area, for example, do not abruptly drop at the border of that area; they tend to continue into neighboring areas. Such facilities as shopping malls, by contrast, will almost universally be absent from any area next to one in which they are present. However, the impact of such potential sources of bias is reduced as n increases (Upton and Fingleton 1985:365), and this study employs a fairly large n of over 650. Although spatial statistics have been developed to correct for such problems (see Anselin 1990a, 1990b; Anselin et al. 1996; Blommestein and Koper 1997), they involve more complex models than OLS regression and thus are appropriate if it appears that autocorrelation contributes to a significant distortion of coefficients. For this analysis, a post-hoc analysis of the differences between theoretically derived (expected) values and the corresponding observed values suggested little consistent spatial patterning that would seriously bias results, and hence regression models were retained (Cliff and Ord 1981:76).

17. The dimensions are those calculated by summing the area per square kilometer for all enumeration areas defined by the

City of Edmonton Municipal Census (1992) using mapping software. The size varies somewhat from that reported by other sources.

18. A single enumeration area was excluded from the analysis as an outlier. There were no statistically significant differences in population characteristics when this area was compared to others in the city. All measures were within one standard deviation of the mean for the city as a whole. It differed, however, in that it contains an architectural phenomenon touted as “the world’s largest shopping mall.” Although the relative size of malls was not included as a variable in this study, the enormity of this structure places it in a category by itself, so that it could not be treated as equivalent to other malls. It should be noted, however, that mischief and vandalism rates recorded for this area were extremely high, consistent with the assumption that such a facility would predict increased amounts of crime.

19. Recoding of park vandalism would have restricted this measure to three categories, which was deemed to provide inadequate variation. This measure was thus retained as recorded in the data.

20. The only exception is size; areas containing malls and schools are significantly smaller than those without. This finding is consistent with the observation, made previously, that there was an inverse relationship between area size and population. Larger areas were the more sparsely populated outlying districts, reflecting their smaller number of residents; they were less likely to contain schools and malls. Densely populated areas closer to the midzones of the city, by contrast, were smaller, but they were more likely to contain such facilities.



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REVIEW QUESTIONS

1. Of the three environmental factors that LaGrange examines, which appears to be the one that most affects high crime levels?
2. To what extent do the findings by LaGrange apply to the broken windows theory?
3. Have you observed such influences of environmental predictors in the place where you live or grew up? Provide details regarding how the proximity of such establishments or demographic characteristics has influenced the crime levels near your residences.

